EEL RIVER BRIDGE
SEISMIC RETROFIT PROJECT

INITIAL STUDY
Mitigated Negative Declaration

HUMBOLDT COUNTY, CALIFORNIA

DISTRICT 1 – HUM – 101 PMs R53.7 to M54.2

EA: 01-0A111 / EFIS: 0116000148

Prepared by the
State of California Department of Transportation

May 2023

General Information About This Document

What is in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study (IS) with Mitigated Negative Declaration (MND) which examines the potential environmental effects of the proposed Eel River Bridge Seismic Retrofit Project on U.S. Highway 101 near Rio Dell in Humboldt County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and proposed avoidance, minimization, and/or mitigation measures.

The draft IS/MND was circulated to the public from October 28, 2022, to November 30, 2022. Throughout this final environmental document, vertical lines in the left margin indicates changes made since the draft document circulation. Minor editorial changes and clarifications have not been indicated. Footnotes have been added to some sections to clarify the changes made. Like other changes, these footnotes are also indicated with a vertical line in the margin.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Myles Cochrane, Public Information Officer, North Region Environmental-District 1, 1656 Union Street, Eureka, CA 95501; (707) 445-6600 Voice, or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech) or 711.

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INITIAL STUDY
Mitigated Negative Declaration

Submitted Pursuant to: Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

5/17/2023
Date of Approval

Liza Walker
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North Region Environmental-District 1
California Department of Transportation
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MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, California Public Resources Code

SCH Number: 2022100650

Project Description

Caltrans proposes to partially replace and seismically retrofit the northbound U.S. Highway 101 Eel River Bridge from post miles R53.7 to M54.2 near Rio Dell, Humboldt County, California, about 250 miles north of San Francisco and 25 miles south of Eureka.

Determination

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

- The proposed project would have *No Impacts* to Agricultural and Forest Resources, Air Quality, Energy, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, and Utilities and Service Systems.

- The project would have *Less than Significant Impacts* to Aesthetics, Greenhouse Gas Emissions, Hydrology and Water Quality.

- With the following mitigation measures incorporated, the project would have *Less than Significant Impacts to* Biological Resources.
    - Mitigation for permanent impacts to wetlands and waters would be implemented.

Liza Walker

Liza Walker, Acting Office Chief
North Region Environmental–District 1
California Department of Transportation

5/18/2023
Date

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List of Acronyms and Abbreviated Terms

Acronym/Abbreviation	Description
ABMP	Additional Best Management Practices
AB	Assembly Bill
BFE	Base Flood Elevations
BMPs	Best Management Practices
BSA	Biological Study Area
CAFE	Corporate Average Fuel Economy
CAL-CET	Caltrans Construction Emissions Tool
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAPTI	Climate Action Plan for Transportation Infrastructure
CARB	California Air Resources Board
CAA	Clean Air Act
CC Chinook	California Coastal Chinook salmon
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CFS	cubic feet per second
CH_4	methane
CIA	Cumulative Impact Analysis
CIDH	Cast-In-Drilled-Hole
CIP	Cast-In-Place
CISS	Cast-In-Steel-Shell
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPA	Community Planning Areas
CPS	Coastal Pelagic Species
CRPR	California Rare Plant Rank
CTP	California Transportation Plan
CWA	Clean Water Act
dB	decibels
DBH	Diameter-at-Breast-Height

Acronym/Abbreviation	Description
DED	Draft Environmental Document
Department	Caltrans
DOT	Department of Transportation
DP	Director's Policy
DPS	Distinct Population Segment
DWR	(California) Department of Water Resources
ECL	Environmental Construction Liaison
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EO(s)	Executive Order(s)
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA(s)	Environmentally Sensitive Area(s)
ESL	Environmental Study Limits
ESU	Evolutionarily Significant Unit
ºF	degrees Fahrenheit
FED	Final Environmental Document
FEMA	Federal Emergency Management Agency
FERS	Floodplain Evaluation Report Summary
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FR	Federal Register
FYLF	Foothill yellow-legged frog
GHG	greenhouse gas
GP	General Plan
GWP	Global Warming Potential
H&SC	Health & Safety Code
HCAOG	Humboldt County Association of Governments
HCRCD	Humboldt County Resource Conservation District
HFCs	hydrofluorocarbons
HVF	High-Visibility Fencing
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
IS/MND	Initial Study / Mitigated Negative Declaration
LCFS	low carbon fuel standard
LRA	Local Responsibility Area
LSAA	Lake or Streambed Alteration Agreement (CDFW)
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MMT	million metric tons

Acronym/Abbreviation	Description
$MMTC0_2e$	million metric tons of carbon dioxide equivalent
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSE	Mechanically Stabilized Earth
MTP	Metropolitan Transportation Plan
N_2O	nitrous oxide
NAGPRA	Native American Graves Protection Repatriation Act of 1990
NAHC	Native American Heritage Commission
NB	Northbound
NC	Northern California
NC	North Coast
NCRWQCB	North Coast Regional Water Quality Control Board
NCSC	Natural Communities of Special Concern
ND	Negative Declaration
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NHTSA	National Highway Traffic and Safety Administration
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRLF	Northern red-legged frog
NSO	Northern spotted owl
O_3	ozone
OHW	Ordinary High Water
OHWM	Ordinary High Water Mark
OPR	Governor’s Office of Planning and Research
OW	Other Water
PCR	Project Change Request
PDT	Project Development Team
PG&E	Pacific Gas & Electric
PM(s)	post mile(s)
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPT	parts per thousand
PRC	Public Resources Code (California)
PSS	Palustrine scrub-shrub
PTE	Permit to Enter
RCEA	Redwood Coast Energy Authority
RCP	Representative Concentration Pathways
RSP	Rock Slope Protection

Acronym/Abbreviation	Description
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SB	Southbound
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SEL	Sound Exposure Level
SHPO	State Historic Preservation Officer
SHS	State Highway System
SLR	Sea Level Rise
SNC(s)	Sensitive Natural Community(ies)
SO_2	sulfur dioxide
SR	State Route
SONCC	Southern Oregon/Northern California Coast ESU
SPCC Plan	Spill Prevention, Control and Countermeasures Plan
SPGA	Soldier Pile Ground Anchor
SRAs	State Responsibility Areas
SRZ	Structural Root Zone
SSC	Species of Special Concern
STRAIN	Structure Replacement and Improvement Needs
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
THVF	Temporary High Visibility Fencing
TMP	Transportation Management Plan
U.S. or US	United States
U.S. 101	U.S. (United States) Highway 101
USACE	United States Army Corps of Engineers
USC	United States Code
U.S. DOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VA	Value Analysis
VIA	Visual Impact Assessment
VMT	Vehicle Miles Traveled
W1	Wetland 1
WIFL	Little willow flycatcher
WPCP	Water Pollution Control Program

Acronym/Abbreviation	Description
WPT	Western pond turtle
WQAR	Water Quality Assessment Report
WSP	Western snowy plover
YBCU	Yellow-billed cuckoo

Chapter 1. Proposed Project

1.1 Project History

This project originally proposed to seismically retrofit two bridges in Humboldt County. A Project Scope Summary Report was completed in March 2013 for a seismic retrofit project that consisted of bridge locations along United States (U.S.) Highway 101 (U.S. 101) in Humboldt County as described below:

- Bridge Location 1: South Fork Eel River Bridge (Bridge #04-0123) at PM 27.71, built in 1962, near Myers Flat.
- Bridge Location 2: Eel River Bridge (Bridge #04-0016L/R) at PM 53.91, built in 1941 and repaired in 1965 and 1989, near Rio Dell.

In 2016, new inspection findings and updated input from the Project Development Team (PDT) resulted in the determination the South Fork Eel River Bridge was scour critical and scour remediation would need to be completed with the retrofit work.

A Supplemental Project Study Report was completed in September 2016 and a Project Change Request (PCR) was approved in April 2017 to reflect the cost and scope changes. As a result of the PCR, the original project was split into two separate projects. The original EA 01-0A110 remained with the South Fork Eel River Bridge Seismic Retrofit Project (Bridge #04-0123), while the currently proposed project, EA 01-0A111, was created to include the work for Eel River Bridge Seismic Retrofit Project (Bridge #04-0016R). This document contains information on the Eel River Bridge Seismic Retrofit Project and will not include further discussion of the South Fork Bridge project.

In March 2021, off-alignment Alternatives 2 and 2A were eliminated from EA 01-0A111 as infeasible or failing to meet the purpose and need. Alternative 1A, the partial replacement and retrofit of the northbound bridge, continued through the design process and environmental review pursuant to the California Environmental Quality Act (CEQA). The Department of Transportation (Caltrans) is the lead agency under the CEQA.1.2 Project Description

Caltrans proposes to partially replace and seismically retrofit the northbound U.S. Highway 101 Eel River Bridge from post miles (PMs) R53.7 to M54.2 in Humboldt County, California (Figures 1 and 2), about 250 miles north of San Francisco and 25 miles south of Eureka.

Project Objective

Purpose

The purpose of this project is to improve the integrity of the structure by performing a seismic retrofit on the bridge as identified in the scope of work. This project would also improve a non-standard curve at the southern approach to the bridge at Abutment 1.

Need

The project is needed to repair the seismic deficiencies of the bridge and improve its structural integrity to withstand a seismic event. This bridge was identified in the Structure Replacement and Improvement Needs (STRAIN) Report as a seismically vulnerable bridge.

1.2 Proposed Project

The project would replace Spans 1 through 4 of the northbound Eel River Bridge with a cast-in-place (CIP), prestressed box girder bridge (Appendix A). The remaining Spans 5 through 8 would be seismically retrofitted. Additional work would include constructing a retaining wall to realign the northbound bridge approach.

Construction access and staging areas are available in the median areas between the northbound and southbound bridges on either side of the Eel River. Northbound traffic would be detoured to the southbound bridge during construction. Although temporary construction easements would not be required, an encroachment permit from the County of Humboldt would be required at the north end of the bridge where abutment work is proposed.

The project would require temporary access road construction, on-site staging areas, vegetation and tree removal, pile driving and drilling, cofferdams, and trestles. Access to the river bar below the bridge would likely be from the northern side of the river; however, it may be necessary to construct temporary access roads at both ends of the bridge. Once all work is completed, temporary access roads would be removed, and the embankments would be restored and revegetated.

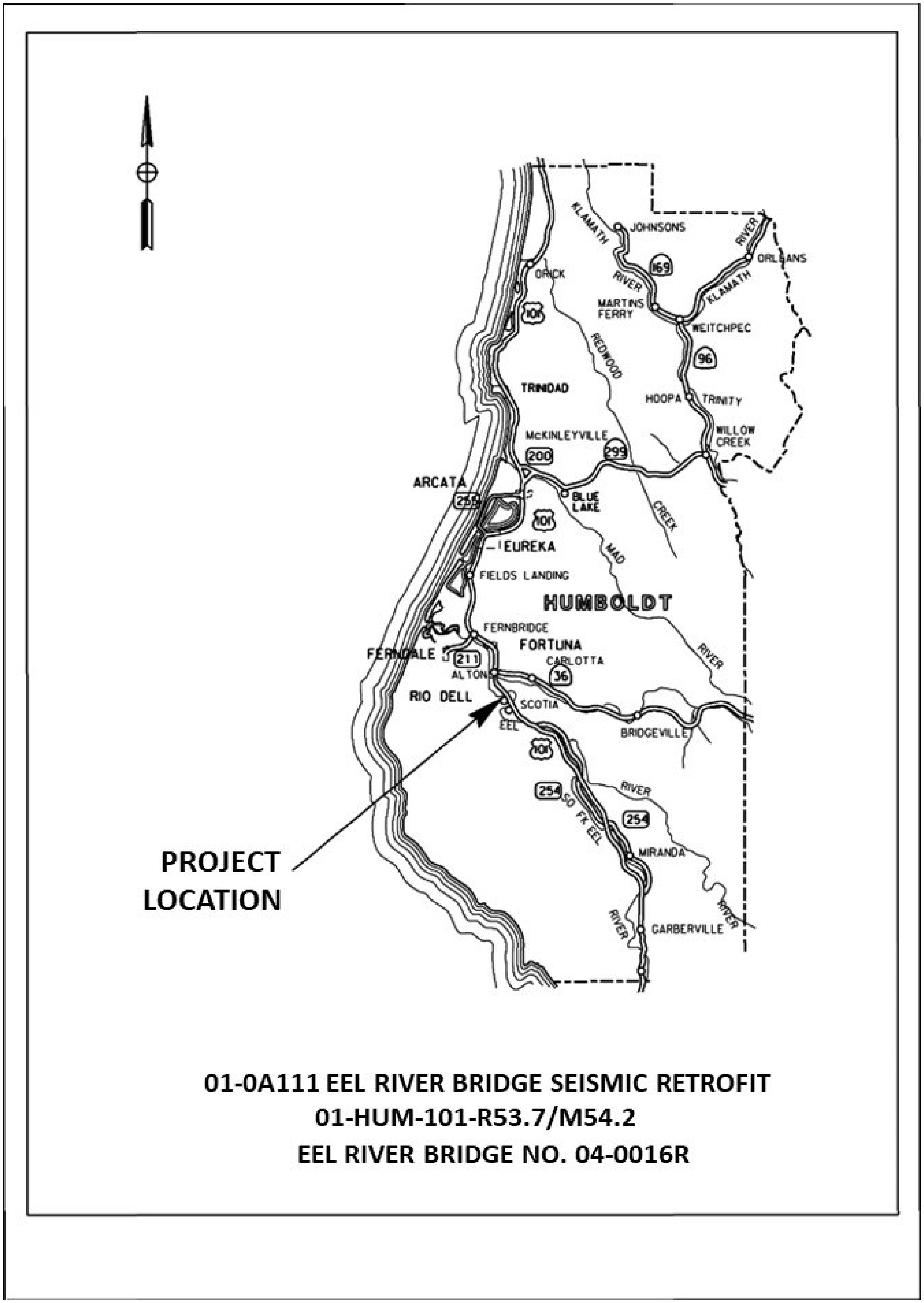

Figure 1. Project Vicinity

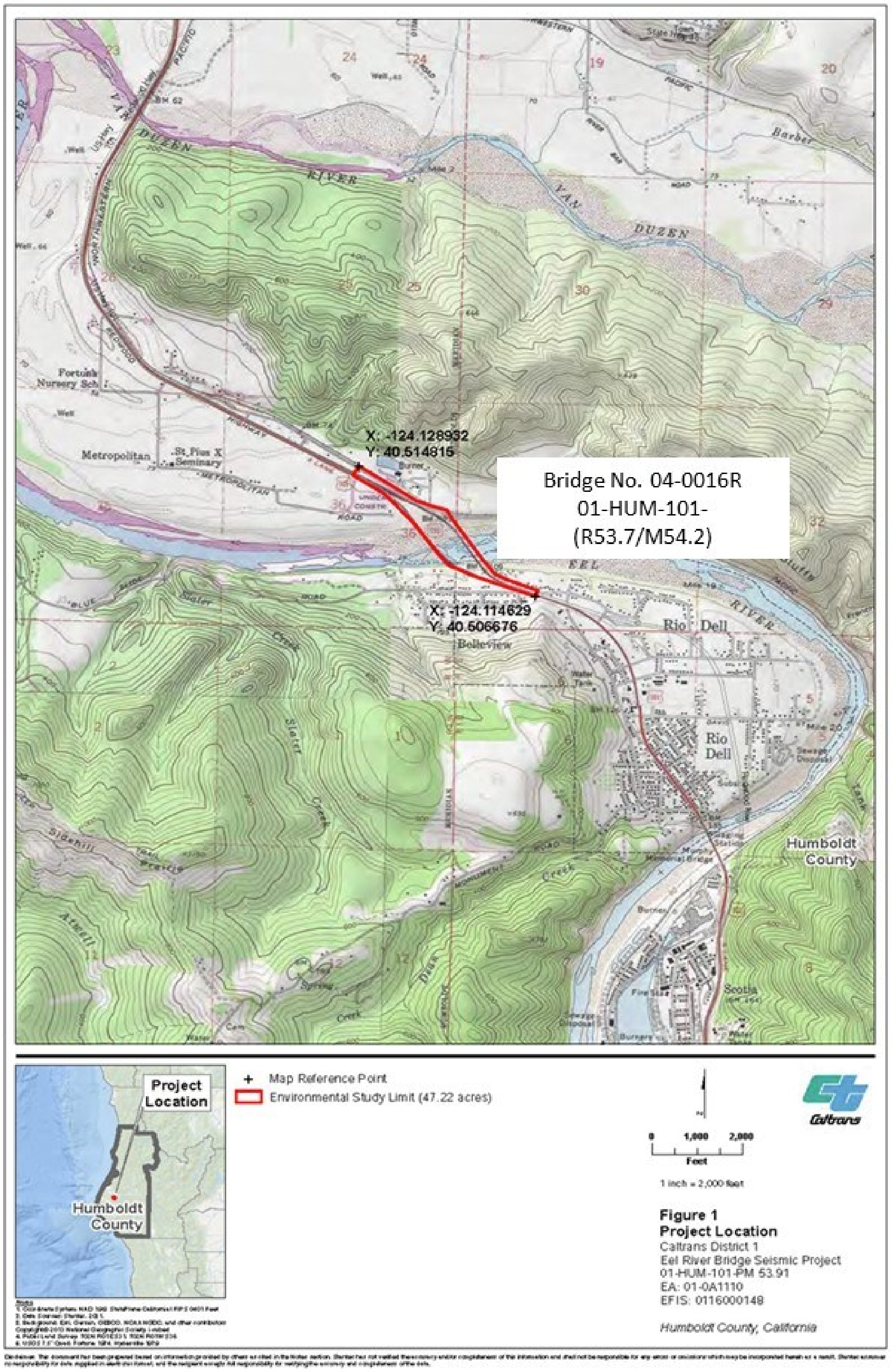

Figure 2. Project Location Map

All work on or below the structure would occur within the permitted work windows. All sub-structure work would be performed below the bridge deck from temporary trestles and temporary access roads. A permanent relocation of existing utilities (gas and water main) would be required. A realignment of the roadway would be performed at Abutment 1 (Appendix A). The proposed scope of work for Alternative 1A is as follows:

- Relocate underground utilities (by others prior to the Construction phase)
- Restripe roadway for northbound traffic detour
- Move northbound traffic to southbound bridge
- Remove the existing through-truss bridge from Abutment 1 to Pier 5
- At Pier 5, construct new pier, seismic joint and base isolation bearing
- Construct new Cast-In-Place, Post-Tensioned Box Girder Bridge from Abutment 1 to Pier 5
- Retrofit footings at Piers 6, 7, and 8
- Retrofit Abutment 9
- Strengthen overhang and upgrade bridge railing*
- Place 1" polyester overlay from Abutment 1 to Abutment 9
- Remove northbound approach roadway section
- Construct retaining wall at approach to Abutment 1
- Install drainage inlet and RSP dissipator
- Construct realigned northbound roadway approach to Abutment 1
- Restripe roadway

*The amount of strengthening needed, if any, and the additional cost for the bridge rail upgrade, will be determined during the design phase of the project.

The construction scenario is discussed below and depicted on Project Layouts in Appendix A.

Construction Scenario

The project proposes to remove the steel truss spans from Abutment 1 to Pier 5 (Appendix A). This type of work requires access from the ground along both sides of the bridge. Tree and vegetation removal, as well as an access road and/or a temporary work trestle, would be required and constructed in the first season. Traffic would be detoured to southbound U.S. 101 once access is developed and demolition work can begin.

Typical construction equipment to develop access would consist of small dozers (Cat D6), excavators (Cat 215), cranes (Linkbelt 100-ton truck or crawler type), impact pile hammers (Delmag 16-32), vibratory pile hammers (Hammer & Steel), hydraulic cranes (40 ton), and boom trucks.

For these scenarios, it is presumed that a construction season for work below ordinary high water would be from June 15 to October 15 of any year. It is also presumed that bridge work can proceed during the off-season if work is performed above the banks of the river channel and outside of jurisdictional waters and riparian vegetation. Weather permitting, and if access is developed in the first season, traffic could be diverted to southbound U.S. 101 and bridge removal could begin in the first season.

Preconstruction and Site Preparation

Prior to construction, site preparation would include delineating construction work areas, installing environmentally sensitive area (ESA) fencing around sensitive habitats, implementing Best Management Practices (BMPs) in accordance with the project's Stormwater Plan, and removing vegetation.

Traffic Management

Traffic would be detoured to southbound U.S. 101 once access is developed, then demolition work can begin. Northbound traffic would be routed back onto the new bridge upon project completion.

Staging and Access Roads

The project would require access roads (Appendix A). Access beneath the bridge would likely be from the north side of the river; however, it may be necessary to construct temporary access roads at both ends of the bridge. Once all work is completed, the temporary access roads would be removed, and the embankments restored and revegetated. The roads are anticipated to be approximately 20 feet wide, but may vary at some locations to allow equipment turnarounds, equipment passing, work areas, etc. Depending on access road conditions and locations, the roads might need to be overlain with gravel pads (typically made of 2 to 3-inch-diameter open-graded or washed aggregate (stone or crushed concrete) or fills on top of geotextile fabric. Some light grading may be needed to construct the roads.

The construction zone width along/adjacent to the bridge is anticipated to be approximately 20 to 30 feet beyond the edge on both sides of the existing bridge deck. Staging of construction materials and equipment are expected to be within the Caltrans right of way in the existing medians located between the northbound US 101 Paul Mudgett Bridge (Br. #04-0016R) and the southbound bridge (Br. #04-0016L).

Construction Equipment

Typical equipment used for bridge construction includes pavers, cranes, drills, drill rigs, hoe rams, pile drivers, vibratory hammers, excavators, backhoes, manlifts, cranes, pickup trucks, hauling and dump trucks, compactors, portable generators, boom trucks, concrete trucks, saws, pumps, jackhammers, site trailers, storage boxes, and mobile filtration boxes. Mobile water filtration boxes (Baker Tanks) may be used for dewatering needs in lieu of sediment basins.

A list of equipment used for this project, and associated sound levels, is provided below in Table 1.

Table 1. Construction Equipment Noise

Sound Source	Decibel Value[1]
Backhoe	80
Concrete Pump Truck	82
Concrete Saw	90
Crane	85
Drill Rig Truck	84
Excavator	85
Front End Loader	87
Heavy Trucks	88
Hoe Ram	90
Impact Pile Driving	95-101
Jackhammers	85
Man Lift	85
Portable Generators	82
Pneumatic Tools	85
Pumps	87
Vibratory Hammers	88

[1] U.S. Department of Transportation (FHWA 2017). Construction Noise Handbook. Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors.

Utility Relocation

City of Rio Dell water lines and a Pacific Gas and Electric Company (PG&E) high pressure gas line would be permanently relocated prior to project construction to ensure consistent service to the local communities. The utility relocations would occur within the Caltrans right of way and include directional boring under the Eel River in compliance with applicable laws and regulations.

Bridge Retrofit

Deck and Pier Replacement

All removal work would be performed in accordance with an approved Demolition and Lead Compliance Plan and would begin with torch-cutting and removing bracing members. At this point, a decision would be made to proceed with deck concrete removal or wait until the next construction season. Once all truss steel above the deck is removed, the deck concrete would be broken with a hydraulic ram mounted to an excavator (hoe-ram). Concrete rubble would fall to an installed containment system before being broken up further to separate out the reinforcing steel for recycling.

Once the deck concrete removal work is complete, the steel girders would be removed by crane. Abutment and pier demolition work would be the final demolition operation. The abutment would not likely require shoring; however, pier removal could require a sheet pile cofferdam to control water and to remove the pier below original ground. Water trapped within the cofferdam would be pumped to Baker Tanks or a sedimentation basin located on the river bar. Sheet pile cofferdams would be constructed using cranes, vibratory pile hammers, and excavators.

Substructure Retrofit

All retrofit and new substructure work would likely follow the bridge removal operations due to the need to share trestle access. Substructure work would begin with installation of a shoring system that is similar in all respects to the pier removal work described above. Substructure retrofit work is anticipated to consist of pile shaft enlargement, steel casings, and rock placement around the pier to mitigate scour degradation. As the substructure retrofit work progresses, the new foundation work could follow starting at Abutment 1, then Piers 2, 3, 4, and 5.

The foundation type has not yet been selected; however, two options are being considered—pier shaft and pile-supported footings. The bridge foundation type would be selected once all geotechnical data has been analyzed by engineering geologists and structural engineers, typically in the final design phase. The same means and methods for bridge pier removal would apply to the new foundation construction. Reinforcing steel, formwork, and concrete for either type of foundation would be placed from the trestle deck. Concrete would be delivered in typical mixer trucks and placed with a concrete pump. Concrete pouring for the pier shafts would likely be done inside the cofferdams, with the sheet pile being extracted after completion.

Falsework

As the substructure work moves ahead into Span 2, falsework construction for the new bridge would begin in Span 1. Depending on time of year, this work may pause for winter due to permitted seasonal work windows. Five spans of falsework could be expected for each of the four bridge spans that could extend a total of 781 feet into the river channel. Each falsework bent would likely be founded on driven steel piles constructed with cranes, all-terrain-type forklifts, impact pile hammers, and man-lifts.

Falsework bents usually consist of steel pipe or steel wide-flange sections. If fabricated on the ground ahead of pile driving work, an entire bridge span of falsework bents can be erected in a single day. As falsework bents advance to the next bridge span, a crane located at Abutment 1 would place falsework stringers and soffit decking material. Each bridge span of stringers and soffit decking could take one or two weeks to complete, depending on crew size and falsework design.

Following completion of the falsework, typical bridge construction activities would commence, including formwork and reinforcement placement by crane from the abutment and the trestle, concrete deliveries and pumping from the abutment and trestle, and formwork and falsework removal by crane and forklift from the trestle.

After the superstructure is complete and bridgework equipment removed to allow for roadwork activities on the realignment of the approach, the abutment would be backfilled. Typical earthwork activities for the minor realignment would include clearing and grubbing of vegetation, embankment cutting, and backfilling along the outside shoulder to straighten out the highway curvature; placement of sub-base material, which could consist of recycled concrete; placement of aggregate base; and placement of the structural section, which could be asphalt or concrete. Typical construction equipment for these types of activities consists of small dozers (D6), graders, rubber-tired backhoes, vibratory compactors, and asphalt paving equipment or concrete pavement equipment.

Pile Driving

The design of the temporary structures would be completed by the contractor at the time of construction. The assumptions included in this assessment are based on the construction engineer's best estimate of potential construction activity. The temporary structures may be supported by driven piles, drilled piles, spread footings on timber pads, or a combination of all. Driven piles would most likely be installed with a low energy impact hammer (32K ft-lbs) or vibratory hammer. It is estimated the piles would be H-piles or steel pipe piles 24 inches or less in diameter. There could be up to 600 pile strikes per day. At this time, it is presumed piles would be installed in shallow water or on land immediately adjacent to shallow water.

Bridge foundation information will not be available until later in the development of the foundation design. Based on available information, it is anticipated the foundations could consist of 36-inch-diameter cast-in-steel-shell (CISS) piles or 12-foot-diameter cast-in-drilled-hole (CIDH) pile shafts with driven steel casings. These foundation types could utilize a vibratory hammer in combination with an impact hammer. Hammer energy could be in the range of 70K to 150K ft-lbs with anticipated strikes per day of 1,000 to 3,000.

Trestles

The trestles, anticipated to be 20 to 30 feet wide, would be installed prior to any pier foundation or scour remediation work. The trestles would likely be located along the access roads identified in the project layouts (Appendix A). Rows of piles would likely be spaced every 30 feet along the length of the trestle, and 8 feet apart within rows.

Realignment

Once the superstructure is complete, the abutment is backfilled, and the bridgework equipment is removed, roadwork activities for the realignment of the roadway would begin, approaching the bridge from the south. Typical earthwork activities for the minor realignment would include clearing and grubbing of vegetation, embankment cutting and backfilling along the outside shoulder to straighten out the highway curvature; placement of sub-base material, which could consist of recycled concrete; placement of aggregate base; and placement of the structural section, which could be asphalt or concrete. Typical construction equipment for these types of activities includes small dozers (D6), graders, rubber-tired backhoes, vibratory compactors and asphalt paving equipment or concrete pavement equipment.

Following approach paving, concrete bridge railing and metal beam guardrail would be placed. Temporary access road removal, erosion control, and revegetation work, along with a polyester overlay from Abutments 1 to 9, final highway striping, and demobilization would complete the major activities of this construction phase.

Retaining Wall

Three alternatives for a retaining wall are being considered. To realign the northbound bridge approach and remove an existing non-standard curve, a 590-foot-long retaining wall would be constructed along the right side of the roadway embankment. The wall type would include a soldier pile ground anchor (SPGA), soil nail, or a mechanically stabilized earth (MSE) retaining system. The wall would include the construction of a Type 842 concrete barrier rail.

Cofferdam Installation and Clear Water Diversion

Construction dewatering of the project site may be required to remove water during pier construction, retrofit work, and during removal of existing pier footings. Within the wetted channel, cofferdam sheet pile installation would be done with a vibratory hammer or through aqua barriers. Water would then be pumped out of the cofferdam. Since the cofferdam might experience groundwater intrusion, continuous pumping may be necessary. In this scenario, water would likely be pumped to a sediment basin or tank. Cofferdams may also be constructed at bent locations on land if water intrusion is anticipated.

A clear water diversion system may be installed seasonally if necessary to divert water around pier construction or retrofit areas. Clear water diversions consist of a system of structures and measures that intercept clear surface water runoff upstream of a project, transport it around the work area, and discharge it downstream with minimal water quality degradation from either the project construction operations or the construction of the diversion.

Water generated from the dewatering operations from cofferdams would be disposed of per the *Caltrans Field Guide to Construction Site Dewatering* (Caltrans 2014) and the authorized Dewatering Plan (Section 1.4).

Disturbed Soil Areas

As part of the project, fill would be placed, and cuts would be made (Appendix A). Access roads and under-bridge work would create approximately 2.11 acres of temporary disturbed soil area, though this area may be less depending on the access roads used.

Site Cleanup

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 Plan. Wetland and riparian vegetation would be planted from November 1 to February 28 in the year following completion.

Construction Schedule

Construction is anticipated to start in late 2025, although any work below the ordinary high-water line would begin on or after June 15, 2026. The project is estimated to take approximately three years to complete. The tentative schedule does not account for excessive weather delays, potential mechanical breakdowns, or harder than anticipated soil conditions for pile installation and demolition activities.

Work Windows

The following seasonal restrictions are anticipated:

- All work within jurisdictional waters within the project area would be restricted to June 15 to October 15 of the construction season.
- Activities within the construction zone would be subject to regulatory agency constraints, including the United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), United States Army Corp of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and North Coast Regional Water Quality Control Board (NCRWQCB).

No-Build Alternative

This alternative would maintain the facilities in their current condition without addressing the needs to seismically retrofit the bridge and improve the northbound non-standard approach curve. Under the No-Build Alternative, no alterations to the existing conditions would occur and the proposed improvements would not be implemented.

Alternatives Considered but Eliminated from Further Consideration

The Caltrans Value Analysis (VA) Team recommended Alternative 1A, replacing the existing truss bridge, as the preferred alternative to develop for construction. The Project Development Team (PDT) concurred with this decision. Alternatives eliminated from further consideration include Alternative 1 and Alternative 2.

Alternative #1: This alternative would have included abutment and pier retrofit work, pedestal and catcher block construction, and new outrigger bents at Piers 2 and 5. Much of this work would require access from the ground along both sides of the bridge. Tree and vegetation removal, along with an access road and/or a temporary work trestle, would have been required and constructed in the first season. This alternative was eliminated as it would not meet the project need to repair the seismic deficiencies of the bridge and improve its structural integrity to withstand a seismic event.

Alternative #2: This alternative would have constructed a new bridge parallel to the existing southbound bridge and removed the existing northbound bridge. Realignment of northbound U.S. 101 would have been required at both the north and south ends of the new bridge. This alternative was determined to be outside of the current project budget and infeasible.

General Plan Description, Zoning, and Surrounding Land Uses

The Humboldt County General Plan (GP) (County of Humboldt 2018) adopted October 23, 2017, designated Community Planning Areas (CPAs) that include the Rio Dell-Scotia CPA. In the mid to late 1960s, the County General Plan comprised land use plans: Northern Humboldt County General Plan, Arcata General Plan, and Southern Humboldt General Plan (unincorporated Rio Dell and the inland portion of Shelter Cove). These plans were not superseded by the December 10, 1984, Humboldt County GP -Volume 1- Framework Plan and the County has continued to use the land use maps and land use designations in CPAs that do not have adopted plans, including the City of Rio Dell.

The Rio Dell city limits include a portion of the northbound Eel River Bridge and the adjacent zoning includes Industrial/Commercial and Natural Resources (Figure 3).

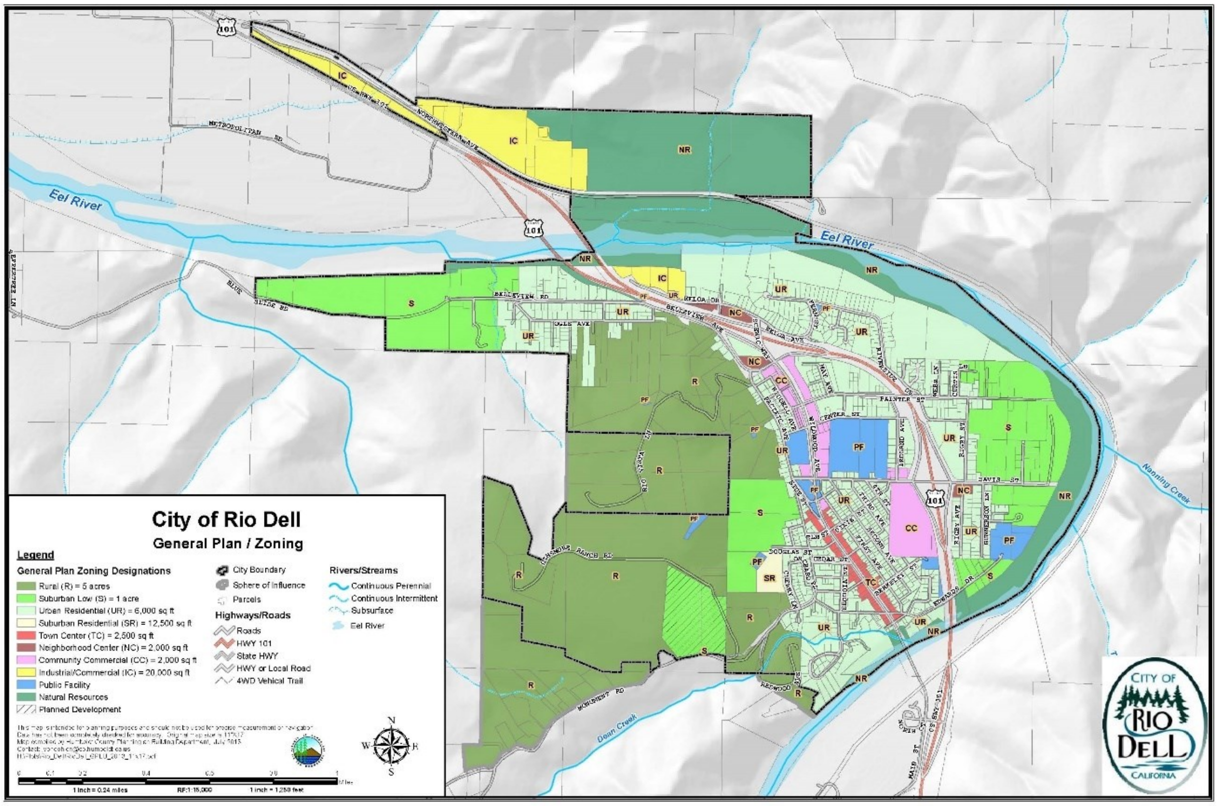

Figure 3. City of Rio Dell General Plan Zoning Map

1.3 Permits and Approvals Needed

The following table indicates the permitting agency, permits/approvals, and status of permits required for the project.

Table 2. Agency, Permit/Approval, and Status

Agency	Permit/Approval	Status
California Department of Fish and Wildlife (CDFW)	FGC 1602 LSA Agreement	Obtain after Final Environmental Document (FED) approval
California Department of Fish and Wildlife	State Wild and Scenic Rivers Act Consultation	Obtain after FED approval (during 1602 LSA Agreement process
California Department of Fish and Wildlife	CFGC 2080.1 Agreement for Threatened and Endangered Species	Obtain after Draft Environmental Document (DED) circulation and NMFS Section 7 consultation
California State Lands Commission	State Lands Lease	Obtain after FED approval
Regional Water Quality Control Board (RWQCB)	Clean Water Act (CWA) Section 401 Water Quality Certification	Obtain after FED approval
National Marine Fisheries Service (NMFS)	Section 7 Consultation for Threatened and Endangered Species	Consultation initiated after DED
U.S. Army Corps of Engineers (USACE)	CWA Section 404 Permit for filling or dredging waters of the United States	Obtain after FED approval
National Park Service (NPS)	Wild and Scenic Rivers Act Section 7 Consultation	Obtained 3/31/2023

Projects affecting Wild and Scenic Rivers are subject to the National Wild and Scenic Rivers Act (16 United States Code [USC] 1271) and the California Wild and Scenic Rivers Act (California Public Resources Code [PRC] § 5093.50 et seq.). See Appendix E for more information.

1.4 Standard Measures and Best Management Practices Included in All Alternatives

Under CEQA, "mitigation" is defined as avoiding, minimizing, rectifying, reducing/ eliminating, and compensating for an impact. In contrast, Standard Measures and Best Management Practices (BMPs) are prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring for a project. They are measures that typically result from laws, permits, agreements, guidelines, and resource management plans and contain refinements in planning policies and implementing actions. These practices predate the project's proposal and apply to all similar projects. For this reason, the measures and practices are not considered "mitigation" under CEQA; rather, they are included as part of the project description in environmental documents.

The following section provides a list of project features, standard practices (measures), and Best Management Practices (BMPs) that are included as part of the project relevant to the protection of natural resources.

Aesthetics Resources

AR-1: Aesthetic treatment to bridges/guardrails/retaining walls would be included, such as tribal patterns, to address context sensitivity.

AR-2: Temporary access roads, construction easements, and staging areas that were previously vegetated would be restored to a natural contour and revegetated with regionally appropriate native vegetation.

AR-3: Where feasible, guardrail terminals would be buried; otherwise, an appropriate terminal system would be used, if appropriate.

AR-4: Where feasible, construction lighting would be limited to within the area of work.

AR-5: Where feasible, the removal of established trees and vegetation would be minimized. Environmentally sensitive areas would have Temporary High Visibility Fencing (THVF) installed before start of construction to demarcate areas where vegetation would be preserved, and root systems of trees protected.

Biological Resources

BR-1: General

Before start of work, as required by permit or consultation conditions, a Caltrans biologist or Environmental Construction Liaison (ECL) would meet with the contractor to brief them on environmental permit conditions and requirements relative to each stage of the proposed project, including, but not limited to, work windows, drilling site management, and how to identify and report regulated species within the project areas.

BR-2: Animal Species

A. To protect migratory and nongame birds (occupied nests and eggs), if possible, vegetation removal would be limited to the period outside of the bird breeding season (removal would occur between September 16 and January 31). If vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist within one week prior to vegetation removal. 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 would be delineated around each active nest and construction activities would be excluded from these areas until birds have fledged, or the nest is determined to be unoccupied.

B. A Bird Exclusion Plan would be prepared by a qualified biologist prior to construction. Exclusion devices would be designed so they would not trap or entangle birds or bats. Exclusion devices would be installed outside of the breeding season (September 16 through January 31) to eliminate the re-occupancy of existing structures by migratory bird species that may attempt to nest on the structure during construction. On structures or parts of structure where it is not feasible to install bird exclusion devices, 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 through September 15 with biologist discretion) to prevent their occupation. Nest removal would be repeated weekly under guidance of a qualified biologist to ensure nests are inactive prior to removal.

C. Pre-construction surveys for active raptor nests within one-quarter mile of the construction area would be conducted by a qualified biologist within one week prior to 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 are 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 young have fledged.

D. A Bat Exclusion Plan would be prepared by a qualified biologist prior to construction. Exclusion devices would be designed so they would not trap or entangle bats or birds. The Bat Exclusion Plan would include guidelines for appropriate date of exclusion and temperature parameters based on bridge type, geographic location, and species present. At the direction of a qualified biologist, exclusion devices would be installed after the maternity season but before hibernation. If overlapping resources are present (e.g., nesting birds), coordination between the Bat Exclusion Plan and any other relevant plans would occur. Measures would be monitored by a qualified biologist.

E. To prevent attracting corvids (birds of the *Corvidae* family which include jays, crows, and ravens), no trash or foodstuffs would be left or stored on-site. All trash would be deposited in a secure container daily and disposed of at an approved waste facility at least once a week. Also, on-site workers would not attempt to attract or feed any wildlife.

F. Hydroacoustic monitoring would occur during activities such as impact pile driving, hoe ramming, or jackhammering which could potentially produce impulsive sound waves that may affect listed fish species. Hydroacoustic monitoring would comply with the terms and conditions of federal and state Endangered Species Act consultations.

The Hydroacoustic Monitoring Plan would describe the monitoring methodology, frequency of monitoring, positions that hydrophones would be deployed, techniques for gathering and analyzing data, quality control measures, and reporting protocols.

To reduce potential hydroacoustic impacts to anadromous species due to impact pile driving, a sound-attenuation system may be implemented. The sound attenuation system would be used for piles installed in water by an impact hammer. If the sound attenuation system fails, pile driving will stop immediately and will not resume until the system is operational.

Types of sound attenuation system include, but are not limited to:

a) Confined bubble curtain

b) Unconfined bubble curtain

c) Isolation casings

G. A qualified biologist would monitor in-stream construction activities that could potentially impact sensitive biological receptors (e.g., amphibians, fish). The biological monitor would be present during activities such as installation and removal of dewatering or diversion systems, bridge demolition, pile-driving and hoe-ramming, and drilling for bridge foundations to ensure adherence to permit conditions. In-water work restrictions would be implemented.

H. An Aquatic Species Relocation Plan, or equivalent, would be prepared by a qualified biologist and include provisions for pre-construction surveys and the appropriate methods or protocols to relocate any species found. If previously unidentified threatened or endangered species are encountered or anticipated incidental take levels are exceeded, work would either be stopped until the species is out of the impact area, or the appropriate regulatory agency would be contacted to establish steps to avoid or minimize potential adverse effects. This Plan may be included as part of the Temporary Creek Diversion System Plan identified in **BR-5**.

I. Artificial night lighting may be required. To reduce potential disturbance to sensitive resources, lighting would be temporary, and directed specifically on the portion of the work area actively under construction. Use of artificial lighting would be limited to Cal/OSHA work area lighting requirements.

J. A Limited Operating Period would be observed, whereby all in-stream work below ordinary high water (OHW) would be restricted to the period between June 15 and October 15 to protect water quality and vulnerable life stages of sensitive fish species.

BR-3: Invasive Species

Invasive non-native species control would be implemented. Measures would include:

- Straw, straw bales, seed, mulch, or other material used for erosion control or landscaping which would be free of noxious weed seed and propagules.
- All equipment would be thoroughly cleaned of all dirt and vegetation prior to entering the job site to prevent importing invasive non-native species. Project personnel would adhere to the latest version of the *California Department of Fish and Wildlife Aquatic Invasive Species Cleaning/Decontamination Protocol (Northern Region)* for all field gear and equipment in contact with water.

BR-4: Plant Species and Sensitive Natural Communities

A. Seasonally appropriate, pre-construction surveys for sensitive plant species would be completed (or updated) by a qualified biologist prior to construction in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

B. A Revegetation Plan would be prepared which would include a plant palette, establishment period, watering regimen, monitoring requirements, and pest control measures. The Revegetation Plan would also address measures for wetland and riparian areas temporarily impacted by the project.

C. Prior to the start of work, Temporary High Visibility Fencing (THVF) and/or flagging would be installed around sensitive natural communities, environmentally sensitive habitat areas, rare plant occurrences, intermittent streams, and wetlands and other waters, where appropriate. No work would occur within fenced/flagged areas.

D. Where feasible, the structural root zone would be identified around each large-diameter tree (>2-foot diameter at breast height [DBH]) directly adjacent to project activities, and work within the zone would be limited. When possible, excavation of roots of large diameter trees (>2-foot DBH) would not be conducted with mechanical excavator or other ripping tools. Instead, roots would be severed using a combination of root-friendly excavation and severance methods (e.g., sharp-bladed pruning instruments or chainsaw). At a minimum, jagged roots would be pruned away to make sharp, clean cuts.

E. After completion, all superfluous construction materials would be completely removed from the site. The site would then be restored by regrading and stabilizing with a hydroseed mixture of native species along with fast growing sterile erosion control seed, as required by the Erosion Control Plan.

BR-5: Wetlands and Other Waters

A. Prior to any creek diversion, the contractor would be required to prepare and submit a Temporary Creek Diversion System Plan to Caltrans for approval. Depending on site conditions, the plan may also require specifications for the relocation of sensitive aquatic species (see also Aquatic Species Relocation Plan in **BR-2H**). Water generated from the diversion operations would be pumped and discharged according to the approved plan and applicable permits.

B. In-stream work would be restricted to the period between June 15 and October 15 to protect water quality and vulnerable life stages of sensitive fish species (see also **BR-2J**). Construction activities restricted to this period include any work below the ordinary high water mark (OHWM). Construction activities performed above the ordinary high water mark of a watercourse that could potentially directly impact surface waters (i.e., soil disturbance that could lead to turbidity) would be performed during the dry season, typically between June through October, or as weather permits per the authorized contractor-prepared Storm Water Pollution Prevention Plan (SWPPP), Water Pollution Control Program (WPCP),) and/or project permit requirements.

C. See **BR-4C** for Temporary High Visibility Fencing (THVF) information.

D. If allowed by regulatory agencies, temporary wetland protection mats may be used to prevent permanent damage and minimize temporary damage to wetlands from construction activities. Mats should be designed to accommodate motorized equipment or vehicles. Mats shall be removed when wetland access is no longer needed or by November 1 of each year.

Cultural Resources

CR-1: If cultural materials are discovered during construction, work activity within a 60-foot radius of the discovery would be stopped and the area secured until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer (SHPO).

CR-2: If human remains and related items are discovered on private or State land, they would be treated in accordance with State Health and Safety Code § 7050.5. Further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to California Public Resources Code (PRC) § 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) who would then notify the Most Likely Descendent (MLD).

Human remains and related items discovered on federally owned lands would be treated in accordance with the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (23 USC 3001). The procedures for dealing with the discovery of human remains, funerary objects, or sacred objects on federal land are described in the regulations that implement NAGPRA 43 CFR Part 10. All work in the vicinity of the discovery shall be halted and the administering agency's archaeologist would be notified immediately. Project activities in the vicinity of the discovery would not resume until the federal agency complies with the 43 CFR Part 10 regulations and provides notification to proceed.

Geology, Seismic/Topography, and Paleontology

GS-1: The project would be designed to minimize slope failure, settlement, and erosion using recommended construction techniques and Best Management Practices (BMPs). New earthen slopes would be vegetated to reduce erosion potential.

GS-2: In the unlikely event that paleontological resources (fossils) are encountered, all work within a 60-foot radius of the discovery would stop, the area would be secured, and the work would not resume until appropriate measures are taken.

Greenhouse Gas Emissions

GHG-1: Caltrans Standard Specification "Air Quality" requires compliance by the contractor with all applicable laws and regulations related to air quality.

GHG-2: Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of diesel-fueled commercial motor vehicles and equipment with gross weight ratings of greater than 10,000 pounds to no more than 5 minutes.

GHG-3: Caltrans Standard Specification “Emissions Reduction” ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board (CARB).

GHG-4: Use of a Transportation Management Plan (TMP) to minimize vehicle delays and idling emissions. As part of this, construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along the highway during peak travel times.

GHG-5: All areas temporarily disturbed during construction would be revegetated with appropriate native species. Landscaping reduces surface warming and, through photosynthesis, decreases carbon dioxide (CO_2). This replanting would help offset any potential CO_2 emissions increase.

GHG-6: Pedestrian and bicycle access would be maintained on U.S. Highway 101 during project activities.

Hazardous Waste and Material

HW-1: Per Caltrans requirements, the contractor(s) would prepare a project-specific Lead Compliance Plan (California Code of Regulations [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: If treated wood waste (such as removal of signposts or guardrail) is generated during this project, it would be disposed of in accordance with Standard Specification "Treated Wood Waste."

Traffic and Transportation

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

TT-2: The contractor would be required to schedule and conduct work to avoid unnecessary inconvenience to the public and to maintain access to driveways, houses, and buildings within the work zones.

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

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 U.S. Highway 101 throughout the construction period.

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

UE-3: The project is located within a Local Responsibility Area (Rio Dell / Scotia). The contractor would be required to submit a jobsite Fire Prevention Plan, as required by Cal/OSHA, before starting job site activities. In the event of an emergency or wildfire, the contractor would cooperate with fire prevention authorities.

Water Quality and Stormwater Runoff

WQ-1: The project would comply with the Provisions of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Permit (Order 2012-0011-DWQ), as amended by subsequent orders, which became effective July 1, 2013. If the project results in a land disturbance of one acre or more, coverage under the Construction General Permit (Order 2009-0009-DWQ) is also required.

Before any ground-disturbing activities, the contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP) (per the Construction General Permit Order 2009-0009-DWQ) or Water Pollution Control Program (WPCP) (for projects that result in a land disturbance of less than one acre), that includes erosion control measures and construction waste containment measures to protect waters of the State during project construction.

The SWPPP or WPCP would identify the sources of pollutants that may affect the quality of stormwater; include construction site Best Management Practices (BMPs) to control sedimentation, erosion, and potential chemical pollutants; provide for construction materials management; include non-stormwater BMPs; and include routine inspections and a monitoring and reporting plan. All construction site BMPs would follow the latest edition of the *Caltrans Storm Water 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 or WPCP would be continuously updated to adapt to changing site conditions during the construction phase.

Construction may require one or more of the following temporary construction site BMPs:

- Any spills or leaks from construction equipment (e.g., fuel, oil, hydraulic fluid, and grease) would be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities would be removed by dewatering.
- Water generated from the dewatering operations would be discharged on-site for dust control and/or to an infiltration basin, or disposed off-site.

- Temporary sediment control and soil stabilization devices 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 Plan.
- Soil-disturbing work would be limited during the rainy season.

WQ-2: The project would incorporate pollution prevention and design measures consistent with the *2016 Caltrans Storm Water Management Plan*. This plan complies with the requirements of the Caltrans Statewide NPDES Permit (Order 2012-0011-DWQ) as amended by subsequent orders.

The project design may include one or more of the following:

- Vegetated surfaces would feature native plants, and revegetation would use the seed mixture, mulch, tackifier, and fertilizer recommended in the Erosion Control Plan prepared for the project.
- Where possible, stormwater would be directed in such a way as to sheet flow across vegetated slopes, thus providing filtration of any potential pollutants.

Additional Best Management Practices

In addition to the BMPs listed above, the following Additional Best Management Practices (ABMPs) associated with project-specific actions outlined in the *Programmatic Authorization for Caltrans' Routine Maintenance and Repair Activities in Districts 1, 2, and 4* (NMFS 2013) may be prescribed depending on final NMFS consultation, site conditions and time of year.

Project Action–1: Operate construction equipment and vehicles

ABMP-1.1: Equipment would be operated during the least sensitive diurnal, seasonal, and meteorological periods relative to the potential effects on listed species and habitat if feasible.

ABMP-1.2: Equipment will not operate in sensitive areas, such as wetlands and surface waters.

ABMP-1.3: Equipment would be inspected daily for leaks and completely cleaned of any external petroleum products, hydraulic fluid, coolants, and other deleterious materials prior to operating equipment.

ABMP-1.4: A Spill Prevention, Control, and Countermeasures (SPCC) Plan would be developed for each project that requires the operation of construction equipment and vehicles. The SPCC Plan would be kept on-site during construction and the appropriate materials and equipment would also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel would be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill would be timely.

Project Action–2: Use of temporary lighting for night construction activities

ABMP-2.1: Maintenance and construction activities would be avoided at night to the extent practicable.

ABMP-2.2: When night work cannot be avoided, disturbance of listed species would be avoided and minimized by restricting substantial use of temporary lighting to the least sensitive seasonal and meteorological windows.

ABMP-2.3: Lights on work areas would be shielded and focused to minimize lighting of listed-species habitat.

Project Action–3: Maintain and fuel construction equipment and vehicles

ABMP-1.3; 1.4: Please see above and,

ABMP-3.1: Maintenance and fueling of construction equipment and vehicles would occur at least 50 feet (15 meters) from the Ordinary High Water Mark (OHWM) or the edge of sensitive habitats (e.g., wetlands).

Project Action-5: Temporarily or permanently store sediment and debris, and pavement, petroleum products, concrete, and other construction materials

ABMP-1.4: Please see above

Project Action-7: Treat and discharge water conveyed from the construction area

ABMP-7.1: Water pumped from areas isolated from surface water to allow construction to occur in the dry [season] would be discharged to an upland area providing overland flow and infiltration before returning to stream. Upland areas may include sediment basins of sufficient size to allow infiltration rather than overflow or adjacent dry gravel/sand bars if the water is clean and no visible plume of sediment is created downstream of the discharge. Other measures **may be used, such as a Baker Tank or methods described in BMP NS-2.**

ABMP-7.2: A NMFS-approved fish biologist would be on site to observe dewatering activities and to capture/rescue any fish observed in an isolated area during dewatering activities.

Project Action-8: Use of drill rigs and drilling lubricants

ABMP-1.4: Please see above and,

ABMP-8.1: Drilling would be conducted outside of the stream channel or only in dry stream beds, to the extent practicable. If water is present, see ABMP-8.4.

ABMP-8.2: When drilling takes place within the stream channel, including gravel beds and bars, drilling mud would be bentonite; initial drilling through gravel would be accomplished using clean water as a lubricant; after contact with bedrock or consolidated material, drilling mud (i.e., bentonite clay) may be used.

ABMP-8.3: All drilling fluids and materials would be self-contained and removed from the site after use; drilling would be conducted inside a casing so that all spoils are recoverable in a collection structure.

ABMP-8.4: If drilling must occur where water is present, the work area would be isolated, or the flow would be diverted around the work area.

Project Action-10: Remove and disturb upland, riparian, and wetland vegetation

ABMP-1.4: Please see above and,

ABMP-10.1: Trees as identified in any special contract provisions or as directed by the project engineer would be preserved.

ABMP-10.2: Hazard trees greater than 24-inches diameter at breast height (DBH) would be removed only by direction of the project engineer.

ABMP-10.3: Trees would be felled in such a manner as not to injure standing trees and other plants to the extent practicable.

ABMP-10.4: Environmentally Sensitive Areas would be fenced to prevent encroachment of equipment and personnel into wetlands, riparian areas, stream channels and banks, and other sensitive habitats.

ABMP-10.5: Vegetation would be mowed to a height greater than 4 inches.

ABMP-10.6: Soil compaction would be minimized by using equipment that can reach over sensitive areas and minimizes the pressure exerted on the ground.

ABMP-10.7: Where soil compaction is unintended, compacted soils would be loosened after heavy construction activities are complete.

ABMP-10.8: Where vegetation removal is temporary to support construction activities, native species would be re-established that are specific to the project location and that comprise a diverse community of woody and herbaceous plants.

Project Action-11: Grade and establish temporary and permanent staging/storage areas for sediment, debris, and construction materials and equipment

ABMP-1.4; 10.4; 10.7; 10.8: Please see above and,

ABMP-11.1: Storage areas would disturb less than 2.5 acres of vegetated or currently undisturbed area.

ABMP-11.2: Storage areas would not disturb wetlands or other special status plant communities.

ABMP-11.3: For permanent storage areas that have been filled to capacity with sediment and debris, the final configuration would conform to natural contours (elevations, profile, and gradient) of surrounding terrain and native plant species would be established that are specific to the project location and comprise a diverse community of woody and herbaceous plants.

Project Action-14: Operate construction equipment and vehicles in the stream channel

ABMP-14.1; 14.5; and 14.8: With the exception of instances when impacts of dewatering are expected to exceed the impacts of equipment or vehicle operation in the wetted channel, construction equipment and vehicles would not operate in anadromous waters unless the channel is dewatered or otherwise dry. In rare instances when impacts of dewatering are expected to exceed the impacts of equipment or vehicle operation in the wetted channel, relocation and exclusion of listed fish from the area would be implemented prior to operating in the wetted channel.

ABMP-14.2: Existing roadways and stream crossings would be used for temporary access roads whenever reasonable and safe.

ABMP-14.3: The number of access and egress points and total area affected by vehicle operation would be minimized; disturbed areas would be located to reduce damage to existing native aquatic vegetation, substantial large woody debris, and spawning gravel.

ABMP-14.6: Except for streams identified by NMFS, USFWS, and CDFW as not supporting spawning habitat, all in-water activities would be conducted outside the spawning and incubation season for listed fish species, where such species occur, or to periods identified in cooperation with NMFS, USFWS, and CDFW to accommodate site- specific conditions.

Project Action-15: Construct temporary stream crossings

ABMP-10.4; 10.8; 14.1; 14.2; 14.3; 14.5; 14.6; 14.7: Please see above and,

ABMP-15.1: Stream width, depth, velocity, and slope that provide upstream and downstream passage of adult and juvenile fish would be preserved according to current NMFS and CDFW guidelines and criteria, or as developed in cooperation with NMFS and CDFW to accommodate site-specific conditions.

ABMP-15.2: Temporary fills, cofferdams, and diversion cofferdams that are left in stream channels would consist of washed, rounded, spawning-sized gravel between 0.4 to 4 inches in diameter; gravel in contact with flowing water would be left in place, modified (i.e., manually spread out using hand tools if necessary) to ensure adequate fish passage for all life stages, and then allowed to disperse naturally by high winter flows; materials placed above the ordinary high water mark must be clean washed rock or contained to prevent material conveyance to the stream or mixing with clean gravel.

Project Action-28: Capture, handle, exclude, salvage, and relocate listed species

ABMP-28.1: If individuals of listed species may be present and subject to potential injury or mortality from construction activities, a qualified biologist would conduct a preconstruction visual survey (i.e., bank observations).

ABMP-28.2: Caltrans shall retain a qualified biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids, salmonid/habitat relationships and biological monitoring of salmonids. Caltrans shall ensure that all biologists working on a site-specific project would be qualified to conduct fish collections in a manner which minimizes all potential risks to listed salmonids.

ABMP-28.3: When listed species are present and it is determined they could be injured or killed by construction activities, a qualified project biologist would identify appropriate methods for capture, handling, exclusion, and relocation of individuals that could be affected.

ABMP-28.4: Where listed species cannot be captured, handled, excluded, or relocated (e.g., salmonid redd), actions that could injure or kill individual organisms would be avoided or delayed until the species leaves the affected area or the organism reaches a stage that can be captured, handled, excluded, or relocated.

ABMP-28.5: The project biologist would conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities; ensure that sufficient personnel are available for safe and efficient collection of listed species; and ensure that proper training of personnel has been conducted in identification and safe capture and handling of listed species.

ABMP-28.6: Electrofishing may be utilized when other standard fish capture methods are likely to be ineffective or other methods fail to remove all fish from the site; the project biologist must have appropriate training and experience in electrofishing techniques and all electrofishing must be conducted according to the *NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act.* [Available at: http://swr.nmfs.noaa.gov/sr/Electrofishing_Guidelines.pdf] (NMFS 2000).

ABMP-28.7: Individual organisms would be relocated the shortest distance possible to habitat unaffected by construction activities.

ABMP-28.8: Within occupied habitat, capture, handling, exclusion, and relocation activities would be completed no earlier than 48 hours before construction begins to minimize the probability that listed species would recolonize the affected areas.

ABMP-28.9: Within temporarily drained stream channel areas, salvage activities would be initiated before or at the same time as stream area draining and completed within a time frame necessary to avoid injury and mortality of listed species.

ABMP-28.10: For projects that involve in-water activities, the project biologist would continuously monitor in-water activities (e.g., placement of cofferdams, dewatering of isolated areas) for the purpose of removing and relocating any listed species that were not detected or could not be removed and relocated prior to construction.

ABMP-28.11: The project biologist would be present at the work site until all listed species have been removed and relocated.

ABMP-28.12: The project biologist would maintain detailed records of the species, numbers, life stages, and size classes of listed species observed, collected, relocated, injured, and killed; as well as recording the date and time of each activity or observation.

Project Action-29: Implement BMPs

ABMP-29.1: The proposed guidance document (described in Caltrans [2010] Programmatic BA) would be followed to ensure compliance with Project permits and authorization, including implementation of the BMPs.

ABMP-29.2: Before construction activities begin, the project environmental coordinator or biologist would discuss the implementation of the required BMPs with the maintenance crew or construction resident engineer and contractor and identify and document environmentally sensitive areas and potential occurrence of listed species.

ABMP-29.3: Before construction activities begin, the project environmental coordinator or biologist would conduct a worker awareness training session for all construction personnel that describes the listed species and their habitat requirements, the specific measures being taken to protect individuals of listed species in the project area, and the boundaries within which project activities would be restricted.

ABMP-29.4: Caltrans would designate a biological monitor to monitor on-site compliance with all project BMPs and any unanticipated effects on listed species.

ABMP-29.5: Non-compliance with BMPs and unanticipated effects on listed species would be reported to the resident engineer or maintenance supervisor immediately.

ABMP-29.6: When non-compliance is reported, the resident engineer or maintenance supervisor would implement corrective actions immediately to meet all BMPs; where unanticipated effects on listed species cannot be immediately resolved, the resident engineer or maintenance supervisor would stop work that is causing the unanticipated effect until the unanticipated effects are resolved.

1.5 Discussion of the NEPA Categorical Exclusion

This document contains information regarding compliance with the California Environmental Quality Act (CEQA) and other state laws and regulations. Separate environmental documentation supporting a Categorical Exclusion determination will be prepared in accordance with the National Environmental Policy Act. 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 National Marine Fisheries Service and the United States Fish and Wildlife Service—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 Environmental Checklist on the following pages for additional information.

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

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 will 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 CEQA Environmental Checklist are only related to potential impacts pursuant to CEQA. The questions in the CEQA Environmental 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 standardized measures applied to all or most Caltrans projects (such as Best Management Practices [BMPs] and measures included in the Standard Plans and Specifications or as Standard Special Provisions [Section 1.4]), 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

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 California Code of Regulations [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 the 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 project, 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 an 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 will consider impacts to be significant, and below which it will consider impacts to be less than significant. Given the size of California and it's 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 in the project area based on their location and the effect of the potential impact on the resource as a whole. 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. CEQA allows for a "Mitigated Negative Declaration" (MND) 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 will achieve, and (3) identify the type(s) of potential action(s) that can feasibly achieve that performance standard and that will be considered, analyzed, and potentially incorporated in the mitigation measure.

Compliance with a regulatory permit or other similar processes 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 Best Management Practices. These measures can also be identified after the Initial Study/Negative Declaration is approved.

CEQA documents must consider direct and indirect impacts of a project (California Public Resources Code [PRC] § 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.

No-Build Alternative

For each of the following CEQA Environmental Checklist questions, the No-Build Alternative has been determined to have "*No Impact*". Under the No-Build Alternative, no alterations to the existing conditions would occur and no proposed improvements would be implemented. The No-Build Alternative will not be discussed further in this document

2.1 Aesthetics

Except as provided in the Public Resources Code Section 21099:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: a) Have a substantial adverse effect on a scenic vista?			✓	
Would the project: b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			✓	
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?				✓
Would the project: d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

Regulatory Setting

The California Environmental Quality Act (CEQA) establishes it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (California Public Resources Code [PRC] Section 21001[b]).

Environmental Setting

The proposed project is located at the Eel River Bridge on U.S. Highway 101 (U.S. 101), just north of the city of Rio Dell in Humboldt County, California, and between the cities of Fortuna and Scotia. The project is located in the Coast Range of Northern California. The landscape is characterized by mountainous terrain with mixed forest. Land use within the project corridor is primarily rural residential, commercial, and timberlands. Humboldt Redwoods State Park is approximately 20 miles south of the proposed project location.

U.S. 101 within the project limits is eligible for designation as a State Scenic Highway. The Eel River at this location has National and California Wild and Scenic Rivers status as a recreational corridor. The river is considered a scenic resource. There are views of the river and the riparian corridor from both the east and west sides of the northbound and southbound lanes of the Eel River bridges. Highway users, those who have views from the project, primarily include locals, tourists, and cyclists. Highway neighbors, those who have views towards the project, include recreationists on the river and local communities along the highway and the banks of the river. Caltrans documented potential visual impacts caused by the project in the *Visual Impact Assessment* for the project on September 12, 2022 (Caltrans 2022).

Discussion of CEQA Environmental Checklist Question 2.1—Aesthetics

a) Would the project have a substantial adverse effect on a scenic vista?

The removal of the existing through-truss bridge from the northbound Eel River Bridge and replacement with a cast-in-place (CIP), prestressed box girder bridge is anticipated to improve certain aspects of visual quality by making the structure visually cohesive and enhancing views of the river corridor. The removal of this structure would objectively improve views and would make the bridge less visually intrusive against the landscape. The proposed retaining wall would not be highly visible from the roadway since it would below highway grade. Residences along Eeloa Avenue would have direct views of the retaining wall and construction activities, although mature trees would be expected to screen the bulk of construction activities from the houses. Any trees to be removed for construction would be replanted, helping screen views of the wall from Eeloa Avenue. The retaining wall would not be visible from the river.

The addition of the Type 842 concrete barrier rail along the eastern portion of the northbound bridge would impact views of the river from the bridge. River views would not likely be impacted for pedestrians or cyclists but could be reduced for drivers and passengers in lower profile cars. Because the riverine landscape is so expansive (i.e., expanding to the horizon), views from the bridge would not be completely impacted.

Given this, Caltrans has determined the project would have a "*Less Than Significant Impact*" on a scenic vista.

b) Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway?

Though constructed access roads and staging areas would temporarily impact views from the river during construction, upon completion of the project these areas would gradually fill in with vegetation. Given this, a determination was made that the project would have a "*Less Than Significant Impact*" on scenic resources.

c) Would the project, 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.)

Due to the project area's proximity to the commercial center of Rio Dell and the presence of a more urbanized landscape and highway features in the project corridor, a decrease in visual dominance and scale of the bridge would help to improve views to and from the bridge. The visual character of the proposed project would be compatible with the existing visual character of the corridor. The proposed replacement of the through-truss bridge with a cast-in-place (CIP) box girder bridge at Spans 1 through 4 would be compatible with existing structures within the project corridor, as well as the existing condition of the remaining northbound and southbound bridge construction.

Given this, a determination was made that the project would have "*No Impact*" on the visual character or quality of public views of the site and its surroundings.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The removal of the existing through-truss bridge would not result in a new source of glare or light. The removal of the truss would result in reduced glare reflection from vehicle running lights and headlights. Additionally, the proposed Type 842 concrete barrier rail along the eastern portion of the northbound bridge would reduce the visibility of vehicle lights from the vantage of the southbound bridge or adjacent residential areas.

Given this, Caltrans has determined the project would have "*No Impact*" on day or nighttime views in the area.

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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 (CAL FIRE) regarding the state's inventory of forest land, including the Forest and Range Assessment Project; the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB).

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
Would the project: b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
Would the project: c) Conflict with existing zoning for, or cause rezoning of forest land (as defined by 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))?				✓
Would the project: d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Impact" determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to Agriculture and Forest Resources are not anticipated due to the lack of agricultural land within the project area and because the scope of work would not conflict with the zoning of or result in the loss or conversion of forest land.

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

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the project's *Air Quality Analysis* dated June 7, 2021, (Caltrans 2021). Humboldt County is classified as an "attainment" area for all current National Ambient Air Quality Standards. Therefore, transportation conformity requirements do not apply. The analysis concluded that the proposed project would not result in changes to the traffic volume, fleet mix, vehicle miles traveled (VMT), speed, location of existing facility or any other factor that would cause an increase in emissions relative to the No-Build Alternative; therefore, this project would not cause an increase in operational emissions. There would be temporary construction emissions associated with the project. Please see Section 2.8–Greenhouse Gas Emissions for more information.

2.4 Biological Resources

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?			✓	
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?			✓	
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?		✓		
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?			✓	

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
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?				✓

Regulatory Setting

Within this section of the document (2.4. Biological Resources), the topics are separated into Sensitive Natural Communities, Wetlands and Other Waters, Plant Species, Animal Species, Threatened and Endangered Species, and Invasive Species. Plant and animal species listed as "threatened" or "endangered" are covered within the Threatened and Endangered sections. Other special status plant and animal species, including USFWS and NMFS candidate species, CDFW fully protected species and species of special concern, and California Native Plant Society (CNPS) rare and endangered plants, are covered in the respective Plant and Animal sections.

Sensitive Natural Communities

CDFW maintains a list of sensitive natural communities (SNCs). SNCs 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 or their habitat.

Wetlands and Other Waters

"Waters" of the United States (including wetlands) and State are protected under several laws and regulations. The primary laws and regulations governing wetlands and other waters include:

- Federal: Clean Water Act (CWA), 33 USC 1344
- Federal: Executive Order for the Protection of Wetlands (Executive Order [EO] 11990)
- State: California Fish and Game Code (CFGC) Sections 1600–1607
- State: Porter-Cologne Water Quality Control Act Section 3000 et seq.

Plant Species

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special status plant species. The primary laws governing plant species include:

- Federal Endangered Species Act (FESA), United States Code 16 (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402
- California Endangered Species Act (CESA), California Fish and Game Code Sections 2050, et seq.
- Native Plant Protection Act, California Fish and Game Code Sections 1900–1913
- National Environmental Policy Act (NEPA), 40 CFR Sections 1500 through 1508
- California Environmental Quality Act (CEQA), California Public Resources Code Sections 21000–21177

Animal Species

The USFWS, NMFS, and CDFW have regulatory responsibility for the protection of special status animal species. The primary laws governing animal species include:

- NEPA, 40 CFR Sections 1500 through 1508
- CEQA, California Public Resources Code Sections 21000–21177
- Migratory Bird Treaty Act, 16 United States Code (USC) Sections 703–712
- Fish and Wildlife Coordination Act, 16 USC Section 661

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

Threatened and Endangered Species

The primary laws governing threatened and endangered species include:

- FESA, United States Code 16 (USC) Section 1531, et seq.
  See also 50 CFR Part 402
- CESA, California Fish and Game Code Sections 2050, et seq.
- CESA, California Fish and Game Code Section 2080
- CEQA, California Public Resources Code, Sections 21000–21177
- Magnuson-Stevens Fishery Conservation and Management Act, 16 USC Section 1801, as amended

Invasive Species

The primary laws governing invasive species are Executive Order (EO) 13112 and NEPA.

Environmental Setting

A Natural Environment Study (NES) (Caltrans 2022a) was prepared for the project. Caltrans coordinated with fisheries biologists and water quality specialists, as well as agency personnel from USFWS, NMFS, CDFW, NCRWQCB, USACE, and National Park Service (NPS). See Chapter 3 for a summary of these coordination efforts and professional contacts.

The project area is in the lower mainstem Eel River watershed in the Northern California Coast Ranges Ecological Province, characterized by steep mountainous terrain. The proposed project includes the northbound U.S. Highway 101 Eel River Bridge located within the city limits of Rio Dell, Humboldt County, in United States Geological Survey 7.5-minute Hydesville Quadrangle in Township 2 North, Range 1 E, Section 31 Humboldt Base and Meridian.

Climate in the area is a Mediterranean climate with warm, dry summers and mild, wet winters. The Eel River is the third largest river in California and drains 3,684 square miles of Humboldt, Mendocino and Trinity counties. The reach of Eel River within the project area is designated a Wild and Scenic River with recreational status.

The Eel River is also listed on the National Rivers Inventory, a list of potential wild, scenic, and recreational river areas within the United States. The river is listed for two outstandingly remarkable values: scenery and fish (CDFW 2010).

The Environmental Study Limits (ESL) and Biological Study Area (BSA) were established to evaluate the potential presence of Natural Communities of Special Concern (NCSC) and special status plants and animals. The ESL, shown in Figure 4, includes the anticipated staging and work area. The BSA contains the ESL and any additional areas that could be affected by the noise of construction, which includes a 0.25-mile buffer around the construction area for airborne noise and the extent of potential underwater noise transmittal upstream and downstream from the bridges (Figure 4).

The ESL, which includes the north- and southbound U.S. 101 bridges, approaches, and the area between the bridges, comprises 47.22 acres. The ESL is located within and near the city limits of Rio Dell in Humboldt County, California.

The topography of the ESL consists of a relatively level floodplain and steep banks of the Eel River and a terrace above the banks of the Eel River. The ESL generally runs parallel to U.S. 101 and the Eel River passes through the center of the ESL. Elevations range from 40 feet (12 meters) above mean sea level in the center of the channel to 130 feet (40 meters) above mean sea level along U.S. 101.

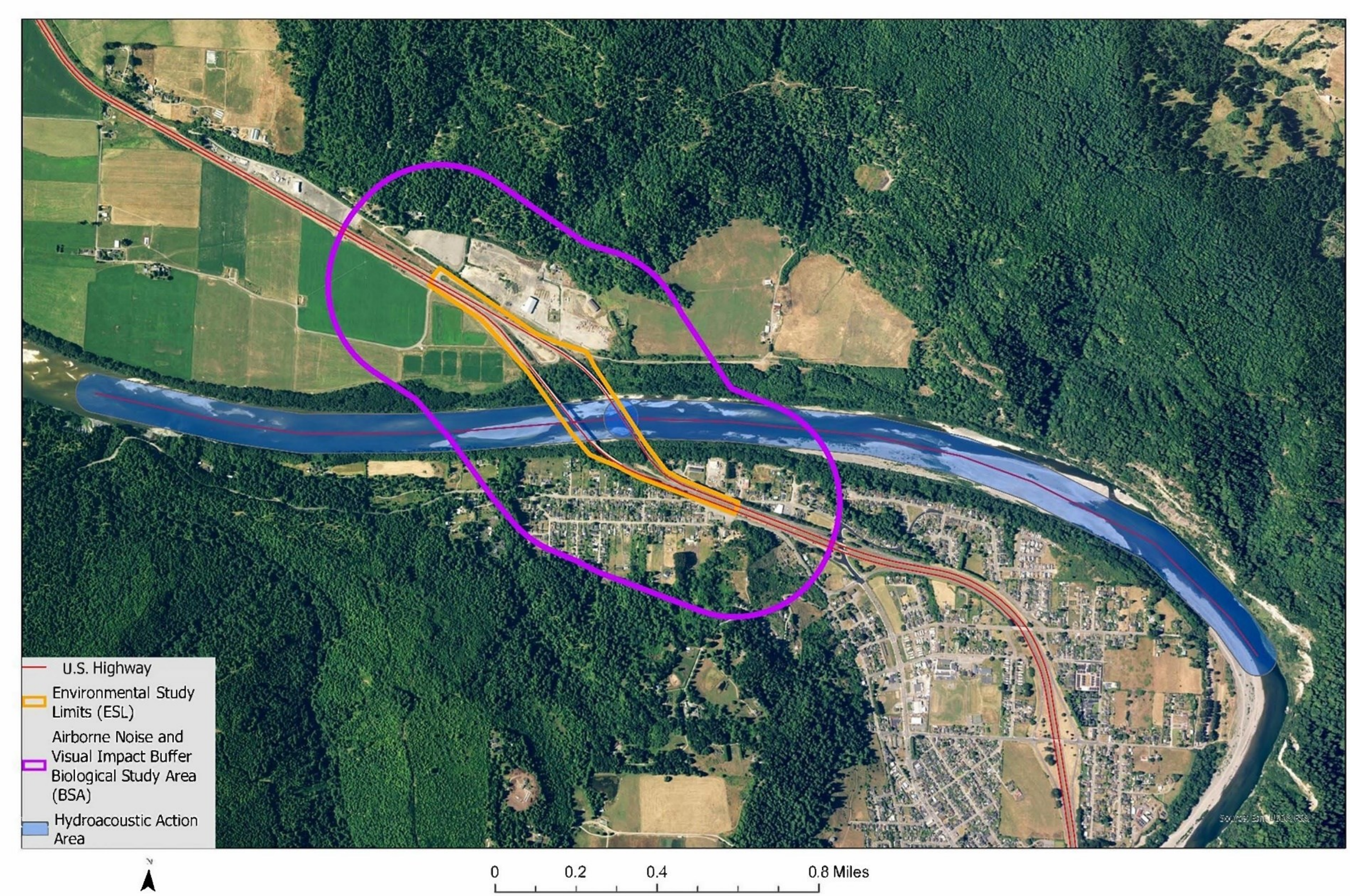

Figure 4. Environmental Study Limits and Biological Study Area

Sensitive Natural Communities

Sensitive natural communities are habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status. The CNDDB provides a list of rare natural communities throughout the state (Appendix C). USACE, CDFW, and the RWQCB consider certain habitats, such as wetlands and riparian communities, important for water quality and wildlife.

The BSA supports several natural communities of special concern, including Sensitive Natural Communities (SNCs), wetlands and other waters, riparian habitat, critical habitat, and Essential Fish Habitat. Wetlands and non-wetland Waters of the United States are also considered sensitive by both federal (USACE) and state agencies (California Coastal Commission [CCC], CDFW, and the State Regional Water Quality Control Board), County of Humboldt, and the City of Rio Dell. Local and state agencies consider SNCs to be those vegetation types/natural communities with state rankings of S1–S3.

Black Cottonwood (Populus trichocarpa) Forest and Woodland Alliance

This alliance occurs in the Eel River riparian corridor, on both the north and south banks of the Eel River. The community is dominated by black cottonwood, while some stands are co-dominant with red alder. The dense understory includes Sitka willow (*Salix sitchensis*), shining willow (*Salix lasiandra ssp. lasiandra*), arroyo willow, California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), and red elderberry (*Sambucus racemosa*). The herbaceous layer is sparse and includes scouring-rush horsetail (*Equisetum hyemale*) and stinging nettle (*Urtica dioica*).

Shining Willow Groves (Salix lucida ssp. *lasiandra) Forest and Woodland Alliance*

This alliance occurs in one location within the ESL on the south bank of the Eel River. This stand includes shining willow at 65 percent relative cover and Sitka willow at 35 percent relative cover. The shrub layer is dense and includes dogwood (*Cornus sericea ssp. sericea*) and California blackberry. The herbaceous layer is sparse and includes scouring-rush horsetail and grasses, including Howell's blue grass (*Poa howellii*).

Sitka Willow Thickets (Salix sitchensis) Shrubland Alliance

This alliance is most common adjacent to Eel River's ordinary high water mark, although it also occurs in other locations within the riparian corridor. Sitka willow has at least a 30 percent relative cover, with shining willow and arroyo willow common as well. Some Sitka willow stands include scattered emergent black cottonwood. California blackberry and Himalayan blackberry dominate the understory. The herbaceous layer is sparse and is dominated by horsetail. While the *Manual of California Vegetation* (Sawyer et al., 2008) lists Sitka willow as a shrub type, these stands were tree types within the ESL.

Red Alder Forest (Alnus rubra) Forest Alliance

This alliance is the most common forest and woodland community within the ESL, encompassing 5.77 acres of the ESL. It occurs on the north and south banks of the Eel River (Figures 5 and 6).

Berry Brambles Gaultheria shallon – Rubus (ursinus) Shrubland Alliance

This alliance is present within the ESL under and adjacent to Abutment 1 and bridge Spans 1 and 2. The alliance comprises 0.67 acre within the ESL.

Arroyo Willow Thickets (Salix lasiolepis) Shrubland Alliance–(Salix lasiolepis) Association

This association occurs in the riparian corridor on either side of the Eel River. Arroyo willow is dominant in this community with at least 50 percent relative cover, with scattered Sitka willows also present in some stands. California blackberry and thimbleberry (*Rubus parviflorus*) are present to a lesser extent. Scattered horsetail (*Equisetum* spp.) is present in the herbaceous layer in some stands.

Hardstem Bulrush Marshes (Schoenoplectus acutus) Herbaceous Alliance

This alliance occurs in one location within the ESL on the north bank of the Eel River. The wide channel of the Eel River is largely unvegetated and contains minimal water during the late summer months; however, deep pooled areas that support herbaceous vegetation are present just below the ordinary high water mark on the north bank of the river. This community occurs along and within one of the deep pools. Hardstem bulrush is dominant with at least 50 percent relative cover. Other common species include spike rush *(Eleocharis macrostachya*), water plantain (*Alisma lanceolatum*), and common three square (*Schoenoplectus pungens*).

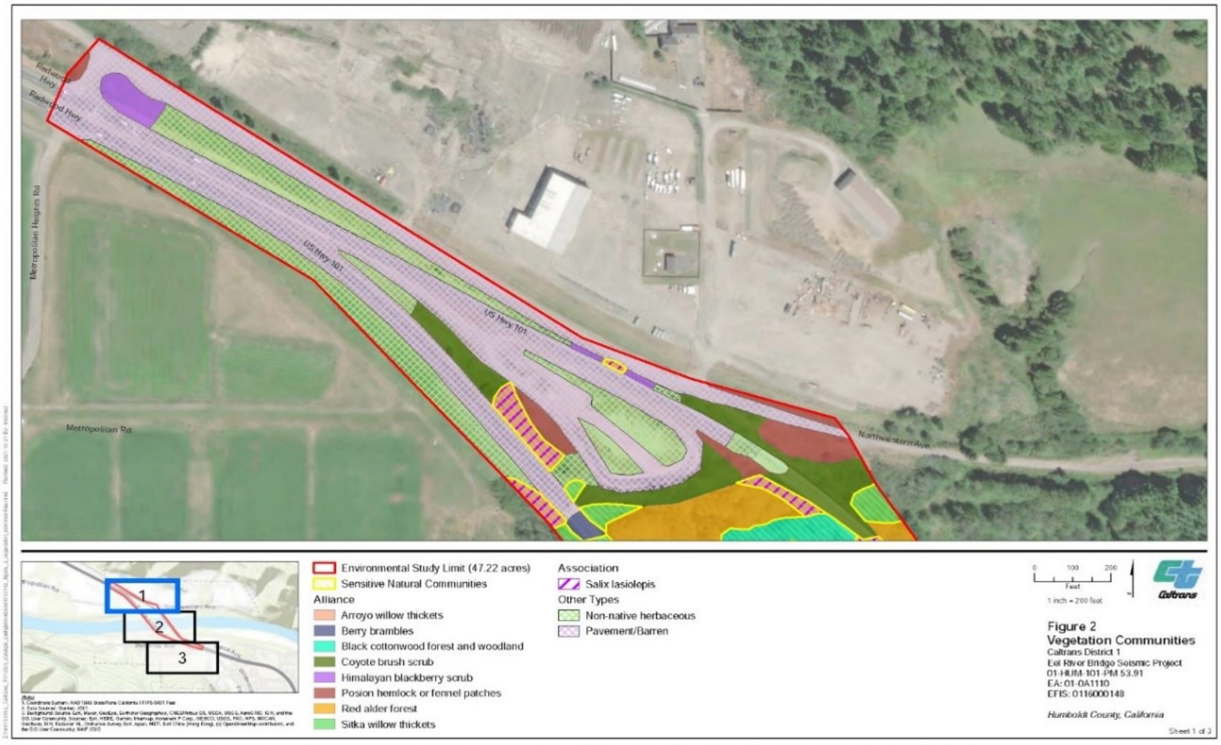

Figure 5. Vegetation Communities within the ESL (#1 of 3)

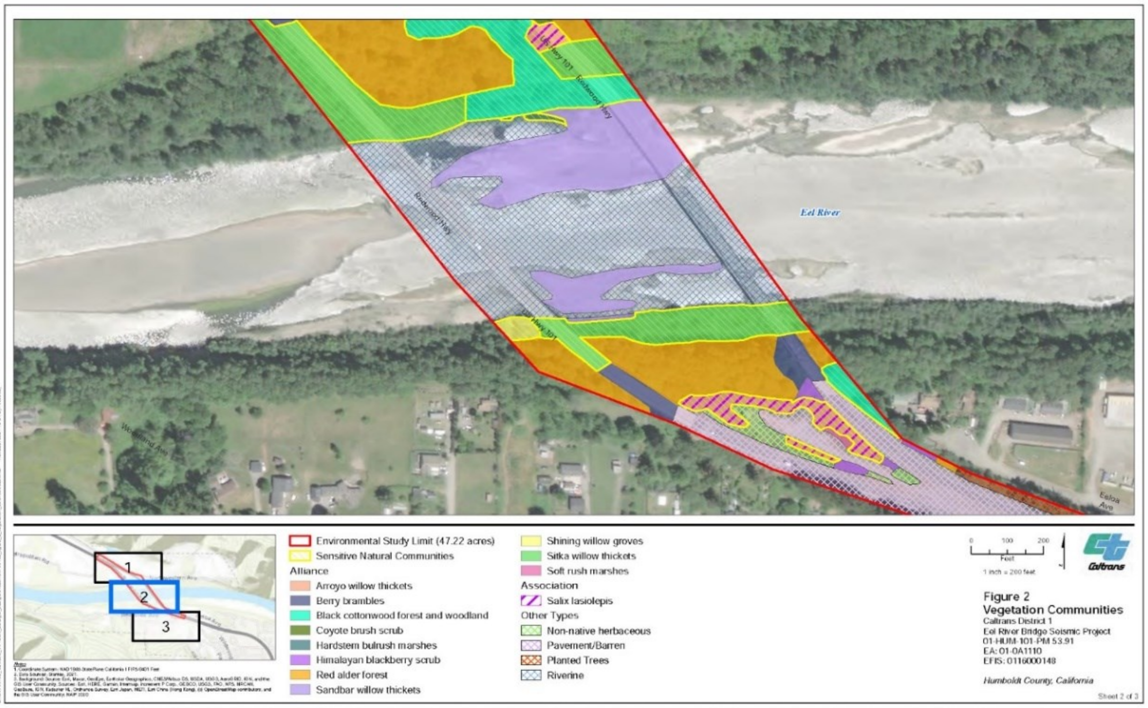

Figure 6. Vegetation Communities within the ESL (#2 of 3)

Figure 7. Vegetation Communities within the ESL (#3 of 3)

Wetlands and Other Waters

Aquatic resources within the Environmental Study Limits (ESL) include wetlands and other waters (Figures 8 through 12). Wetlands include palustrine scrub-shrub (PSS). Other water features within the ESL include ephemeral streams, intermittent streams, and perennial streams. Aquatic resources delineated within the ESL encompass a total of 11.369 acres (2,316 linear feet) and include wetlands and other waters that are potentially subject to USACE, CDFW, and NCRWQCB jurisdiction.

A summary of the delineated features is presented in Table 3 and a detailed list of all aquatic resources within the ESL is provided in Table 4. Routine wetland determination data forms and OHWM data forms are presented in Appendix D. All aquatic resources, regardless of potential jurisdiction by various federal or state agencies, are presented in this section and potential jurisdictional status is subject to verification by applicable agencies.

Palustrine Scrub-Shrub Wetlands

Palustrine scrub-shrub (PSS) wetlands include wetlands that have 30 percent areal cover by woody plants that are less than 20 feet (6 meters) tall (e.g., shrubs). This includes both young trees, true shrubs, and woody plants that are stunted in growth. There are two PSS wetlands within the ESL (Figures 11 and 12).

One feature, Wetland [W]1, occurs where drainage from the highway median collects and supports dominant hydrophytic vegetation, including arroyo willow and common bog rush (*Juncus effusus*) (Figures 11 and 12).

The second feature (W2) occurs at the confluence of a small stream with the Eel River where willow saplings occurred with herbaceous species, including toad rush (*Juncus bufonius*), willow dock (*Rumex salicifolius*), and tall flatsedge (*Cyperus eragrostis*) (Figure 11).

Ephemeral Streams

Ephemeral streams (R6) include drainages that exhibit an OHWM and convey water during and directly after precipitation events. These streams are usually located above the groundwater reservoir and lack a riparian corridor. There are two ephemeral streams within the ESL, Other Water [OW] 1a and 4, both of which drain the highway median (Figure 11). These features appear to be excavated ditches with their OHWM indicated by a decrease in herbaceous vegetation cover and a break in slope. The substrate in these features was soil, similar to the surrounding uplands. The OHWM width of both ephemeral streams was 3 feet.

Intermittent Streams

Intermittent streams (R4SB) include natural drainages that exhibit an OHWM and convey water seasonally. Intermittent streams are distinguished from ephemeral streams because they contain a groundwater component to their flow. They will often support hydrophytic plant species along the edges of the OHWM or within a riparian zone. There is one intermittent stream within the ESL, OW1b through 1e, (Figure 11). The intermittent stream receives outflow from a wetland and conveys it to the Eel River. The stream width and substrate are variable. Widths ranged from 3 to 6 feet and the dominant substrate consisted of cobble, compacted soil, or gravel and sand. The stream displayed a strong break in slope, was devoid of vegetation, and had distinct change in substrate from the surrounding uplands.

Perennial Streams

Perennial streams are like intermittent streams because they include a groundwater component as part of their flow. However, perennial streams have a year-round flow of water. Typically, plants that require or tolerate more moisture are present in the riparian corridor along perennial streams, such as rushes, sedges, willows, and cottonwoods. Two perennial streams are present within the ESL (Figures 10 and 11).

- ***Unknown Consolidated Bottom***

  The unknown perennial unconsolidated bottom stream (R5UB) was present as a small perennial stream, which conveys groundwater seepage from outside the ESL to the Eel River (OW2a-b, Figure 11). The stream exhibited strong OHWM indicators including a steep break in bank slope, change in sediment type from a cobble-dominated channel bottom to a sandy loam soil, and lack of vegetation within the channel to dense vegetative cover above the banks.

- ***Upper-Perennial Unconsolidated Bottom Stream***

  The upper perennial unconsolidated bottom stream (R3UB) was present as the Eel River within the ESL (Figures 10 and 11). The Eel River is a large perennial stream that flows to the Pacific Ocean approximately 16 river miles downstream of the ESL. The stream consisted of an unvegetated low flow channel and a variably vegetated active channel. The dominant stream substrate was cobble and gravel. Portions of the active channel were vegetated with sparse willow shrubs and herbaceous vegetation.

In another area along the north bank, a pool isolated from the low flow channel supported dense herbaceous vegetation. Soils in this area were loamy fine sand deposits and silty soil over cobble and lacked indicators of hydric soils. This portion of the active channel was included as perennial stream due to the absence of hydric soil indicators.

Table 3. Potential Jurisdictional Wetlands, Waters of the U.S., and Aquatic Habitats Identified within the ESL

Feature Type and Name	Average Width of Linear Feature (feet)	USACE and RWQCB Jurisdiction (acres)	USACE and RWQCB Jurisdiction (linear feet)	CDFW Jurisdiction (feet)	Cowardin[a] Type
Palustrine Scrub-Shrub	3	0.158	316	316	PSS
Ephemeral Stream (R6)	3	0.044	635	635	R6
Intermittent Stream (R4SB)	4.5	0.037	383	383	RFSB
Unknown Perennial Unconsolidated Bottom (R5UB)	3	0.016	193	193	R5UB
Upper Perennial Unconsolidated Bottom Stream (R3UB)	185	11.114	789	789	R3UB
Total	**—**	**11.369**	**2,316**	**2,316**	**—**

[a]Cowardin classification codes (Cowardin et al., 1979).

Table 4. Detailed List of Aquatic Resources within the Environmental Study Limits

Cowardin[1]	Name	HGM class	Isolated	Area (Acres)	Length (feet)	Width (feet)	Latitude	Longitude
Wetlands								
PSS	W1	Mineral soil flat	No	0.119	211	~20	40.508045	-124.118508
PSS	W2	Riverine	No	0.039	105	~27	40.508939	-124.121846
			Total Wetlands	**0.158**	**316**			
Other Waters								
R6	OW1a	Riverine	No	0.007	105	3	40.507780	-124.117967
R4SB	OW1b	Riverine	No	0.003	36	4	40.508296	-124.119066
R4SB	OW1c	Riverine	No	0.012	89	6	40.508461	-124.119128
R4SB	OW1d	Riverine	No	0.013	183	3	40.508651	-124.119389
R4SB	OW1e	Riverine	No	0.009	75	5	40.508968	-124.119411
R5UB	OW2a	Riverine	No	0.011	117	4	40.508641	-124.121513
R5UB	OW2b	Riverine	No	0.005	76	3	40.508858	-124.121704
R3UB	OW3	Riverine	No	11.114	789	631	40.509738	-124.121273
R6	OW4	Riverine	Yes	0.037	530	3	40.512681	-124.125552
			Total Other Waters	**11.211**	**2,000**			
			Total Aquatic Resources	**11.369**	**2,316**			

[1]Cowardin, L. M., Carter, V., Golet, F., LaRoe, E. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Department of the Interior. Fish and Wildlife Service.

W: Wetland

OW: Other Water

PSS: Palustrine Scrub-Shrub

R6: Ephemeral Stream

R4SB: Intermittent Stream

R5UB: Unknown Perennial Unconsolidated Bottom Stream

R3UB: Upper Perennial Unconsolidated Bottom Stream

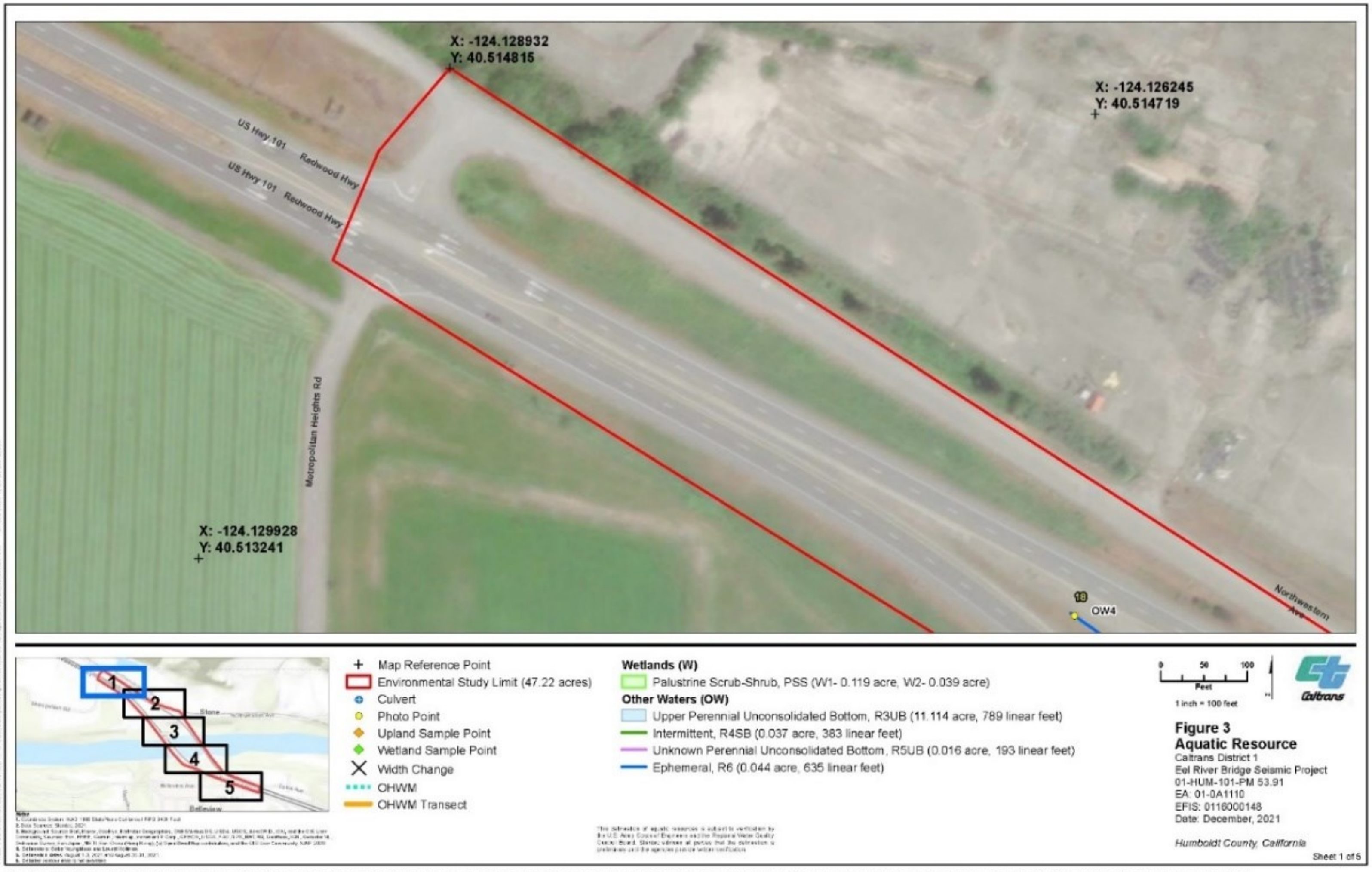

Figure 8. Mapped Aquatic Resources within ESL (#1 of 5)

Figure 9. Mapped Aquatic Resources within ESL (#2 of 5)

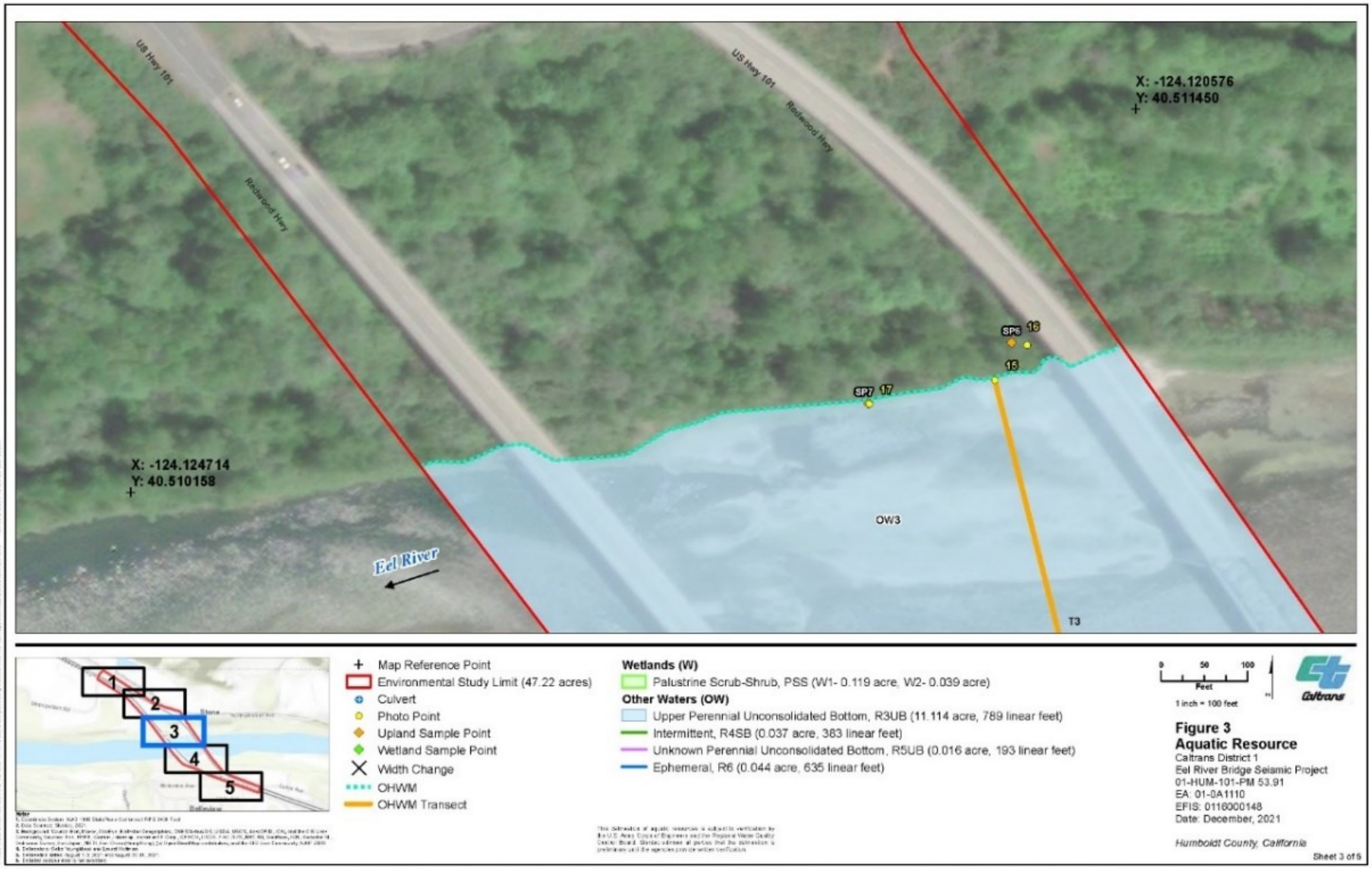

Figure 10. Mapped Aquatic Resources within ESL (#3 of 5)

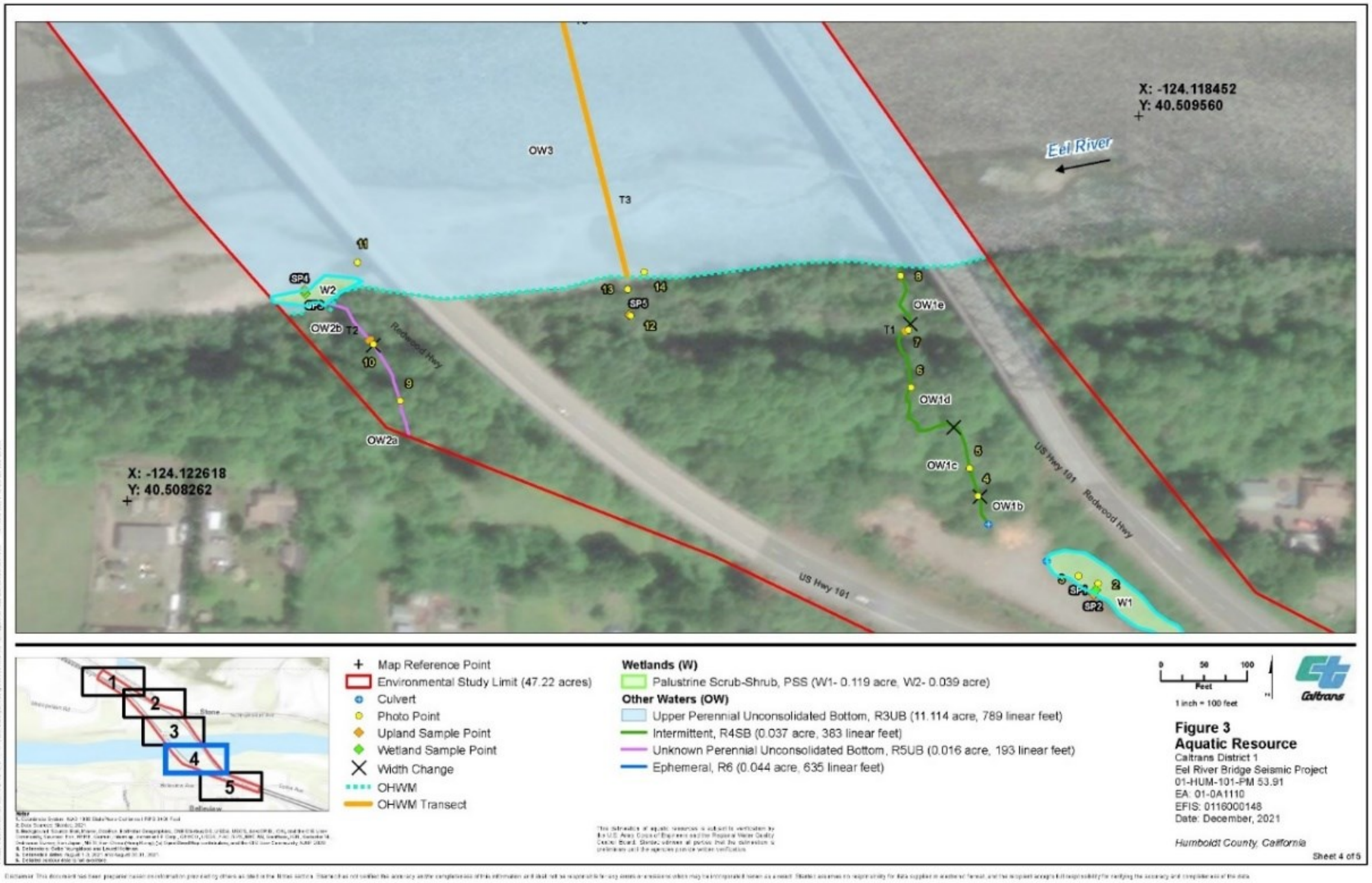

Figure 11. Mapped Aquatic Resources within ESL (#4 of 5)

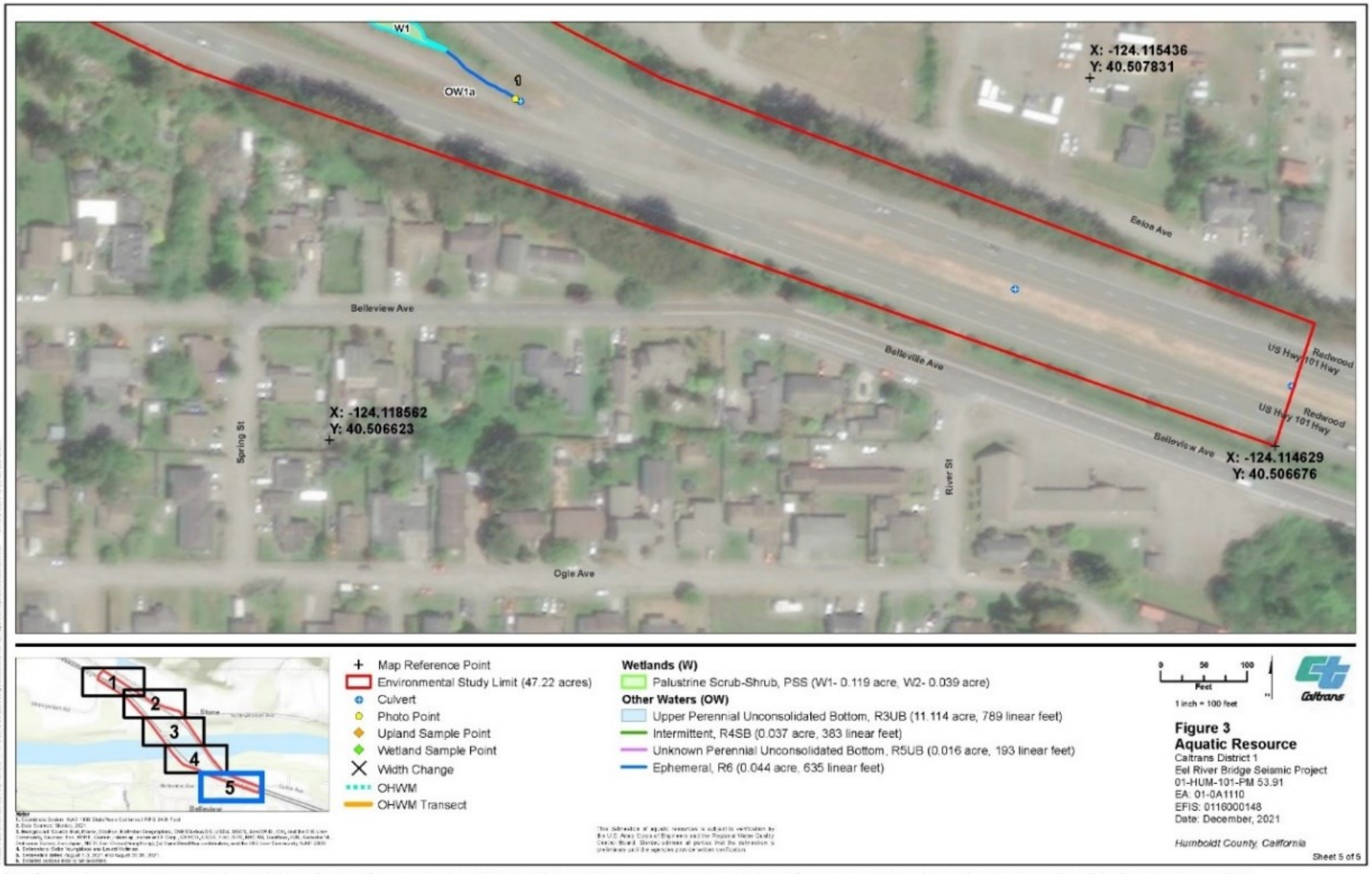

Figure 12. Mapped Aquatic Resources within ESL (#5 of 5)

PLANT SPECIES

Plants 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 plants or animals occurring on-site. The CNPS inventory and CNDDB show several rare plants in the project region (Appendix C). Floristic surveys did not detect special status plant species within the ESL (Caltrans 2022a).

Based on the queries made to USFWS and CDFW (CNDDB) databases and the CNPS rare plant inventory, 17 out of the 58 special status plant species identified in the databases could potentially occur or would have suitable habitat within the Biological Study Area (BSA) (Table 5).

Table 5. Special Status Plants and Critical Habitat and Sensitive Natural Communities Potentially Occurring or Known to Occur within the Project Area

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
VASCULAR PLANTS					
American glehnia	*Glehnia littoralis* ssp. *leiocarpa*	–/–/4.2	Coastal dunes. Elevation: 0-65 feet. Bloom: May-August	Absent.	Coastal dunes are not present. Suitable habitat is not present, and the species was not detected during the survey.
Baker's navarretia	*Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Vernal pools and swales; adobe or alkaline soils. 9-5512 feet (3-1680 meters)	Absent	Coastal dune and scrub habitat is not present. No CNDDB occurrences are within 5 miles of the ESL. This species was not detected during botanical surveys.
Beach layia	*Layia carnosa*	FT/SE/1B.1	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes in coastal dunes and scrub. 0-99 feet (0-30 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.
Bristle-stalked sedge	*Carex leptalea*	–/–/2B.2	Bogs and fens, meadows and seeps, marshes, and swamps. Mostly known from bogs and wet meadows. 9-4577 feet (3-1395 meters)	**Habitat Present**	Marshes provide potential habitat for the species. This species was not present during botanical surveys.

Common Name	***Scientific Name***	**Status[1] Federal/ State/ CRPR**	**Habitat Elevational Range (feet)**	**Habitat Present/Absent Critical Habitat**	**Rationale**
California pinefoot	*Pityopus californicus*	–/–/4.2	Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest, upper montane coniferous forest. Elevation: 45-7,300 feet. Bloom: (March-April) May- August	Absent	Woodland and coniferous forest habitat is not present and suitable habitat is not present. This species was not present during botanical surveys.
Cascade downingia	*Downingia williamettensis*	–/–/2B.2	Cismontane woodland, valley and foothill grasslands, vernal pools. Lake margins. 49-3,642 feet (15-1110 meters)	Absent	Lake margin and grassland habitat is not present. This species was not present during botanical surveys.
Coast checkerbloom	*Sidalcea oregana* ssp. *eximia*	–/–/1B.2	Meadows and seeps, North Coast coniferous forest, lower montane coniferous forest. Near meadows, in gravelly soil. 16–5,922 feet (5–1,805 meters)	Absent	Coniferous forest and meadow habitats are not present. This species was not present during botanical surveys.
Coast fawn lily	*Erythronium revolutum*	–/–/2B.2	Bogs and fens, broad-leafed upland forest, North Coast coniferous forest. Mesic sites; streambanks. Below 5,069 feet (1,600 meters).	**Habitat Present**	Marshes provide marginal habitat for the species. This species was not present during botanical surveys.
Coastal marsh milk-vetch	*Astragalus pycnostachyus* var. *pycnostachyus*	–/–/1B.2	Coastal dunes, marshes and swamps, coastal scrub. Mesic sites in dunes or along streams or coastal salt marshes. 0-509 feet (0-155 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.
Dark-eyed gilia	*Gilia millefoliata*	–/–/1B.2	Coastal dunes. 3-196 feet (1-60 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Dwarf alkali grass	*Puccinellia pumila*	–/–/2B.2	Mineral spring meadows and coastal salt marshes. 3-33 feet (1-10 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.
Giant fawn lily	*Erythronium oregonum*	–/–/2B.2	Cismontane woodland, meadows, and seeps. Openings, sometimes on serpentine; rocky sites. 328–4,709 feet (100–1,435 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.
Harlequin lotus	*Hosackia gracilis*	–/–/4.2	Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland. Elevation: 0-2,295 feet. Bloom: March-July.	**Habitat Present**	Marsh habitat provides potential habitat for the species. No CNDDB occurrences are within 5 miles of the ESL. This species was not present during botanical surveys.
Heart-leaved twayblade	*Listera cordata*	–/–/4.2	Bogs and fens, lower montane coniferous forest, North Coast coniferous forest. Elevation: 15-4,495 feet Bloom: February-July	Absent	Coniferous forest habitat is not present. Suitable habitat is not present. This species was not present during botanical surveys.
Hitchcock's blue-eyed grass	*Sisyrinchium hitchcockii*	–/–/1B.1	Cismontane woodland, valley, and foothill grassland. Openings in woodland or in grassland. In California, 656-1,001 feet (200-305 meters)	**Habitat Present**	Suitable habitat may be present within the ESL. However, the nearest detection of this species is 12 miles to the southwest. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Hoary gooseberry	*Ribes roezlii* var. *amictum*	–/–/4.3	Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest. Elevation: 390-7,545 feet Bloom: March-April	Absent	Upland forest and coniferous forest habitat are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Humboldt County fuchsia	*Epilobium septentrionale*	–/–/4.3	Broadleafed upland forest, North Coast coniferous forest. Elevation: 145-5,905 feet Bloom: July-September	Absent	Coniferous forest and upland forest habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Howell's montia	*Montia howellii*	–/–/2B.2	Meadows and seeps, North Coast coniferous forest, vernal pools. Vernally wet sites; often on compacted soil and disturbed areas. 33–3,987 feet (10–1,215 meters)	Absent	Meadow and coniferous forest habitat are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Humboldt Bay owl's-clover	*Castilleja ambigua* var. *humboldtiensis*	–/–/1B.2	Marshes and swamps. In coastal saltmarsh with *Spartina, Distichlis, Salicornia, Jaumea.* 0-65 feet (0-20 meters.)	Absent	Salt marshes are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Johnny-nip	*Castilleja ambigua* var. *ambigua*	–/–/4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation: 0-1,425 feet Bloom: March-August	**Habitat Present**	Marshes provide marginal habitat for the species. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Kellogg's lily	*Lilium kelloggii*	–/–/4.3	Lower montane coniferous forest, North Coast coniferous forest. Elevation: 5-4,265 feet Bloom: May-August	Absent	Coniferous habitat is not present. Suitable habitat is not present. This species was not present during botanical surveys.
Kneeland Prairie pennycress	*Noccaea fendleri* ssp. *California*	FE/–/1B.1	Coastal prairie. Serpentine rock outcrops. 2,493-2,724 feet (760-830 meters)	Absent	Coastal prairie habitat is not present. No CNDDB occurrences are within 5 miles of the ESL. Suitable habitat is not present. This species was not present during botanical surveys.
Leafy-stemmed mitrewort	*Mitellastra caulescens*	–/–/4.2	Broadleafed upland forest, lower montane coniferous forest, meadows and seeps, North Coast coniferous forest. Elevation: 15-5,575 feet Bloom: (March) April-October	Absent	Upland and coniferous forests are not present. No CNDDB occurrences are within 5 miles of the ESL. Suitable habitat is not present. This species was not present during botanical surveys.
Lyngbye's sedge	*Carex lyngbyei*	–/–/2B.2	Marshes and swamps (brackish or freshwater). 0-657 feet (0-200 meters)	**Habitat Present**	Suitable habitat may be present within the ESL. However, this species was not present during botanical surveys.
Maple-leaved checkerbloom	*Sidalcea malachroides*	–/–/4.2	Broadleafed upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, riparian woodland. Elevation: 0-2,395 feet Bloom: (March) April-August	**Habitat Present**	Riparian woodlands provide potential habitat for the species. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Menzies' wallflower	*Erysimum menziesii*	FE/SE/1B.1	Localized on coastal dunes. Localized on dunes and coastal strand. 3-83 feet (1-25 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.
Nodding semaphore grass	*Pleuropogon refractus*	–/–/4.2	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, riparian forest. Elevation: 0-5,250 feet Bloom: (March) April-August	Absent	Coniferous forest and meadow habitat is not present. Suitable habitat is not present. This species was not present during botanical surveys.
Northern bugleweed	*Lycopus uniflorus*	–/–/4.3	Bogs and fens, marshes and swamps. Elevation: 15-6,560 feet Bloom: July-September	**Habitat Present**	Marshes provide potential habitat for the species. This species was not present during botanical surveys.
Northern clustered sedge	*Carex arcta*	–/–/2B.2	Bogs and fens in North Coast coniferous forest. 197–4610 feet (60–1,405 meters)	**Habitat Present**	Mesic habitats in woodlands provide marginal habitat for the species. This species was not present during botanical surveys.
Oregon goldthread	*Coptis laciniata*	–/–/4.2	Meadows and seeps, North Coast coniferous forest (streambanks). Elevation: 0-3,280 feet Bloom: (February) March-May (September-November)	**Habitat Present**	Streambank and marsh habitat provide potential habitat for the species. This species was not present during botanical surveys.
Oregon coast paintbrush	*Castilleja litoralis*	–/–/2B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Sandy sites. 16-837 feet (5-255 meters)	Absent	Coastal scrub and dune habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Oregon polemonium	*Polemonium carneum*	–/–/2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0-6,004 feet (0-1830 meters)	Absent	Prairie, scrub, and coniferous forest habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Pacific gilia	*Gilia capitata* ssp. *pacifica*	–/–/1B.2	Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland. 15–4,413 feet (5–1,345 meters)	Absent	Coastal scrub, chaparral, and grassland habitats are not present. Three CNDDB occurrences are located within 5 miles of the ESL, one of which is 200 feet east of the ESL. Suitable habitat is not present. This species was not present during botanical surveys.
Pacific golden saxifrage	*Chrysosplenium glechomifolium*	–/–/4.3	North Coast coniferous forest, riparian forest. Elevation: 30-2,100 feet. Bloom: February-June (July)	**Habitat Present**	Riparian forest provides potential habitat for the species. This species was not detected during previous early and mid-season surveys.
Pink sand-verbena	*Abronia umbellate* var. *breviflora*	–/–/1B.1	Foredunes and interdunes with sparse cover. *A. Umbellate* var. *breviflora* is usually the plant closest to the ocean. 0-83 feet (0-25 meters)	Absent	Coastal dune habitat is not present. Suitable habitat is not present. This species was not present during botanical surveys.
Point Reyes salty bird's-beak	*Chloropyron maritimum* ssp. *Palustre*	–/–/1B.2	Coastal salt marsh. Usually in coastal salt marsh with *Salicornia, Distichlis, Jaumea, Spartina*, etc. 0-378 feet (0-115 meters)	Absent	Suitable habitat is not present within the ESL. This species was not present during botanical surveys.
Purdy's fritillary	*Fritillaria purdyi*	–/–/4.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 570-7,400 feet Bloom: March-June	Absent	Chaparral and coniferous forest habitat are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Rattan's milk-vetch	*Astragalus rattanii* var. *rattanii*	–/–/4.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 95-2,705 feet Bloom: April-July	**Habitat Present**	Cismontane woodland habitat provides potential habitat for the species. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Redwood lily	*Lilium rubescens*	–/–/4.2	Broadleafed upland forest, chaparral, lower montane coniferous forest, North Coast coniferous forest, upper montane coniferous forest. Elevation: 95-6,265 feet Bloom: April-August (September)	Absent	Upland forest and coniferous forest habitat are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Running-pine	*Lycopodium clavatum*	–/–/4.1	Lower montane coniferous forest (mesic), marshes and swamps, North Coast coniferous forest (mesic). Elevation: 145-4,020 feet. Bloom: June-August (September)	**Habitat Present**	Marshes provide marginal habitat for the species. This species was not detected during botanical surveys.
Seacoast ragwort	*Packera bolanderi* var. *bolanderi*	–/–/2B.2	Coastal scrub, North Coast coniferous forest. Sometimes along roadsides. 98–3,002 feet (30–915 meters)	Absent	Coastal scrub and coniferous forest habitat are not present. Suitable habitat is not present, and the species was not detected during the survey.
Seaside bittercress	*Cardamine angulata*	–/–/2B.1	North Coast coniferous forest, lower montane coniferous forest. Wet areas, streambanks. 295-509 feet (90-155 meters)	Absent	Coniferous forest habitat is not present. This species was not present during botanical surveys.
Sea-watch	*Angelica lucida*	–/–/4.2	Coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps (coastal salt). Elevation: 0-490 feet Bloom: May-September	Absent	Coastal scrub and salt marsh habitat are not present. Suitable habitat is not present. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Short-leaved evax	*Hesperevax sparsiflora* var. *brevifolia*	–/–/1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats. 0-706 feet (0-215 meters)	Absent	Coastal dune and scrub habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Siskiyou checkerbloom	*Sidalcea malviflora* ssp. *patula*	–/–/1B.2	Coastal bluff scrub, coastal prairie, North Coast coniferous forest. Open coastal forest; roadcuts. 16–4118 feet (5–1,255 meters)	Absent	Coastal scrub, prairie and coniferous forest habitat are not present. This species was not present during botanical surveys.
Sticky pea	*Lathyrus glandulosus*	–/–/4.3	Cismontane woodland. Elevation: 980-2,625 feet Bloom: April-June	**Habitat Present**	Cismontane woodland habitat provides potential habitat for the species. This species was not present during botanical surveys.
Tracy's collomia	*Collomia tracyi*	–/–/4.3	Broadleafed upland forest, lower montane coniferous forest. Elevation: 980-6,890 feet Bloom: June-July	Absent	Coniferous forest and upland forest habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Tracy's tarplant	*Hemizonia congesta* ssp. *tracyi*	–/–/4.3	Coastal prairie, lower montane coniferous forest, North Coast coniferous forest. Elevation: 390-3,935 feet Bloom: May-October	Absent	Prairie and coniferous forest habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Trailing black currant	*Ribes laxiflorum*	–/–/4.3	North Cast coniferous forest. Elevation: 15-4,575 feet Bloom: March-July (August)	Absent	Coniferous forests are not present. Suitable habitat is not present. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Trifoliate laceflower	*Tiarella trifoliata* var. *trifoliata*	-/-/3.2	Lower montane coniferous forest, North Coast coniferous forest. Forest edge; moist shady banks. 557-4,921 feet (170-1500 meters).	Absent	Coniferous forests are not present. Suitable habitat is not present. This species was not present during botanical surveys.
Western lily	*Lilium occidentale*	FE/SE/1B.1	Coastal scrub, freshwater marsh, bogs and fens, coastal bluff scrub, coastal prairie, North Coast coniferous forest, marshes, and swamps. Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 9-361 feet (3-110 m)	**Habitat Present**	Freshwater marsh provides marginal habitat for the species. No CNDDB occurrences are within 5 miles of the ESL. This species was not detected during previous early and mid-season surveys.
Western sand-spurrey	*Spergularia canadensis* var. *occidentalis*	–/–/2B.1	Coastal salt marshes and swamps. 0-10 feet (0-3 meters)	Absent	Freshwater marsh provides marginal habitat for the species. This species was not present during botanical surveys.
Whitney's farewell-to-spring	*Clarkia amoena* ssp. *whitneyi*	–/–/1B.1	Coastal bluff scrub, coastal scrub. 82-411 feet (5-125 meters)	Absent	Coastal scrub and dune habitats are not present. Suitable habitat is not present. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
White-flowered rein orchid	*Piperia candida*	–/–/1B.2	North Coast coniferous forest, lower montane coniferous forest, broad-leafed upland forest. Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 66–5,299 feet (20–1,615 meters)	Absent	Woodland and coniferous forest habitat is not present. Suitable habitat is not present. This species was not present during botanical surveys.
Wolf's evening primrose	*Oenothera wolfii*	–/–/1B.1	Coastal bluff scrub, coastal dunes, coastal prairie, lower montane coniferous forest. Sandy substrates; usually mesic sites. 9–411 feet (3–125 meters)	**Habitat Present**	Suitable habitat may be present within the ESL. However, this species was not present during botanical surveys.
NON VASCULAR PLANTS AND FUNGI					
Minute pocket moss	*Fissidens pauperculus*	–/–/1B.2	North Coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and stream banks. 32-3,360 feet (10- 1024 meters)	Absent	Coniferous forest habitat is not present. This species was not present during botanical surveys.
Methuselah's beard lichen	*Usnea longissima*	–/–/4.2	Broadleafed upland forest, North Coast coniferous forest. Elevation: 160-4,790 feet Bloom: n/a	**Habitat Present**	Red alder forests provide marginal habitat for the species. Nineteen CNDDB occurrences are located within 5 miles of the ESL. This species was not present during botanical surveys.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Slender silver moss	*Anomobryum julaceum*	-/-/4.2	Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest. Moss which grows on damp rocks and soil; acidic substrates. Usually seen on roadcuts. 328-3280 feet (100-1000 meters).	Absent	Broad-leafed upland forest and coniferous forest habitat is not present. This species was not present during botanical surveys.
SENSITIVE NATURAL COMMUNITIES					
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance-*Salix lasiolepis* Association	–/–/S4	Sensitive Natural Community	Present	Arroyo willow thickets were found within the ESL during surveys.
Black Cottonwood Forest and Woodland	*Populus trichocarpa* Forest and Woodland Alliance	–/–/S3	Sensitive Natural Community	Present	Black cottonwood forest and woodlands have been documented within the ESL.
Northern Coastal Salt Marsh	N/A	–/–/S3.2	Sensitive Natural Community	Absent	Suitable habitat is not present within the ESL. This community was not present during botanical surveys.
Shining Willow Groves Forest and Woodland Alliance	*Salix lucida* ssp. *lasiandra*	–/–/S3	Sensitive Natural Community	Present	Shining Willow Groves Forest and Woodland Alliance have been documented within the ESL.
Sitka Spruce Forest	N/A	–/–/S1	Sensitive Natural Community	Absent	Suitable habitat is not present within the ESL. This community was not present during botanical surveys.
Sitka Willow Thickets	(*Salix sitchensis*) Shrubland Alliance	-/-/S3	Sensitive Natural Community	Present	Sitka Willow Thicket Alliance has been documented within the ESL.

Common Name	*Scientific Name*	Status[1] Federal/ State/ CRPR	Habitat Elevational Range (feet)	Habitat Present/Absent Critical Habitat	Rationale
Upland Douglas-Fir Forest	*Pseudotsuga menziesii* Alliance	–/–/S3.1	Sensitive Natural Community	Absent	Suitable habitat is not present within the ESL. This community was not present during botanical surveys.

[1]***Status:***

Federal status: FT = Federal Threatened; FE = Endangered; FCT = Federal Candidate Threatened; FCE = Federal Candidate Endangered

State status: ST = State Threatened; SE = State Endangered; SCE: State Candidate Endangered; FP = Fully Protected; SR = State Rare

CH = Critical Habitat

California Rare Plant Rank (CRPR):

1B = rare, threatened, or endangered in California and elsewhere

2B = rare, threatened, or endangered in California but more common elsewhere

3 = more information is needed (Review List)

4 = limited distribution (Watch List)

Western Lily

Western lily (*Lilium occidentale*) is federally and state listed as endangered. It is a perennial herb that grows from a bulb and produces crimson red flowers with yellow centers between June and July. It occurs in coastal areas between Coos Bay, Oregon, and Eureka, California, where it is associated with freshwater marshes, swamps, bogs, and fens in coastal scrub, coastal bluff scrub, coastal prairie, or North Coast coniferous forest habitats. It is typically found on well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil, usually near margins of Sitka spruce (*Picea sitchensis*) at elevations ranging from 6 to 607 feet (2-185 meters) (CDFW–CNDDB 2022). Threats to the species are primarily from development, hydrological modification from land use changes, and encroachment by trees and shrubs due to a lack of ecological disturbance, such as fire and grazing.

Seasonally appropriate floristic surveys were completed within the project area in 2016, 2020, and 2021 for western lily and other regionally occurring special status plants (Caltrans 2022a). The closest CNDDB record of western lily occurs at Table Bluff, approximately 12 miles northwest of the project site. An extant population is recorded in Fields Landing approximately 14 miles northwest of Rio Dell. The project site does not provide suitable habitat for western lily and the species has not been found within the project area.

ANIMAL SPECIES

Based on the queries made to USFWS, NMFS, and CDFW (CNDDB) databases (Appendix C), 33 out of the 49 special status animals identified in the databases could potentially occur or would have suitable habitat within the BSA (Table 6).

Table 6. Special Status Animal Species and Critical Habitat Potentially Occurring or Known to Occur within the Project Area

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
INVERTEBRATES					
Monarch butterfly	*Danaus plexippus*	FCE/–	Overwinters in sites with specific microclimate conditions, including dappled sunlight, high humidity, wind protection, and an absence of freezing temperatures or high winds. Requires nectar sources nearby, primarily milkweed. This species is discussed further in Chapter 4 due to its federal proposed candidate status and CESA ranking.	Absent	Suitable habitat is not present within the BSA.
Obscure bumble bee	*Bombus caliginosus*	–/–	Inhabits open grassy coastal prairies and Coast Range meadows. Nesting occurs underground as well as above ground in abandoned bird nests. Food plant genera include *Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia*.	**Habitat Present**	Suitable foraging habitat is present within the BSA.
Western bumble bee	*Bombus occidentalis*	–/SCE	Populations of central California, Oregon, Washington, and southern British Columbia have largely disappeared. Generalist foragers using a variety of flower types. Found in a variety of habitat types and forage/pollinate a wide range of plant species. Construct hives in underground burrows or crevices.	**Habitat Present**	Suitable foraging habitat is present within the Hydroacoustic Action Area.

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Western pearlshell mussel	*Margaritifera falcata*	–/–	Primarily creeks and rivers and less often lakes. Originally in most of state, now extirpated from central and southern California.	**Habitat Present**	Suitable foraging habitat is present within the Hydroacoustic Action Area.
Western ridged mussel	*Gonidea angulata*	–/–	Prefers lower velocity waters.	**Habitat Present**	Suitable foraging habitat is present within the Hydroacoustic Action Area.
FISH					
Chinook salmon–California Coastal ESU (pop. 17)	*Oncorhynchus tshawytscha*	FT/–	Requires cold, clean water and gravel for spawning and rearing, with cover for velocity and predator refuge. This ESU includes coastal rivers and streams from Redwood Creek (Humboldt County) to the Russian River (Sonoma County). This ESU includes naturally spawned Chinook salmon originating from rivers and streams south of the Klamath River to and including the Russian River.	**Habitat Present** **Critical Habitat Present** **EFH Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.
Coastal cutthroat trout	*Oncorhynchus clarkii*	–/SSC	Found in small, low gradient coastal streams that are cool, shaded, with cover. Also found in estuaries. They are anadromous, but strongly associated with fresh water.	Absent	Suitable habitat is not present within the Hydroacoustic Action Area or ESL. Project is outside of the coastal cutthroat range.
Coho salmon–Southern Oregon/ Northern California Coast ESU (pop. 2)	*Oncorhynchus kisutch*	FT/ST	Pop. 2 requires cold, clean water and gravel for spawning and rearing, with cover for velocity and predator refuge. This ESU includes coho salmon populations between Punta Gorda, California, and Cape Blanco, Oregon.	**Habitat Present** **Critical Habitat Present** **EFH Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Eulachon–Southern DPS	*Thaleichthys pacificus*	FT/–	Spawns in lower reaches of rivers during peak spring flow events. Adults in the southern DPS are semelparous. Needs sand or coarse gravel for spawning substrate. Larvae are transported to estuaries and then to the ocean.	Absent	Suitable habitat is not present within the Hydroacoustic Action Area or ESL.
Green Sturgeon-Northern DPS	*Acipenser medirostris*	FSC/-	The Northern DPS spawns in the Klamath River in California and Rogue River in Oregon. Norther DPS fish have been observed in the Trinity and Eel rivers, as well as in Oregon's Umpqua River though it is not yet clear if they routinely spawn in those locations.	**Habitat Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.
Green sturgeon–Southern DPS (pop.1)	*Acipenser medirostris*	FT/–	The most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity rivers. Spawns at temps between 46-58°F (8-14°C). Preferred spawning substrate is large cobble but can range from clean sand to bedrock.	**Habitat Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Longfin smelt	*Spirinchus thaleichthys*	FC/ST	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefers salinities of 15-30 parts per thousand (PPT) but can be found in completely fresh water to almost pure sea water.	Absent	Suitable habitat is not present within the Hydroacoustic Action Area and ESL.
Pacific lamprey	*Entosphenus tridentatus*	–/SSC	Found in Pacific Coast streams north of San Luis Obispo County. Swift-current, gravel-bottomed areas for spawning with water temps between 53-65°F (12-18°C). Ammocoetes need soft sand or mud.	**Habitat Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.
Steelhead–Northern California DPS (pop.16)		FT/-	Found in cool, clear, fast-moving perennial streams with riffles, pools, and dense riparian cover. The Northern California Steelhead DPS includes coastal rivers and streams from Redwood Creek (Humboldt County) to the Gualala River (Sonoma County).	**Habitat Present** **Critical Habitat Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.
Steelhead–summer-run DPS (pop. 36)	*Oncorhynchus mykiss irideus*	–/SE	Northern California coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS and Northern California DPS. Cool, swift, shallow water and clean loose gravel for spawning, and suitably large pools in which to spend the summer.	**Habitat Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Tidewater goby	*Eucyclogobius newberryi*	FT/–	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River (Del Norte County). Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Absent	Suitable habitat is not present within the Hydroacoustic Action Area or ESL.
Western brook lamprey	*Lampetra richardsoni*	–/SSC	Found in Pacific Coast streams north of San Luis Obispo County; however, regularly runs in Santa Clara River. Swift current, gravel-bottomed areas for spawning with water temps between 53-65°F (12-18°C). Ammocoetes need soft sand or mud.	**Habitat Present**	Suitable habitat is within the Eel River, located within the ESL and Hydroacoustic Action Area.
AMPHIBIANS					
Foothill yellow-legged frog–Northwest/North Coast clade	*Rana boylii*	–/SSC	Occurs throughout the North and South Coast Ranges, south to the Transverse Range, across northern California to the west slope of the Cascade Range, and south through the foothills of the Sierra Nevada. Inhabits forest streams and rivers (both perennial and intermittent) with sunny, sandy, and rocky banks with deep pools and shallow riffles.	**Habitat Present**	This species was observed on site. CESA listing status varies by clade; listing of the Northwest/North Coast clade is not warranted.

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Northern red-legged frog	*Rana aurora*	–/SSC	Occurs in coastal northern California; Mendocino County through Oregon and Washington; humid forests, woodlands, and streams with plant cover. Often found in woods adjacent to streams. Breeding habitat is in permanent water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.	**Habitat Present**	Suitable habitat is present within the ESL.
Pacific tailed frog	*Ascaphus truei*	–/SSC	Occurs in coastal northern California and inland to Big Bend in Shasta County and north in the Cascade Mountains. Restricted to montane cold, clear, rocky perennial streams in wet forests; tadpoles require water below 59°F (15°C).	Absent	Suitable habitat is not present within the BSA.
Southern torrent salamander	*Rhyacotriton variegatus*	–/SSC	Found in coastal drainages from southern Mendocino County north to Oregon; prefers cold, shaded streams and seeps, often with rocks and talus, usually on north-facing slopes.	Absent	Suitable habitat is not present within the BSA.
REPTILES					
Western pond turtle	*Emys marmorata*	–/SSC	Occurs throughout California west of the Sierra-Cascade crest; found from sea level to 6,000 feet (1,829 meters); occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms.	**Habitat Present**	This species was observed on site.

Common Name	*Scientific Name*	Status[1] Federal/State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
BIRDS					
American peregrine falcon	*Falco peregrinus anatum*	DL/FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Absent	Suitable nesting and foraging habitat are not present within the BSA.
Bald eagle	*Haliaeetus leucocephalus*	Delisted/SE (FP)	Nests in large, old-growth, or emergent live tree with open branches. Nests typically located 50 to 200 feet (15–61 meters) above ground. Forages primarily in large inland fish-bearing waters with adjacent large trees or snags, and occasionally in uplands with abundant rabbits, other small mammals, or carrion. Breeding range includes the Sierra Nevada, Cascade Range, and portions of the Coast Ranges; winter range expands to include most of the state.	**Habitat Present**	This species has been observed flying through and over the ESL. Suitable nesting and foraging habitat are present within the BSA.
Bank swallow	*Riparia*	–/ST	Uncommon breeding season resident in northern and central California; found in valleys and coastal areas where alluvial soils occur; nests colonially in vertical dirt or sand banks, usually along rivers or ponds.	**Habitat Present**	Marginal nesting and foraging habitat are present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat Present/Absent/ Critical Habitat/EFH	Rationale
California condor	*Gymnogyps californianus*	FE/SE(FP)	California condors use vast expanses of varying habitats for foraging, roosting, and nesting. Condors roost on large trees or snags, or on rocky outcrops and cliffs. Nests are in caves and ledges of steep rocky terrain or in cavities and broken tops of old-growth conifers such as coast redwood and, historically, the giant sequoia. Forages up to 100 miles from roost/nest. They are so heavy that they can have trouble taking off, so they often use open, windy areas where they can run downhill or launch themselves from a cliff edge or exposed branch to get airborne.	Absent	Although the species may fly through the area, suitable nesting habitat is not present within the BSA.
Golden eagle	*Aquila chrysaetos*	–/FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Absent	Although the species may migrate through the area, suitable nesting habitat is not present within the BSA.
Grasshopper sparrow	*Ammodramus savannarum*	–/SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	Absent	Suitable habitat is not present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat Present/Absent/ Critical Habitat/EFH	Rationale
Little willow flycatcher	*Empidonax traillii brewsteri*	–/SE	Prefers mountain meadows and riparian habitats. Nests near the edges of vegetation clumps and near streams in mountain meadows and riparian habitats	**Habitat Present**	Suitable nesting and foraging habitat are present within the BSA.
Marbled murrelet	*Brachyramphus marmoratus*	FT/SE	Occurs in coastal western United States; a small seabird that nests in California in stands of old-growth redwood and other types of conifer forest.	Absent	Suitable habitat is not present within the BSA.
Mountain plover	*Charadrius montanus*	–/SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	Absent	Suitable habitat is not present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Northern goshawk	*Accipiter gentilis*	–/SSC	Permanent resident in the North Coast Ranges from Del Norte to Mendocino counties, and in the Sierra Nevada south to Kern County; winters in Modoc, Lassen, Mono, and northern Inyo counties. Nests in mature and old-growth forest stands with large trees, high canopy cover, and open understory; forages in mature and old-growth forests with relatively dense canopy, but also enters adjacent open habitats.	Absent	Suitable habitat is not present within the BSA.
Northern spotted owl	*Strix occidentalis caurina*	FT/ST	Found in old-growth conifer forest with moderate to high canopy closure, a multi-layered and multi-species canopy with large overstory trees, a high incidence of large trees with various deformities (e.g., large cavities, broken tops, mistletoe infections, and debris accumulations), and sufficient open space below the canopy for owls to fly. Nests in dense old-growth forest in tree cavities or on overgrown, broken treetops.	**Habitat Present**	Low-quality roosting habitat is present within the BSA but not the ESL.
Tricolored blackbird	*Agelaius tricolor*	–/ST	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Habitat Present**	Marginal (low) nesting and foraging habitat is not present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Western snowy plover–Pacific Coast DPS	*Charadrius nivosus*	FT/SSC	Found adjacent to tidal waters of the West Coast; breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans.	**Habitat Present**	Suitable nesting and foraging habitat are present within the BSA.
White-tailed kite	*Elanus leucurus*	–/FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Habitat Present**	Suitable nesting and foraging habitat are present within the BSA.
Yellow-billed cuckoo–Western U.S. DPS	*Coccyzus americanus occidentalis*	FT/SE	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado rivers. Requires wide, dense riparian forests/woodlands 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.	**Habitat Present**	Suitable nesting and foraging habitat are present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Yellow rail	*Coturnicops noveboracensis*	–/SSC	Typically inhabits the higher and drier margins of freshwater and brackish marshes, usually dominated by sedges and grasses. It also occurs in swampy meadows, sedge meadows dominated by *Carex lasiocarpa*, and occasionally wet, cut-over hay fields.	Absent	Suitable habitat is not present within the BSA.
Yellow-breasted chat	*Icteria virens*	–/SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet (10 meters) of ground.	**Habitat Present**	Habitat is present within the BSA. This species was observed on site.
Yellow warbler	*Setophaga petechia*	–/SSC	Riparian plant associations near water. Also nests in montane shrubbery in open conifer forests in the Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**Habitat Present**	Habitat is present within the BSA. This species was observed on site.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Vaux swift	*Chaetura vauxi*	–/SSC	Redwood, Douglas-fir, and other coniferous forests. Nests in large hollow trees and snags. Often nests in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.	**Habitat Present**	Habitat is present within the BSA. This species was observed on site.
MAMMALS					
Pacific fisher–West Coast DPS	*Pekania pennanti*	–/SSC	Distributed throughout the northern Coast Ranges, Cascade Range, Klamath Range, and southern Sierra Nevada. Inhabits forests with diverse successional stages with mostly mid- and late-successional stages and high percent canopy closure. Requires tree or snag cavities for denning, in large-diameter trees.	**Habitat Present**	Marginal habitat is present within the BSA.
Pacific (Humboldt) marten–Coastal DPS	*Martes caurina humboldtensis*	FT/SE,SSC	Known from Del Norte and Humboldt counties and adjacent western Siskiyou County. Found in late-successional coniferous forests.	Absent	This location is outside the current range of this species.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Pallid bat	*Antrozous pallidus*	–/SSC	Occurs throughout California except for the high Sierra Nevada from Shasta to Kern counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County. Habitat types include grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting.	**Habitat Present**	Suitable habitat is present within the BSA.
Ringtail	*Bassariscus astutus*	–/FP	Known from Humboldt County, occurs in riparian forests, conifer forest and shrub habitat types. Dens in rock crevices, tree hollows, or under cliffs.	**Habitat Present**	Suitable habitat is present within the BSA.
Sonoma tree vole	*Arborimus pomo*	–/SSC	Endemic to California; from Sonoma County, north through Mendocino, Humboldt, and western Trinity counties to the South Fork of the Smith River, Del Norte County; poorly known; occurs in mixed evergreen forests; may prefer wet and mesic old-growth Douglas-fir forest.	**Habitat Present**	Suitable habitat is not present within the ESL but is present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale
Townsend's big-eared bat	*Corynorhinus townsendii*	–/SSC	Primarily roosts in caves and cave-like roosting habitat, such as tunnels and mines. Very sensitive to disturbances and may abandon a roost after one on-site visit. Reported to use buildings in the northern and coastal portions of range. Also reported to use bridges and hollow trees as roost sites. In California, occurs in inland deserts, moist cool redwood forests, oak woodlands of the inner Coast Ranges and Sierra Nevada foothills, and low to mid-elevation mixed conifer forests.	**Habitat Present**	Suitable habitat is present within the BSA.
Western red bat	*Lasiurus blossevillii*	–/SSC	Roosts primarily in trees, 2-40 feet (0-13 meters) above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	**Habitat Present**	Suitable habitat is present within the BSA.
White-footed vole	*Arborimus albipes*	–/SSC	In California, only known from Humboldt and Del Norte counties. Found in coastal forests dominated by redwood, Douglas-fir, and occurs in riparian forest cover types. Occupies habitat near small streams with dense alder and deciduous trees and shrubs.	**Habitat Present**	Suitable habitat is present within the BSA.

Common Name	*Scientific Name*	Status[1] Federal/ State	General Habitat Description	Habitat, Critical Habitat, and EFH Present/Absent	Rationale

[1] **Federal Status**: FE = Endangered; FPT = Proposed Threatened; FT = Threatened; FC = Candidate; DL = Delisted

State Status: SE = Endangered; ST = Threatened; SCT = State Candidate Threatened; SCE = State Candidate Endangered; FP = CDFW Fully Protected; SSC = CDFW Species of Special Concern; SR = State Rare

(*Source: CDFW-CNDDB 2022; USFWS 2022, Caltrans 2022, Survey data)*

Bat Species

In California, 14 species of bats are either considered Species of Special Concern (SSC) by CDFW or currently proposed for such status. Of California's 25 bat species, 15 are known to use bridges. Of these 15 bat species, 4 species commonly use bridges, 8 species occasionally use bridges, and 3 species rarely use bridges (Table 7). Bats also forage in habitats near bridges such as riparian communities and open water, and along transportation corridors (e.g., roadside tree canopies).

Two species of bats considered to be SSC by CDFW were documented within the twelve-quad database searches: Townsend's big-eared bat (*Corynorhinus townsendii*) and western red bat. Both SSC have the potential to occur within the project limits. The pallid bat (*Antrozous pallidus*), considered to be SSC, is common in low elevations of California and occupy a wide variety of habitats, including residential porches and buildings. The project location is also within range of California myotis (*Myotis californicus*), fringed myotis (*Myotis thysanodes*), little brown bat (*Myotis lucifugus*), Mexican free-tailed bat (*Tadarida brasiliensis*), hoary bat, silver-haired bat (*Lasionycteris noctivagans*), Yuma myotis (*Myotis yumanensis*), and several other species (CNDDB 2022). Of these, Mexican free-tailed bat, little brown bat, and Yuma myotis are commonly found on bridges, and fringed myotis, Townsend's big-eared bat, and little brown bat are occasionally found on bridges. All these species are known to use bridge structures for day roost, maternity roost, and/or night roost where habitat is suitable (Caltrans 2022a). Yuma myotis, Townsends big-eared bat, big brown bat (*eptesicus fuscus*), long-legged myotis (*Myotis volans*), long-eared myotis (*Myotis evotis*), hoary bat, little brown bat, and California myotis have been historically documented roosting within redwood trees (Zielinski and Mazurek, 2007). Hoary bat, silver-haired bat, and western red bat are known to roost in trees exclusively.

The CNDDB RareFind database documents several bat species in the twelve quad USGS 7.5-minute quadrangle (quad) search. Caltrans biologists conducted bat presence and absence surveys in 2021. Emergence surveys were conducted over three days during the peak of the summer breeding season when activity is expected to be highest (Caltrans 2022a). No bats were observed emerging from bridge piers or weepholes. Acoustic detection surveys over this period positively identified Yuma myotis, little brown bat, and Mexican free-tailed bats foraging within the survey area. Possible acoustic recordings of a silver-haired bat and a Townsend's big-eared bat were collected however the software was not within the recommended confidence intervals and thus the species classification is unconfirmed.

Table 7. Roosting Patterns for California Bat Species

Roosting Patterns for California Bat Species

Species Name	Common Name	Status	Bridge	Cave/ Mine	Building	Cliff/ Rock Crevice	Tree Bark/ Hollow	Tree Foliage	Riprap/ Dry Rock Wall
Family Phyllostomidae (leaf-nosed bats)									
Choeronycteris mexicana	Mexican long-tongued bat	SSC, SC		1	2				
Leptonycteris curasoae	Lesser long-nosed bat			1					
Macrotus californicus	California leaf-nosed bat	SSC, SC	3	1					
Family Molossidae (free-tailed bats)									
Eumops perotis	Western mastiff bat	SSC, SC			3	1			
Nyctinomops femorosaccus	Pocketed free-tailed bat	SSC				1			
Nyctinomops macrotis	Big free-tailed bat	SSC, SC				1			
Tadarida brasiliensis mexicanus	Mexican free-tailed bat		1	2	1	1	3		
Family Vespertilionidae (mouse-eared bats)									
Antrozous pallidus	Pallid bat	FSS, SSC	1	2	1	2	1		
Corynorhinus townsendii	Townsend's big-eared bat	FSS, SSC, SC	2	1	2		3		
Eptesicus fuscus	Big brown bat		1	2	1	2	1		
Euderma maculatum	Spotted bat	SSC, SC				1			
Lasionycteris noctivagans	Silver-haired bat		3				1		
Lasiurus blossevillii	Western red bat	FSS, PSSC						1	
Lasiurus cinereus	Hoary bat							1	
Lasiurus xanthinus	Northern yellow bat	PSSC, SC						1	
Myotis californicus	California myotis		2	2	1	1	2		3
Myotis ciliolabrum	Small-footed myotis	SC	2	2		1			
Myotis evotis	Long-eared myotis	SC	2	2	2	2	1		2
Myotis lucifugus	Little brown myotis		2	2	1	2	2		
Myotis occultus	Arizona myotis	SSC, SC	2		?		1		
Myotis thysanodes	Fringed myotis	PSSC, SC	2	1	2	2	1		
Myotis velifer	Cave myotis	SSC, SC	2	1	?				
Myotis volans	Long-legged myotis	PSSC, SC	2	2	2		1		
Myotis yumanensis	Yuma myotis	SC	1	2	1	3	2		3
Pipistrellus hesperus	Western pipistrelle		3	2	3	1			

Notes: Adapted from Johnston et al. [2004]

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

Status:

FSS = U.S. Forest Service Sensitive

SSC = California Department of Fish and Wildlife, Mammal Species of Special Concern

PSSC= Proposed, California Department of Fish and Wildlife, Mammal Species of Special Concern

SC = Former Candidate (Category 2) for listing under U.S. Endangered Species Act; Species of Concern

Foothill Yellow-legged Frog

Foothill yellow-legged frog (FYLF) (*Rana boylii*) is a state SSC with some populations considered state Threatened. Populations on California's northern coast (the Northern California clade), which includes the BSA, were determined not warranted for listing. The species is characteristically found very close to water in association with perennial streams and ephemeral creeks that retain perennial pools through the end of summer. Adults preferentially utilize shallow edgewater areas with low water velocities for breeding and egg laying, usually characterized by gravel, cobble, and boulder substrate. Reproduction occurs in aquatic environments but mating and egg-laying occurs exclusively in streams and rivers (not in ponds or lakes). This occurs from April until early July, after streams have slowed from winter runoff. Eggs hatch within 5 to 37 days, depending on temperature. Tadpoles transform in three to four months, typically from July to October (California Herps 2018). Juvenile and non-breeding adult frogs may be found adjacent to riffles, cascades, main channel pools, and plunge pools that provide escape cover. During cold weather, individuals seek cover under rocks in the streams or on shore within a few meters of water.

CNDDB documents several FYLF in the surrounding area. FYLF were detected by project biologists on the river bar within the ESL from May through October. No egg masses were detected during breeding season site visits. Quality breeding habitat is currently not present with the ESL due to river conditions, but suitable breeding habitat is present farther up and downstream of the current project and within the BSA.

Northern Red-legged Frog

The Northern red-legged frog (NRLF) (*Rana aurora*) is a state SSC that occurs along the California Coast Ranges from Del Norte County to Mendocino County, usually below 3,936 feet (1,200 meters). NRLF use ephemeral, intermittent, and perennial creeks and streams, reservoirs, springs, wetlands, and man-made impoundments as breeding habitat and aquatic non-breeding habitat (CDFW 2022). Upland dispersal habitats are primarily utilized by NRLF in dispersal events, which can be triggered by both periods of wet weather and dry weather when breeding pools and other occupied aquatic habitats dry up and are no longer suitable (CDFW 2022). NRLF likely require rains for dispersal as individuals have been found considerable distances from breeding sites on rainy nights. This frog is highly aquatic and prefers shorelines with extensive vegetation. It uses deep-water habitat (three feet [one meter] or more) at the bottom of pools to escape predation.

NRLF breed from January to July and require permanent or nearly permanent pools for larval development, which takes 11 to 20 weeks. Intermittent streams must retain surface water in pools year-round for frog survival (CDFW 2022).

No species-specific surveys were conducted by Caltrans biologists; however, this species has been observed within the BSA. There are numerous CNDDB occurrences of the NRLF within two miles of the work area. The wetlands and tributaries adjacent to the project area within the BSA provide suitable habitat for NRLF. This species may be present within the ESL during construction activities.

Monarch Butterfly

California is home to both breeding, migrating, and overwintering populations of the migratory monarch butterfly (*Danaus plexippus*) (monarch). The USFWS received a petition to list the monarch on December 31, 2014, and began the process of soliciting information consistent with the requirement on the Endangered Species Act ("Service Review"). To date, the USFWS has completed the analysis of the petition to list and determined that listing the monarch under FESA is Warranted, but Precluded; therefore, the species currently has no legal protection under FESA status but would be treated as a Candidate Species as though proposed for listing.

Currently, the monarch butterfly is not listed under the CESA; however, CDFW does classify the species as a special status invertebrate with a "S2/S3" ranking, meaning that it has a moderate to high "risk of extirpation in the state" (CDFW 2022).

The distribution of monarchs throughout California depends on the season and the location. Monarchs are well known for their long-distance migrations, and during the spring and summer months can be found almost anywhere in the state. In early September, West Coast migrants, those butterflies typically found to the west of the Continental Divide, begin to migrate to suitable overwintering sites. Monarchs seek out overwintering sites with specific microclimate conditions, including dappled sunlight, high humidity, wind protection, and an absence of freezing temperatures or high winds. For these reasons, most overwintering sites along the Pacific Coast are within 1.5 miles of the Pacific Ocean.

Monarch butterflies across North America have been dramatically declining since the early 1960s; the western monarch population in particular has undergone a staggering decline in the last decade, with a current population hovering at 1% (30,000) of the approximately 10 million individuals observed in the 1980s (Shultz et al., 2017).

According to CNDDB and Xerces Society data, there are no known overwintering roosts near the project location. No complete monarch butterfly roost surveys were conducted for this project. No milkweed host plants were observed within the ESL. No monarchs were observed roosting or flying during any field visits by project biologists.

Obscure Bumble Bee and Western Bumble Bee

The obscure bumble bee is a species of bumble bee native to the west coast of the United States where its distribution extends from Washington to southern California. It is critically imperiled due to rarity, few populations, and restricted range. The obscure bumble bee is associated with several plant genera including *Baccharis, Cirsium, Lupinus, Lotus, Grindelia* and *Phacelia* (CDFW 2022). Queens of this species emerge from hibernation in late January, the first workers appear in early March, and the males follow by the end of April. Nests are usually well concealed, often underground, sometimes on the surface, and occasionally 30 to 40 feet (9 to 12 meters) above ground in trees (Thorp et al., 1983). The colony dissolves in late October, when all the inhabitants die except the new queens.

The western bumble bee (*Bombus occidentalis*) is a species of bumble bee native to the Western United States and Canada. It is considered critically imperiled in the state (CDFW S1 species) because of extreme rarity (often five or fewer populations) or because of factor(s) such as very steep population declines making it especially vulnerable to extirpation from the state (CDFW 2022). This bumble bee is associated with several plant genera *including Melilotus, Cirsium, Lupinus, Trifolium, Centaurea,* and *Eriogonum* (CDFW 2022). Queens of this species emerge from hibernation in late January and select a nest site in an existing hole in the ground (such as an abandoned rodent hole). The queen gathers pollen and nectar and stores them in wax containers. She then lays 8 to 16 eggs that hatch into larvae and tends to them until they spin cocoons, pupate, and emerge as workers. Once they emerge, the queen stops foraging and devotes her time to egg laying. The first workers appear in early March and the drones and new queens emerge by the end of April. The colony dissolves in late October when the old queen, workers, and drones die. The new queens mate and dig holes in which they will hibernate through the winter.

No species-specific surveys were conducted for bumble bee species. CNDDB contains records of both bumble bee species, with the nearest in Rio Dell along the Eel River where *B. occidentalis* was collected in 1970.

Migratory Bird Species

During site visits and surveys for sensitive species, special attention has been paid to observe and record all migratory birds present and potential nesting behavior. An adult pair of barn owls (*Tyto alba*) were observed nesting and roosting within the hollows of Piers 1 through 4. This pair successfully fledged young in 2020 and 2021. White throated swifts (*Aeronautes saxatalis*) have been observed entering and exiting the concrete box girder during the breeding season. Additionally, active cliff swallow (*Petrochelidon pyrrhonota*) nests were observed on the concrete surfaces of the bridge from May through August. Northern rough-winged swallows (*Stelgidopteryx serripennis*) were also observed displaying nesting behavior that indicated nesting attempts inside the piers. A juvenile common merganser (*Mergus merganser*) was observed flying into and out of Pier 4, possibly indicating that mergansers may potentially nest within the piers during the breeding season. A breeding pair of spotted sandpipers (*Actitis macularius*) have been seen yearly on the river bar and a nest was discovered outside of the ESL but within the BSA.

Western Pond Turtle

Western pond turtle (WPT) (*Emys marmorata*) is a state SSC. This species can be found near permanent ponds, lakes, streams, and irrigation ditches. They favor habitats with large numbers of emergent logs or boulders, where they gather to bask. WPT are omnivorous and most of their animal diet includes insects, crayfish, and other aquatic invertebrates. Fish, tadpoles, and frogs are eaten occasionally, and carrion is eaten when available. Plant foods include filamentous algae, lily pads, tule, and cattail roots. Females typically move overland for up to 100 feet to find suitable nesting sites for egg laying. Eggs are laid from March to August and incubate underground for approximately 75 days. Eggs are typically deposited in nests constructed in sandy banks along large slow-moving streams, though nests have been observed in many soil types as far as 325 feet from water.

No species-specific surveys were conducted for WPT. This species has been observed within the BSA while basking on logs within the Eel River. CNDDB also documents this species within the twelve-quad search, the closest of which is 0.5 mile north of the ESL.

Pacific Lamprey and Western Brook Lamprey

Two California SSC lamprey species are known to inhabit the Eel River—the Pacific lamprey (*Entosphenus tridentatus*) and Western brook lamprey (*Lampetra richardsonii*). Pacific lamprey are parasitic, anadromous fish for which the Eel River was named due to its resemblance to the American eel (*Anguilla rostrata*). Pacific lamprey enter rivers in winter and spring and when females become gravid both male and female spawners dig gravel nests to spawn. Upon emergence from the gravels, Pacific lamprey ammocoetes (the larval stage) passively drift downstream to low velocity, backwater silty habitats where they burrow and live as filter feeders for up to seven years.

Metamorphosis to the juvenile life history phase occurs gradually over several months and eyes and teeth are developed. Juveniles passively migrate downstream with increased fall stream flows, eventually reaching the marine environment. As adults, Pacific lamprey are parasitic and feed on marine fishes by attaching to prey with their specialized mouth. After three years in the marine environment, feeding ceases, and the freshwater migration occurs between February and June. Pacific lamprey overwinters in fresh water and spawn from March to July. Lampreys die within days after spawning (CDFW 2015; Calfish 2018).

Western brook lamprey are not anadromous or parasitic; they stay in steams for their entire lives as filter feeders. Western brook lamprey ammocoetes are typically found in back water areas and pools where they burrow into soft substrates and feed on algae and organic matter for 2-4 years. Ammocoetes mature to the adult phase in fall and spawn the following spring. Spawning occurs in riffles for up to six months depending on stream flow. Adult spawners dig nests 5.9–7.8 inches (15-20 cm) long in a gravel substrate where one female may be surrounded by several males. The female releases 1,100-3,700 eggs, which are quickly fertilized, and then the nest is covered before hatching in about 10 days.

Focused surveys for Pacific lamprey were not conducted for the proposed project. However, during summer surveys for salmonids conducted in 2021 and 2022, no lampreys were observed. The nearest CNDDB occurrences for both lamprey species are approximately 11 miles north of the BSA; however, this species is known to be present in the Eel River. This species may be present in the watercourse within the ESL and BSA.

Pacific Fisher–West Coast DPS-Northern California ESU

The Pacific fisher (*Pekania pennanti*) is a state SSC and some California populations are regulated as state threatened. The 20160420 FGC Notice of Findings stated that the Pacific fisher Southern Sierra ESU (defined as California south of the Merced River) warranted listing as threatened, while the Northern California ESU does not currently warrant listing. The project would occur within the range of the SSC-Northern California ESU of Pacific fisher.

The fisher is one of the larger members of the weasel family (Mustelidae) and are opportunistic, generalist predators with a diverse diet including mammalian and avian prey, ungulate carrion, vegetation, insects, and fungi. Fisher are known to occur in coniferous forest in the coastal ranges of northern California, including second growth and old-growth redwood forest, with a possible preference for stands with structural complexity, diversity, and large logs and snags for resting and denning (Hatler et al., 2003). The fisher requires intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. They require large areas of mature, structurally complex conifer and mixed conifer hardwood forest and occupy home ranges that can exceed 14,826 acres (6,000 hectares) (Zielinski et al., 2007). The CNDDB RareFind database shows the nearest fisher detections approximately 7.4 miles southwest and 7.6 miles northeast of the ESL. Protocol-level surveys were not performed for this species.

Trees suitable for fisher den sites include conifers (≥ 22 inches DBH) and hardwoods (≥ 18 inches DBH), not smaller trees. Day resting sites could include branches, platforms, and cavities of live trees. Suitably sized trees with the following characteristics were considered as potential fisher den sites:

- Any broken-topped tree with a minimum diameter at the break of 18 inches or larger;
- Trees with one or more limbs 12 inches or greater in diameter;
- Trees with a cavity (or void within a tree bole or large limb) with a relatively small opening; includes all cavities with entrances 2.5 to 6 inches across the smallest direction (for example, a vertical slit-like opening 4 inches across would count, as would a more circular entrance).

Small portions of the BSA contain larger trees with potential resting locations with suitable denning cavities; however, there are no potential den structures or day resting locations within the ESL where work would be conducted. Fishers are a nocturnal species averse to interacting with humans. They would likely be absent from otherwise suitable habitat within the BSA due to high levels of human disturbance, such as areas bordering roads, trails, human habitation, etc. No signs of fisher occupation were observed during site visits.

Sonoma Tree Vole and White-footed Vole

Sonoma tree vole (*Arborimus pomo*) is a state SSC distributed along the North Coast of California from Sonoma County to the Oregon border, being more or less restricted to the fog belt. It is reported to be rare to uncommon throughout its range, however the difficulty of locating nests and capturing individuals make abundance difficult to assess. Sonoma tree voles occur in old-growth and other forests, mainly Douglas-fir, redwood, and montane mixed hardwood-conifer habitats.

Sonoma tree voles feed on needles of Douglas-fir and grand fir (*Abies grandis*). Needles and twigs are gathered primarily at night and are either consumed on site or brought to the nest where the needle resin ducts are removed, and the remainder is eaten.

Nests of Douglas-fir needles are constructed in trees, preferably tall trees. Nests may be situated on the whorl of the limbs against a trunk or at outer limits of branches. In young, second-growth Douglas-fir, the broken tops of trees frequently are used for nesting (Maser et al., 1981). The Sonoma tree vole breeds year-round, but most breeding is from February through September. Litter size ranges from one to four, with an average of two, and weaning occurs at 30 to 40 days (Maser et al., 1981).

The white-footed vole (*Arborimus albipes*) is a state SSC and known only from Humboldt and Del Norte counties in California. This scarce resident of humid coastal forests is found in redwood, Douglas-fir, and riparian forests. Found from sea level to 3,500 feet (1,100 meters), white-footed voles feed principally on the leaves of green plants, including trees, shrubs, forbs, ferns, grasses, and aquatic plants. Red alder is the preferred food source overall, but most hardwoods, forbs, and shrubs are also consumed. This vole feeds mainly in trees, but also in shrubs and on the ground. The white-footed vole builds a nest on the ground, under stumps, logs, or rocks, and finds cover in dense vegetation near streams.

White-footed voles may breed throughout the year. However, pregnant individuals have been captured only from mid-April to late July (Johnson and Maser, 1982), suggesting an extended spring-summer breeding season. Maser and Johnson (1967) concluded that it prefers areas of herbaceous growth found in riparian communities along small streams, or in small clearings created by fallen timber in redwood or Douglas-fir forests. In California, this species appears to be associated with small clear streams flowing through humid coniferous forests (Maser and Johnson, 1967). The white-footed vole is probably preyed on by weasels, snakes, and owls (Zeiner et al., 1990).

No species-specific surveys were performed for this species; however, trees slated for removal were investigated for signs of tree vole use. No signs of use were detected. One CNNDB detection of the Sonoma tree vole is approximately 2.1 miles west of the ESL. There are no CNDDB records of white-footed tree vole in the twelve-quad CNDDB query.

Vaux's Swift

The Vaux's swift (*Chaetura vauxi*) is a state SSC. The range of the Vaux's swift in coastal California generally follows the distribution of redwood trees where it occurs primarily as a migrant and summer resident from mid-April to mid-October. Breeding typically occurs from early May to mid-August (Hunter et al., 2005)

The high-flying swift feeds in flight on flying insects as they forage over forests, fields, towns, and rivers. This is a gregarious species, with flocks of 30 or more birds, and is often with other swift species. Vaux's swift nest sites are usually inside hollow trees, reached via broken-off tops or woodpecker holes. This species also occasionally nests in chimneys and bridge structures.

No species-specific surveys were performed for this species; however, Vaux's swift have been observed within the project area during other surveys. This species was not observed using the bridge structure for nesting and has only been observed in flyovers. Records of Vaux's swift are not recorded in CNDDB, thus there are no CNDDB records of Vaux's swift within the twelve-quad search radius. The eBird database lists several documented observations of Vaux's swift within two miles of the project area.

Yellow-breasted Chat

The yellow-breasted chat (*Icteria virens*) is a state SSC and is known to breed in northern California. Chats start arriving in Humboldt County in mid-April and depart by mid-September. Chats prefer dense riparian thickets and brambles. Breeding occurs between May and July. Nests are built in riparian habitats consisting of willow, blackberry, and wild grape. This species usually forages and nests within 10 feet of ground (Hunter et al., 2005). Prey items typically consist of berries, grasshoppers, bugs, beetles, weevils, bees, wasps, tent caterpillars, ants, moths, and mayflies.

This species was observed by Caltrans biologists within the BSA during the breeding season. No CNDDB detections have been recorded within the twelve-quad search radius. The eBird database contains numerous occurrences of yellow-breasted chat within two miles of the project area.

Yellow Warbler

The yellow warbler (*Dendroica petechia*) is a state SSC bird species known to breed within Del Norte, Mendocino, and Humboldt counties. The yellow warbler usually breeds in riparian deciduous habitats containing cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland habitats. Territories often include tall trees for singing and foraging with a heavy brush understory for nesting. Yellow warblers breed from mid-April into early August with peak activity in June. In northern California, willow cover and Oregon ash are important predictors of high yellow warbler abundance (Hunter et al., 2005). Yellow warblers typically forage on ants, bees, wasps, caterpillars, beetles, true bugs, flies, and spiders.

This species has been observed within the BSA during the breeding season. No CNDDB detections have been recorded within the twelve-quad search radius. The eBird database contains six occurrences of yellow warbler within two miles of the project area.

THREATENED AND ENDANGERED SPECIES

American Peregrine Falcon

American peregrine falcon (*Falco peregrinus*) is a CDFW fully protected species. The peregrine falcon feeds mainly on birds (doves, shorebirds, pigeons, ducks), as well as some mammals, such as bats, rabbits, and rodents, and occasionally insects, reptiles, and fish. Peregrine falcons are usually found alone or in breeding pairs, with each pair maintaining a breeding territory and often remaining together throughout the year. Nesting in northern California may begin in March, with young leaving the nest by early July. Although peregrine falcons often nest on cliff faces, they would select a wide variety of other structures for nest sites, including buildings, bridges, electrical transmission structures, and occasionally the abandoned nests of large raptors or ravens (White et al., 2002).

No species-specific surveys were performed for this species. The CNDDB lists one American peregrine falcon observation 6.69 miles to the southeast of the ESL. The eBird database lists several detections within 2 miles of the project area. Peregrine falcons have been observed flying through the BSA, however no potential nests or nesting behavior have been observed within the BSA.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) was delisted from federal status but is still considered Endangered in California. They also remain federally protected by the Bald and Golden Eagle Protection Act (16 USC § 668). Bald eagles typically nest in large trees within a mile of fish-bearing waters, within or directly adjacent to forests with large trees that provide suitable nesting structures (Buehler 2000). Active breeding occurs February through August. Bald eagles are known to feed on a wide variety of fish, small mammals, amphibians, reptiles, and small birds. They also scavenge for food and eat carrion. In Humboldt County, bald eagles are strongly associated with open water and undisturbed shorelines. River corridors and estuaries attract individuals thought to be migrants, or otherwise nonresident, from October to March (Hunter et al., 2005).

No species-specific surveys were performed for this species. CNDDB lists one observation 12.1 miles north of the BSA. The eBird database lists several detections within 2.5 miles of the project area. Bald eagles have been observed flying through and over the area, however no potential nests or nesting behavior have been observed within the BSA.

Bank Swallow

A state-threatened species, the bank swallow (*Riparia riparia*) is a small brown bird that forages by hawking insects during long, gliding flights. Bank swallows feed predominantly over open riparian areas, lakes, and coasts. Bank swallows are colonial nesters who first choose colony sites, and then select a nesting site where they create burrows in the sandy banks (Garrison 1999). Nesting colonies are generally located along rivers, streams, lakes, ocean coasts, or in sand and gravel pits because birds require relatively large open areas for vertical flying space around nest burrows. Colonies may support 100–200 nesting pairs. Nesting occurs from early May through July.

No species-specific surveys were performed for this species. CNDDB lists four observations within the twelve USGS 7.5-minute quadrangle search. The eBird database lists several detections approximately 2.5 miles northwest of the project area at the confluence of the Eel and Van Duzen rivers. No bank swallows or their nests were observed within the BSA. Habitat that would support bank swallow nesting is not present within the ESL or BSA.

Green Sturgeon

The Northern Distinct Population Segment (DPS) (pop. 1) of green sturgeon (*Acipenser medirostris*) is a state SSC. This DPS includes coastal spawning populations from the Eel River north to the Klamath and Rogue rivers. In waters north of and including the Eel River, green sturgeon occurring upstream of the head of the tide are presumed to belong to the northern DPS because it is unlikely that southern DPS green sturgeon (FESA threatened species) would venture farther into non-natal streams beyond the head of tide (74 CFR § 52300).

Green sturgeon are long-lived, slow-growing fish, and are the most marine-oriented of the sturgeon species. They spawn in deep pools in large, turbulent, freshwater river main stems (Moyle et al., 1992). They spend most of their lives in nearshore oceanic waters, bays, and estuaries. Younger green sturgeon reside in fresh water, with adults returning to fresh water to spawn when they are about 15 years old. Spawning is believed to occur every two to five years (Moyle 2002). Adults typically migrate into fresh water beginning in late February, and spawning occurs from March-July, with peak activity from April-June (Moyle et al., 1995). Juvenile green sturgeon spend a few years in fresh and estuarine waters before they leave for salt water. No green sturgeon were observed during snorkel surveys and their preferred habitat is not present within the BSA.

Little Willow Flycatcher

Little willow flycatcher (WIFL) (*Empidonax traillii brewsteri*) is a state endangered bird species. WIFL occur annually both as a spring and fall migrant and casual summer resident and breeder in northwestern California. They are late spring migrants, appearing along the coast in May-June and in August-September. WIFL are locally rare to uncommon during their nesting season in June and July. Breeding habitat is typically moist meadows with perennial streams, lowland riparian woodlands dominated by willow (primarily in tree form) and cottonwoods, or smaller spring-fed or boggy areas with willow or alder (Craig, D., and P. L. Williams, 1998). In lowland riverine habitats, such as those found within the project area, it is thought that contiguous willow thickets are used because the linear nature of these areas provide sufficient edge habitat, and/or the tree-like willows typically found in these areas provide sufficient openings within the canopy (Harris 1991).

CNDDB contains one record of WIFL from 2000, observed approximately 23 miles southeast of the project area. Unprocessed data from CNDDB Online Field Survey forms document a willow flycatcher with a brood patch was banded near the confluence of the Eel and Van Duzen rivers. eBird shows the closest observation of this species both in Scotia and at the confluence of the Eel and Van Duzen rivers (eBird 2022). No species-specific surveys have been conducted for this species; however, bird surveys and point counts have been conducted within the ESL. No WIFL were detected during these surveys or during other site visits.

Northern Spotted Owl

The northern spotted owl (NSO) (*Strix occidentalis caurina*) is a federally and state threatened species. NSO occur in the southern Cascade Range of northern California, to the Klamath Mountains, and down the Coast Ranges through Marin County. NSOs generally have large home ranges and use large tracts of land containing significant acreage of older forest to meet their biological needs. Median annual home range size varies from 985 acres (0.7-mile radius) in the California Coast Redwood Region to 3,410 acres (1.3 miles radius) in the California Coast Mixed Conifer Zone or California Cascades. The attributes of superior NSO nesting and roosting habitat typically include a moderate-to-high canopy closure (60 to 80 percent); a multi-layered, multi-species canopy with large overstory trees; a high incidence of large trees with deformities (large cavities, broken tops, mistletoe infections, and debris accumulation); large accumulations of fallen trees and other debris; and sufficient open space below the canopy for flight (Gutiérrez et al., 1995).

Protocol-level surveys for NSO were not conducted for the project. There low-quality roosting habitat present within the BSA but no suitable habitat is present within the ESL for this species. The nearest positive observation, noted in the CNDDB spotted owl observation database (CDFW 2022), is within the BSA, however approximately 0.31-mile to the northeast of the ESL where work activities would occur. This observation was from 1999 and an NSO survey in 2011 failed to detect any NSO within the BSA (CDFW 2022). The single observation within the BSA was determined to be associated with the HUM0975 activity center (note the observation is of an individual bird where the activity center is an established location within a core use area, which are typically nests) which is 0.82 mile north of the BSA and 1.4 miles from construction (the ESL).

Ringtail

Ringtail (*Bassariscus astutus*) is a state fully protected mammal. It is a member of the raccoon family (Procyonidae) that may be found in fragmented and disturbed areas and will den inside buildings and other manmade structures (Myers 2010). Ringtail are nocturnal carnivores that forage at night for a variety of prey, primarily small mammals, invertebrates, birds, and reptiles. Dens can be in rock crevices, living and dead hollow trees, logs, brush piles, abandoned buildings, and other manmade structures.

No species-specific surveys were conducted for this species. No CNDDB occurrence information is available, as CNDDB does not track ringtail observations (CDFW 2022). No potential natal dens were observed within the ESL, but potential den sites are present within the BSA.

Salmonids

Chinook Salmon–California Coastal ESU

The California Coastal (CC) Evolutionarily Significant Unit (ESU) (pop.17) of Eel River Chinook salmon (*Oncorhynchus tshawytscha*) is federally listed as Threatened. Chinook, or King salmon, are the largest species of Pacific salmon. Chinook salmon are anadromous[1] fish that usually enter the Eel River in early September and stage in the lower river until flows become high enough for them to migrate upstream over shallow riffles (NMFS 2016). The Eel River supports only the fall-run Chinook ecotype (Moyle 2002), which is federally Threatened only.

Eel River Chinook salmon typically spawn in November and December. The female digs nests or "redds" in gravel and lays eggs for the male to fertilize. The female continues to build the nest and lay and bury eggs until the process is completed. Males and females die soon after spawning. In late winter or spring, fry emerge from the gravel and begin their downstream migration to rear in the lower mainstem and estuary and gradually enter the ocean over the summer. This is known as the ocean-type life history. Mature adults return to the Eel River to spawn at 2-5 years of age.

[1]Fish born in fresh water that mature in the marine environment and return to fresh water to spawn.

Coho Salmon–Southern Oregon/Northern California Coast ESU

The Southern Oregon/Northern California Coast (SONCC) ESU (pop. 2) of coho salmon (*O. kisutch*) includes all naturally spawned populations of coho salmon in coastal streams between Cape Blanco, Oregon, and Punta Gorda, California, including fish produced by artificial propagation programs. SONCC coho are listed as Threatened at the federal and state levels.

Critical habitat for the SONCC coho salmon was designated in 1999 (64 Federal Register [FR] 24049) as encompassing accessible reaches of all rivers between the Elk River in Oregon and Mattole River in California.

Critical habitat includes all waterways, substrate, and adjacent riparian zones, but excludes 1) areas above specific dams, 2) areas above longstanding, naturally impassible barriers, and 3) tribal lands. The proposed Eel River Bridge Seismic Retrofit Project is within designated critical habitat for SONCC coho salmon.

In the freshwater environment, coho salmon typically associate with low gradient reaches of tributary streams. Coho usually enter the Eel River during late fall and their arrival in the upper reaches peaks in November and December; spawning may occur from November to February. Spawning is generally confined to the upper South Fork and its tributaries and tributaries of the mainstem Eel and Van Duzen rivers. Embryos hatch in 48 days at 48°F and 38 days at 51.3°F. Fry emerge from gravel 2-10 weeks later between March and July (peaks between March and May). California coho generally have a 3-year life cycle with half of their life spent in fresh water and the other half spent in the ocean (Moyle 2002). Coho salmon rearing areas include sloughs, side channels, estuaries, beaver ponds, low-gradient tributaries to large rivers, and large areas of slack water (Pacific Fishery Management Council 2014). Peak downstream migration in California generally occurs from April to early June.

Juvenile coho may rear during summer in areas of cool water inputs to the lower Eel River. However, the wide shallow channels in the project area exhibit high summer water temperatures beyond thermal tolerances of Pacific salmon. Coho salmon presence within the BSA during the summer is unlikely due to unsuitably high temperatures, even in areas of cooler water inputs where springs and tributaries may enter the river (Asarian et al., 2016).

Steelhead–Northern California DPS and Steelhead–Summer-run DPS

The Northern California (NC) Distinct Population Segment (DPS) (pop. 16) of steelhead (*O. mykiss irideus*) is a federally Threatened species. This DPS was listed as Threatened on June 7, 2000, and includes all winter and summer steelhead populations in California coastal river basins from Redwood Creek to the Gualala River. The steelhead half-pounder life history trait also occurs within the range of this DPS, specifically in the Mad River and Eel River. Half pounder steelhead are immature fish that return to fresh water after spending only a few months in the ocean. The Eel River is designated critical habitat for this DPS.

The Northern California summer-run steelhead subspecies (pop. 36) was listed as state Endangered under the California Endangered Species Act on June 16, 2021. Adult migration timing, distribution, and abundance differ between winter and summer-run steelhead ecotypes. Summer-run steelhead migrate up coastal streams and rivers during or soon after the final high flows of April, and the migration continues through June (Puckett 1975; Jones 1980 *in* Moyle 2002). In the Eel River system, summer-run steelhead migrate only to the upper reaches of the Middle Fork Eel and the Van Duzen rivers where they hold in deep pools during the summer months (Puckett 1975; Jones 1980). Spawning occurs from late December through April (Jones 1980), however the exact information on the duration, location, and extent of spawning is unknown (Puckett 1975; Jones 1980; Roelofs 1983 *in* Moyle 2002).

The migration may extend into July but then tapers off, presumably due to decreasing flows and increasing temperatures (Jones 1980). In contrast, NC winter steelhead usually enter the river from November to April and spawn between February and April.

Kannry et al. (2020) delineated spawning and rearing distributions of the two runs by collecting tissue samples from steelhead, primarily juveniles in the Van Duzen, Middle Fork and Upper Mainstem rivers, from June 2016 to October 2018. They found strong spatial segregation between the two runs. Though Moyle et al. (2008) generalizes that juvenile summer-run steelhead rear in streams lower in the watershed for 1-3 years, Kannry et al. (2020) found spatial segregation between winter-run and summer-run rearing juveniles which suggests summer-run juveniles remain high in the watershed until smoltification[2] and therefore are not anticipated to be in the action area during the in-water work period.

Summer-run steelhead enter the river sexually immature and seek out deep pools for refugia during maturation through the summer months. A small run of summer-run steelhead usually enters the river from March to the end of June. Depending on water temperature, steelhead eggs hatch in 3-4 weeks at 50-59°F (10-15°C) and emerge from the gravel 2-3 weeks later (Moyle 2002). Following yolk sac absorption, alevins emerge from the gravel and begin actively feeding. Juvenile steelhead rear in fresh water from one to four years, then migrate to the ocean as smolts. Leo Shapovalov (CDFG) examined scales of Middle Fork Eel River summer steelhead and concluded that they spend two years in fresh water and two years in the ocean; returning for their first spawning at age-4 (CDFG 1953 *in* CDFW 2021).

Salmonid Presence and Factors Influencing Salmonid Presence within the BSA

Fish presence information and impact assessments on salmonids in the Eel River and project BSA depend largely on previously collected data, general species life history accounts, literature reviews, and snorkel field observations.

Water temperature is one of the most important environmental influences on all life stages of Chinook and other salmonids and affects physiological processes and timing of life history events (Spence et al., 1996; CDFW 2010). Adult fall-run Chinook salmon tolerate water temperatures ranging from 51°F–67°F (10°C–19.4°C). Based on studies of steelhead and coho salmon, water temperatures from 50°F–55°F (10°C–12.8°C) have been recommended as the optimal thermal range for smoltification and emigration (Department of Water Resources [DWR] and USBR, 2000). Juvenile Chinook salmon prefer water temperatures less than 71.6°F (22°C). Juvenile steelhead may be present in the Mainstem Eel River within the action area year-round; however, they are expected only to persist in areas of cool water refuge (e.g., creek mouths or upwelling spring water) during summer (A. Renger, personal communication, September 2016). No known thermal refugia are located within the BSA.

[2] Smoltification is the process whereby juvenile salmonids physiologically adapt to the change from freshwater to marine environments.

Summertime water temperatures have been documented historically throughout the Eel River Basin and, in 1996, the Eel River was listed under 303(d) as impaired due to sediment and temperature. The Humboldt County Resource Conservation District (HCRCD) monitored temperatures during eight field seasons from 1996-2003 (CDFW 2010). The mainstem Eel River had the fewest locations with stream temperatures suitable for salmonids (10 out of 12 sites had unsuitable stream temperatures) compared to tributary streams, which was expected due to increased solar exposure and longer residence times in the mainstem. HCRCD recorded water temperatures of 73-77ºF on the Mainstem Eel River in 1996 and 1997 (CDFW 2010). These temperatures are potentially lethal for salmonids if cooler refuge areas are not available.

Juvenile salmonid spatial structure surveys were conducted on the Mainstem Eel River in the study area between June and October from 2013 to 2016 (Lam and Powers, 2016). No salmonids were observed in the project area during the surveys; this was attributed to the maximum daily temperatures exceeding 71.6°F (22°C) and thermal tolerances of salmonids. No spawning steelhead, redds, or other evidence of steelhead were observed within the survey area. No historical observations or surveys for spawning salmonids have been recorded within the project BSA.

Finally, in 2022, Caltrans biologists conducted snorkel surveys in the Eel River within the ESL to assess fish presence and document temporal trends of target species. The survey area was 800 feet (244 meters) downstream and 200 feet (61 meters) upstream of the Eel River Bridge. One juvenile Chinook salmon and 7 juvenile steelhead (age 1+) were observed on the June 9, 2022 survey. No salmonids were observed within the ESL in July. A summary of the survey results and survey location maps is provided below in Table 8 and Figures 13 and 14.

Table 8. Eel River Bridge Snorkel Survey Results

Date	Gauge	Temp	Survey Area	
June 9, 2022	1,325 cubic feet per second (CFS) and 10.3 feet	68.5ºF (20.27ºC)	The survey covered approximately 1,000 feet of the main Eel River, from 200 feet upstream from the northbound (NB) bridge to the first pool below the southbound (SB) bridge.	No salmonids were observed in habitats immediately adjacent to the northbound (NB) bridge. Over 1,000 juvenile and adult pikeminnow were observed by the divers throughout the survey reach, as shown in Figures 13 and 14. Seven juvenile (1+) steelhead, one juvenile Chinook salmon, and four unidentified juvenile salmonids were observed in the lower part of the survey reach, as depicted in the attached figure.
July 6, 2022	400 CFS and 9 feet	70.5ºF (21.38ºC)	Same as above. The wetted portion of the channel decreased substantially from the previous survey (1,325 CFS). Additionally, algae and other aquatic plants had increased in abundance and volume.	No salmonids were observed. Approximately 500 pikeminnow were observed approximately 500 feet downstream from the NB bridge. No pikeminnow were observed adjacent to the NB bridge piers or main channel. Two stickleback mortalities were observed along with four live three-spine stickleback along the left bank off-channel aquatic habitat disconnected from the main channel. Three large (>16") pikeminnow were observed in the center southbound (SB) bridge pier scour pool. GoPro video and still images of pikeminnow were collected. See attached figure for more information.

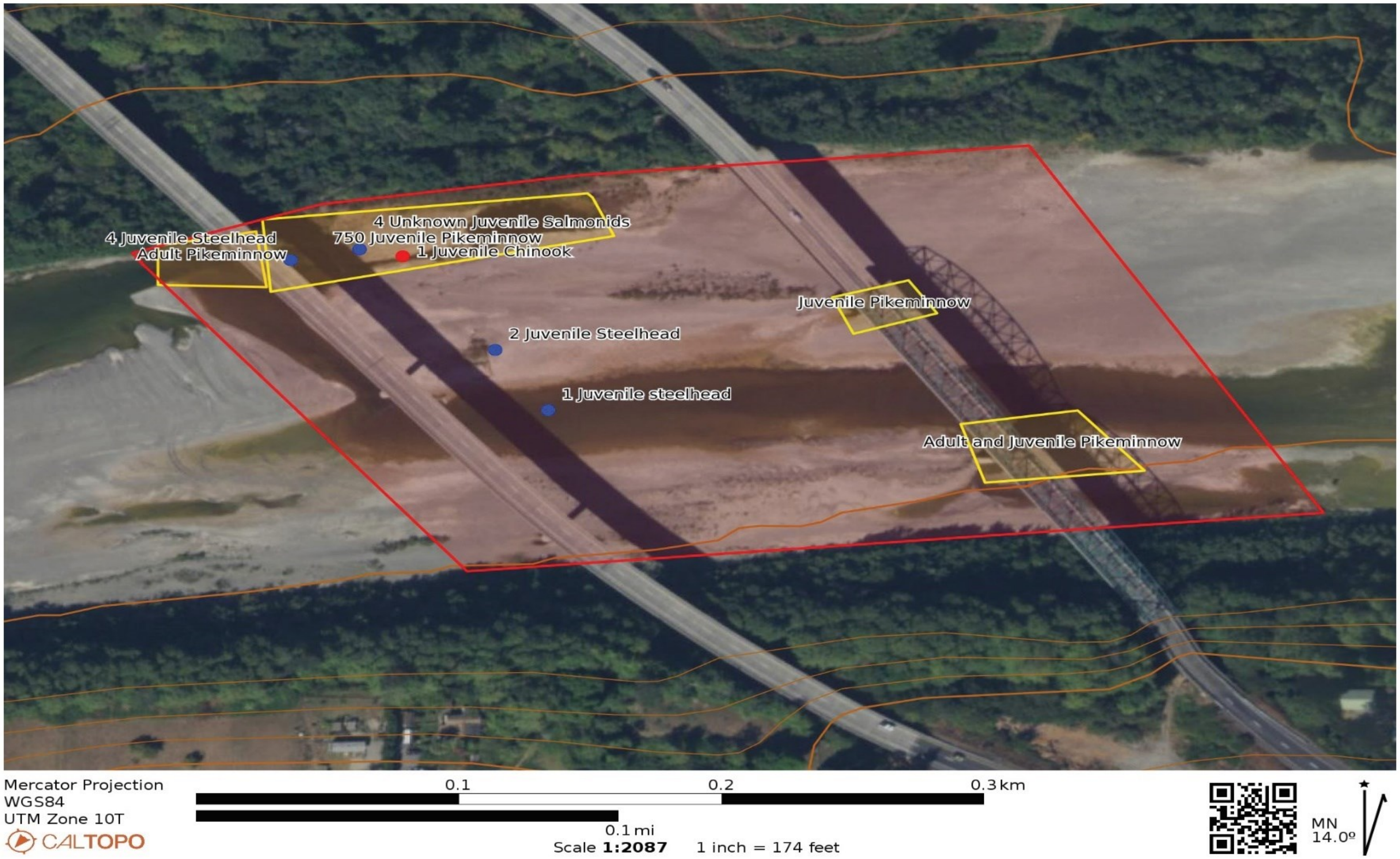

Figure 13. Snorkel Survey Area Map (June 9, 2022)

Figure 14. Snorkel Survey Area Map (July 6, 2022)

Pacific Salmon Essential Fish Habitat

Essential Fish Habitat (EFH) is defined by the Magnuson-Stevens Fishery Conservation and Management Act for federally managed species as "those waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity". The Mainstem Eel River supports EFH for species regulated under the federal Pacific Coast Salmon Fishery Management Plan.

EFH for the Pacific Coast Salmon Fishery means those waters and substrate necessary for salmon production needed to support a long-term sustainable salmon fishery and salmon contributions to a healthy ecosystem. Freshwater EFH for Chinook salmon and coho salmon consists of four major components: (1) spawning and incubation; (2) juvenile rearing; (3) juvenile migration corridors; and (4) adult migration corridors. EFH for Chinook also includes adult holding habitats. This section of the Mainstem Eel River serves only as a migration corridor for juveniles and adults for both species. There is no suitable spawning habitat in the project area. There is also no juvenile rearing in the project area because water temperatures in the summer exceed lethal levels for salmonids. The project would require consultation with NMFS for possible impacts to Essential Fish Habitat for Chinook and coho salmon.

Essential fish habitat for the Coastal Pelagic Species (CPS) Fishery includes four finfish (Pacific sardine, Pacific (chub) mackerel, northern anchovy, and jack mackerel), and market squid. CPS finfish generally live nearer to the surface than the sea floor and can move substantial distances throughout their lives. The definition of EFH for CPS is based on the temperature range where they are found, and on the geographic area where they occur at any life stage. This range varies widely according to ocean temperatures. The east-west boundary of CPS EFH includes all marine and estuary waters from the coasts of California, Oregon, and Washington to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10° and 26° centigrade. This portion of the Eel River is not considered Coastal Pelagic EFH.

Groundfish include many species of rockfish, sablefish, flatfish, and Pacific whiting that are often (but not exclusively) found on or near the ocean floor or other structures. Groundfish EFH includes all waters and substrate from the high tide line (including estuaries) to 3,500 meters (1,914 fathoms) in depth. This portion of the Eel River is not considered Groundfish EFH.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a state Threatened passerine. They forage in all seasons in pastures, dry seasonal pools, agricultural fields, scrub, and the borders of marshlands and grasslands. Of all passerines in North America, these blackbirds form the largest breeding colonies. In the 1930s one colony covered almost 59 acres and contained around 300,000 birds. Comprehensive surveys showed the statewide population of tricolored blackbirds went from an initial count of 395,000 birds in 2008 to 259,000 in 2011, to only 145,000 in 2014. Nesting takes place in native emergent marshes, silage and other grain fields, thickets of the introduced Himalayan blackberry, and other flooded and upland habitats. The tricolored blackbird prefers wetland and grassland habitats, although most native habitats have been lost.

Tricolors breed in the spring in dense colonies, engaging in “prospecting behavior” in which concentrations of birds will gather and suddenly fly to another place, changing locations frequently and then returning to potential nesting sites. These birds exhibit itinerant breeding, with individuals often moving after their first nesting attempts to breed again at a different location. Males mate with one to four females per year; they do not assist with nest construction or egg incubation but do help gather food and feed young. Within a colony, eggs are all laid in the same week, with each nest averaging three to four eggs. Eggs incubate for 11 or 12 days and young leave the nest about two weeks after hatching.

No species-specific surveys were performed for this species. There is one CNDDB record of tricolored blackbird within the twelve-quad search radius three miles north of the ESL. The eBird database lists a few observations of small numbers of documented observations of tricolored blackbird within two miles of the project area. Suitable nesting habitat is not present within the ESL or BSA.

Western Snowy Plover–Pacific Coast Distinct Population Segment

The Pacific Coast DPS of the western snowy plover (WSP) (*Charadrius nivosus nivosus*) is federally listed as threatened (58 FR 12864) and is a state SSC. The Pacific Coast DPS population is defined as those individuals that nest within 50 miles of the Pacific Ocean from southern Washington to southern Baja California, Mexico (USFWS 2007). Sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries above the high tide line are the main coastal habitats for nesting. Nests typically occur in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent. WSP also regularly nest on gravel bars along the Eel River in northern California (USFWS 2007). There is no critical habitat for WSP within the BSA.

There is potential suitable nesting habitat for WSP in the BSA, however this species is not expected to breed as far inland as the project area. WSP surveys were conducted during the breeding season in 2018 and 2021. No WSP were observed. The nearest occurrence records in CNDDB are from around Humboldt Bay, located approximately 13.5 miles northwest of the project site. eBird lists the closest breeding season observations approximately 8.3 miles west of the BSA along the Eel River at Fernbridge. Spotted sandpiper (*Actitis macularius)* have been observed nesting within the ESL, which indicates the substrate may be too wet to support nesting WSP.

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) is a state Fully Protected species in California. It is a common to uncommon, yearlong resident in coastal and valley lowlands and rarely found away from agricultural areas. The white-tailed kite preys mostly on voles and other small, diurnal mammals, and occasionally on birds, insects, reptiles, and amphibians. It forages in open grasslands, meadows, farmland, and over emergent wetlands (Hunter et al., 2005).

Breeding season is generally from February to October, with peak from May to August. White-tailed kites breed in lowland grasslands, agricultural fields, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. These kites typically nest in the upper third of trees that may be 10–160 feet tall. These can be open-country trees growing in isolation, or at the edge of or within a forest. White-tailed kites usually produce a single brood each year and occasionally produce two broods.

This species has been observed within the BSA during the breeding season foraging over the adjacent farmland. No CNDDB detections have been recorded within the twelve-quad search radius. The eBird database contain numerous occurrences of white-tailed kites within two miles of the project area. Suitable foraging habitat is present within the BSA but not within the ESL.

Yellow-billed Cuckoo–Western Distinct Population Segment

The yellow-billed cuckoo (YBCU) (*Coccyzus americanus occidentalis*)–Western U.S. DPS is federally listed as Threatened and state listed as Endangered. Compared to other neotropical migrants, YBCU has an exceptionally short breeding cycle, and the breeding period is much later in the season. Cuckoos arrive in their breeding grounds in the Western U.S. in May and June (Franzreb and Laymon, 1993). Nesting usually occurs between late June and late July but can begin as early as late May and continue until late September (Hughes 1999). They build well-concealed cup nests in dense vegetation, lay 2-5 eggs, with incubation of eggs and feeding of chicks shared by both parents (Hughes 1999). The incubation period is 9 to 11 days, and young leave the nest at 7 to 9 days old. They may nest at more than one location in a year. After nesting, cuckoos migrate to Central and South America to overwinter (Hughes 1999). Preferred prey includes a variety of large insects, especially caterpillars, katydids, grasshoppers, and cicadas, and sometimes small frogs and lizards.

Critical habitat for YBCU was proposed by the USFWS in 2014 (79 FR 48547). The proposed critical habitat to the project site is Unit 1, located along the Eel River in Humboldt County, California. However, this unit was removed from the final designation and currently there is no YBCU critical habitat within or adjacent to the project area.

In California, where it has been listed as endangered by the State since 1972, YBCU occurs regularly along the lower Colorado River, at the south fork of the Kern River, and along the upper Sacramento River, although recent information indicates startlingly low and declining numbers at the latter (Dettling et al., 2015). In coastal northern California, YBCU have occurred during the breeding season intermittently over the past 15 years, and there is some indication that YBCU occurrences in the region may be correlated with presence of tent caterpillars (McAllister and Falxa, 2010.). On the Eel River system, where this study occurred, one or more YBCU were observed in 8 of 14 survey years from 2000–2013 (McAllister and Falxa, 2016). During surveys from 2005 through 2009 from the mouth of the Eel River to approximately 15 miles upstream, cuckoos were detected and breeding was probable during two of those years (McAllister and Falxa, 2010).

Two habitat models for cuckoo have been developed. Gaines and Laymon (1984) concluded that willow-cottonwood habitat of any age with high humidity and a habitat breadth of 325 feet (100 meters) was necessary for suitable cuckoo habitat. Additional research based on occupancy rates allowed for refinement of these requirements. Laymon and Halterman (1989) concluded that sites greater than 200 acres in extent and wider than 1,969 feet (600 meters) were optimal, sites 101-200 acres in extent and wider than 650 feet (200 meters) were suitable, sites 50-100 acres in extent and 325-650 feet (100-200 meters) in width were marginal, and sites smaller than 38 acres in extent and less than 325 feet (100 meters) in width were unsuitable. Also, the shape of the site plays a role in suitability, as narrow habitat areas (strips) are more prone to nest predation and other adverse effects than areas that are more circular in shape (Laymon and Halterman, 1989). These habitat parameters do not include assessments of areas along the north coast of California where narrow riparian strips are the norm (Warner and Hendrix, 1984).

In a study regarding call detections from North Carolina, Goodwin and Shriver (2010) found that cuckoos are 10 times less likely to use noisy plots than quiet plots. They explain that traffic noise occurs within a similar range to cuckoo calls (< 3 kHz) and could mask or prevent effective communication between mating individuals. Therefore, highway noise may deter use of cuckoo habitat close to the highway, making these areas less suitable than habitat farther from this consistent source of noise and light.

Within the survey area, the YBCU habitat is linearly unbroken on both banks of the river, and ranges from approximately 150 feet to 500 feet deep. The riparian habitat on the north side of the river, with its south-facing aspect, is of higher quality for YBCU than the south side and supports more extensive and dense willow stands. Canopy cover was estimated to be around 75% in the survey area. Ambient noise levels associated with the traffic are high.

The closest CNDDB occurrence is from 2013, along the Salt River in the vicinity of Dillon Road Bridge northwest of Ferndale, approximately 9.9 miles northwest of the project. The closest eBird detections (in 2005) are along the Eel River near Drake gravel bar, approximately 5.5 miles to the northeast of the project.

Caltrans received technical assistance from USFWS (Greg Schmidt pers. comm. 2016, 2017, 2021, and 2022) regarding YBUC. YBCU recovery permit-holder Sean McAllister and Caltrans biologists performed YBCU surveys in the summer of 2018. With approval from USFWS, Caltrans biologists conducted YBCU surveys again in 2022. Survey methods adhered to protocol guidelines as described by Halterman et al. (2015). No YBCU were detected during surveys. Given that there were no YBCU detections during this protocol-level survey, YBCU are not expected to be present during construction.

INVASIVE SPECIES

The Eel River watershed contains several invasive plant species that adversely affect ecologic functions. Some of the species that most threaten native ecosystem function and structure include giant reed (*Arundo donax*), yellow star-thistle (*Centaurea solstitialis*), jubata grass and pampas grass (*Cortaderia spp.),* Scotch broom, (*Cytisus scoparius*), French broom (*Genista monspessulana*), reed canary grass (*Phalaris arundinacea*), water primrose (*Ludwigia sp*.), and Spanish broom (*Spartium junceum*). Of these species, jubata grass, pampas grass, Scotch broom and French broom were observed within the project limits. The invasive purple loosestrife (*Lythrum salicaria*) was also found on the Eel River bar.

Invasive bird species identified in or adjacent to the ESL include the house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), and Eurasian collared dove (*Streptopelia decaocto*). These three species are known to compete with native species for resources and are typically associated with human disturbance. House sparrows readily out-compete native species for nesting sites by evicting other nesting birds, destroying their eggs, killing nestlings, and sometimes even killing the incubating female. Adding to the competition, once a male house sparrow establishes a territory, he remains there year-round and starts defending that territory early in the season, often preventing later-arriving species (e.g., bluebirds and swallows) from nesting. The starling is currently threatening at least two state species of special concern: the purple martin (*Progne subis*) and the Gila woodpecker (*Melanerpes uropygialis*) (Shuford and Gardali, 2008). It may pose problems for other cavity-nesters as its population continues to increase.

Brown-headed cowbirds (*Molothrus ater*), a native North American species but invasive to California, were also observed around the staging areas and and along the riparian corridor of the river. The expansion of agriculture in California has resulted in a phenomenal increase in cowbird populations and remarkable range expansions. Brown-headed cowbirds parasitize the nests of more than 220 bird species in their range. Each cowbird can lay up to 30 eggs per season and usually lay 1 or 2 (or occasionally more) eggs in each host nest. When parasitizing nests, they often remove the egg(s) of the host bird. Nest parasitism lowers the reproductive success of host birds and has led to population declines in several bird species. Currently, cowbirds are threatening the Bell's vireo (*Vireo bellii*), willow flycatcher, yellow warbler, common yellowthroat (*Geothlypis trichas*), warbling vireo, yellow-breasted chat (*Icteria virens*), and possibly black-tailed gnatcatcher (*Polioptila melanura*), blue-gray gnatcatcher (*Polioptila caerulea*), and gray vireo (*Vireo vicinior*) (Shuford and Gardali, 2008). California's vireos, warblers, and small flycatchers may be jeopardized if the cowbird population continues to increase and expand its range.

The Sacramento pikeminnow is a large piscivorous cyprinid (minnow) native to the Sacramento-San Joaquin drainage and several smaller coastal drainages in California. Pikeminnow were introduced into the Eel River system in Pillsbury Lake in 1979. Pikeminnow have since become widespread throughout the Eel River Basin (Brown and Moyle, 1997; CDFW 2010). Caltrans biologists observed nearly 1,000 pikeminnow within the ESL during snorkel surveys in June 2022. Adult pikeminnow are known to consume native salmonid species and native amphibians.

The non-native American bullfrog (*Lithobates catesbeianus*) is probably responsible for some of the decline of many native species, including frogs, turtles, snakes, and waterfowl, which cannot compete with it or fall prey to it. Since bullfrogs evolved in habitats with a diverse number of predatory fish, unlike many California frog species, they have a competitive advantage over native amphibians in areas where non-native fish are present. Bullfrog tadpoles are noxious to many species of fish, which greatly increases their chance of survival. Bullfrogs also do well in areas disturbed by humans and in artificial wetland habitats such as farm and golf course ponds, unlike most native California frogs.

Discussion of CEQA Environmental Checklist Question 2.4a)—Biological Resources

a) 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/NMFS?

PLANT SPECIES

The CNPS inventory and CNDDB indicate several rare plants in the project region. Floristic surveys did not detect special status plant species within the Environmental Study Limits (ESL). Based on seasonally appropriate floristic surveys in 2016, 2020, and 2021 indicating no special status species presence, Caltrans has determined the project would have "*No Impact*" to special status plant species.

Western Lily

Western lily has not been documented within or adjacent to the project area, nor was it observed during floristic surveys. Given this, Caltrans has determined the project would have "*No Impact*" on this species.

Per FESA, Caltrans has determined the project would have "*No Effect"* on western lily.

Per CESA, given the project would not directly harm this species, this project would not result in "*Take*" of western lily.

ANIMAL SPECIES

Bat Species

No known maternity roosts or other colonial night roosts would be removed or altered during project activities. All vegetation removal and bridge exclusion materials would occur outside of the maternity season to ensure no impacts would occur to any potentially unidentified maternity roosts. Impacts to bat species are not anticipated given the preparation of a Bat Exclusion Plan prior to construction, seasonal timing of impacts, and the standard measures to avoid disturbing active colonies. The replacement of the existing steel bridge with a concrete box girder deck would increase the availability of suitable roosting habitat.

Given there would be no potential bat colonies or individuals impacted by this project, Caltrans has determined the project would have "*No Impact*" on bat species or their habitat.

Foothill Yellow-legged Frog

Adult FYLF have the potential to be within the BSA during construction activities. Field surveys found no egg masses within the ESL or within 300 feet of any proposed construction or access road. Given the amount of habitat affected, the short duration/intermittent nature of the work, and implementation of standard measures (such as species relocation) to reduce project impacts, the proposed project is not likely to result in substantial population-level effects to Foothill yellow-legged frog. There are no other known projects located within the project vicinity that have the potential to negatively affect FYLF. Given this, Caltrans has determined the project would have a "*Less Than Significant Impact*" on FYLF populations.

Northern Red-legged Frog

Based on the timing of proposed in-water work, temporary nature of construction, standard measures, and the abundance of suitable habitat in the project vicinity to which frogs could relocate, Caltrans has determined the project would have a "*Less Than Significant Impact"* on Northern red-legged frog populations or their habitat. Additionally, as a standard measure, if any NRLF are encountered by the biological monitor, they would be relocated outside the project limits.

Monarch Butterfly

The proposed project anticipates vegetation removal and access road creation for construction. As such, the proposed project could potentially result in short-term direct and indirect construction impacts to monarch butterflies if they congregate within the project site and/or immediate vicinity, and construction activities occur during overwinter season (generally October to March). Based on the distance from last known occurrences in the region, poor quality of habitat on-site, and precipitous decline of the species in general, it is highly unlikely that monarch butterflies would be present during construction. Therefore, Caltrans has determined the project would have "*No Impact*" on the monarch butterfly.

Obscure Bumble Bee and Western Bumble Bee

Most of the ground disturbance from the project would occur in areas that are seasonally flooded during the hibernation period of bumble bees. Areas that are not seasonally flooded are routinely disturbed by activity along the existing access road, which is cleared and maintained by locals who use the road for river access. Because the potential nesting areas are inundated with water during the hibernation period or routinely mowed and disturbed, bumble bees are not anticipated to be overwintering in areas proposed for project access.

Given that potential ground disturbances would not likely impact bumble bee habitat and all vegetated areas would be restored, Caltrans has determined the project would have "*No Impact*" on the obscure bumble bee or Western bumble bee or their habitats.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of obscure and Western bumble bee.

Migratory Bird Species

No nests would be removed or altered during project activities. Small shrub removal and work near an active nest could affect nesting birds. Pre-construction nesting bird surveys would be performed to identify potential threats to nesting birds from project activities and to provide opportunity to develop appropriate avoidance measures.

Given the seasonal timing of vegetation removal, bird exclusion prior to construction, and the standard measures to avoid disturbing active nests, Caltrans has determined the project would have "*No Impact*" on migratory bird species or their habitat.

Ringtail

No potential natal dens were observed within the ESL, however potential den sites are present within the BSA. The presence of a highly traveled roadway and occupied human structures in the proximity of the BSA are likely to preclude ringtail from denning in the project area. Given that no potential dens would be removed by the project, Caltrans has determined the project would have "*No Impact*" on ringtail or its habitat.

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 access road locations would be surveyed for signs of nesting before they are graded and, if present, would be marked for avoidance under the Standard Measures and Best Management Practices set forth in Section 1.4. Given this, Caltrans has determined the project would have "*No Impact*" on Western pond turtle or its habitat.

Pacific Lamprey and Western Brook Lamprey

The juvenile life stage of these species (ammocoetes) spend most of their time burrowed in stream substrates, making them particularly susceptible to activities that involve excavation, stranding (due to dewatering), or accidental contaminant spills, potentially affecting many different age classes that tend to concentrate in the same areas due to habitat preference (USFWS 2010).

Dewatering and stream flow management for work in the Eel River could cause a rapid fluctuation in the water level and strand lamprey ammocoetes in the substrate. Clear water diversion could also impede upstream migrations by adult lamprey and downstream movement of ammocoetes and macrophthalmia. Excavation of substrate within the dewatered water channel for retrofitting of the bridge pier could affect all age classes of ammocoetes if present. Contaminants from accidental spills could also harm or kill ammocoetes, which are thought to have a higher propensity for accumulating toxins given they spend three to seven years filter feeding.

There have been no studies to determine responses of lamprey to sound, such as from pile driving, but lamprey do not have the typical hearing structures of other fish. Lamprey, as other vertebrates, may use their auditory sense to learn about their environment, but their behavioral repertoire is generally limited, and it may be possible that sound is not relevant. Ammocoetes are partially buried in the substrate, which dampens vibration and noise. As a result, at least some life stages of lamprey may be less susceptible to injury from impulsive sound waves than other fish species.

Given the small amount of habitat affected, the short duration/intermittent nature of the work, and the anticipated low number of fish potentially present (if any) in relation to population size within the Eel River, Caltrans has determined the project would have a "*Less Than Significant Impact*" on Pacific lamprey and Western brook lamprey or their habitat.

Pacific Fisher–West Coast DPS-Northern California ESU

Given the habitat within the ESL does not contain suitable denning sites or day resting sites, it is unlikely that fishers are present within the ESL. Additionally, the proximity to a heavily traveled roadway and human habitation likely deter fisher from utilizing the ESL. No trees would be removed during the critical denning period (March 1st through July 31st). Given this, Caltrans has determined the project would have "*No Impact*" on Pacific fisher or their habitat.

Sonoma Tree Vole and White-Footed Vole

Given there would be no nest structure removal associated with this project, Caltrans has determined the project would have "*No Impact*" on Sonoma tree or white-footed vole or their habitat.

Vaux's Swift

Given there would be no vegetation or nest structure removal during the nesting season, Caltrans has determined the project would have "*No Impact*" on Vaux's swift or their habitat.

Yellow-breasted Chat

No nests would be removed or altered during project activities; however, small shrub removal and work near an active nest could affect nesting birds. Pre-construction nesting bird surveys would be performed to identify potential threats to nesting birds from project activities and provide opportunity to develop appropriate avoidance measures. Impacts to yellow-breasted chat are not anticipated given the minimal amount of vegetation to be removed, temporary nature of the project, and the standard measures (Section 1.4) to avoid disturbing active nests.

Given there would be no vegetation or nest structure removal during the nesting season associated with this project, Caltrans has determined the project would have "*No Impact*" on yellow-breasted chats or their habitat.

Yellow Warbler

No nests would be removed or altered during project activities; however, small shrub removal and work in proximity to an active nest could affect nesting birds. Pre-construction nesting bird surveys would be performed to identify potential threats to nesting birds from project activities and provide opportunity to develop appropriate avoidance measures. Impacts to yellow warbler are not anticipated given the minimal amount of vegetation to be removed, temporary nature of the project, and the standard measures (Section 1.4) to avoid disturbing active nests.

Given there would be no vegetation or nest structure removal during the nesting season associated with this project, Caltrans has determined the project would have "*No Impact*" on yellow warblers or their habitat.

THREATENED AND ENDANGERED SPECIES

American Peregrine Falcon

Given there would be no potential nest removal associated with this project, Caltrans has determined the project would have "*No Impact*" on American peregrine falcons or their habitat.

Per Fish and Game CESA (Code Section 3511), the project would have no *"Take"* of peregrine falcon.

Bald Eagle

Given, there would be no nest or nest structure removal associated with this project, and as there are no nests in range of the project where noise disturbance could potentially impact bald eagles, Caltrans has determined the project would have "*No Impact*" on bald eagles or their habitat.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of bald eagles.

Bank Swallow

Given there would be no nest removal associated with this project, Caltrans has determined the project would have "*No Impact*" on bank swallows or their habitat.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of bank swallows.

Green Sturgeon

Per FESA, given that neither green sturgeon nor their habitat is likely present within the BSA, Caltrans has determined the project would have "*No Effect*" on green sturgeon.

Little Willow Flycatcher

Because there would be no suitable habitat or nest structure removal within the nesting season, Caltrans has determined the project would have "*No Impact*" on little willow flycatcher or their habitat.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of little willow flycatcher.

Northern Spotted Owl

Given that the nearest positive observation is approximately 0.31 mile to the northeast of project activities, and the nearest activity center is over 1 mile from the ESL, nearby suitable habitat would not be affected by elevated sound levels from construction. The marginal habitat on the border of the BSA is also screened from the project area by an active industrial site which further buffers sound and any visual disturbances. Given this, Caltrans has determined the project would have "*No Impact*" on the northern spotted owl.

Per FESA, Caltrans has determined the project would have "*No Effect*" on northern spotted owl.

Per CESA, given the project would not directly harm this species, this project would not result in "*Take*" of northern spotted owl.

Ringtail

Given that the project would not remove ringtail denning or nesting habitat and the BSA contains a highly traveled roadway and occupied human structures that likely preclude ringtail from denning in the project area, Caltrans has determined the project would have "*No Impact*" on ringtail or their habitat.

Per CESA, given the project would not directly harm this species, the project would not result in *"Take"* of ringtail.

Salmonids

This section describes and evaluates the potential for impacts of proposed seismic retrofit, bridge portion replacement and demolition activities on fish and fish habitat related to water quality degradation, general construction noise and visual disturbance, direct injury from in-water construction activities (installation of stream diversions) and fish capture/relocation, effects on fish passage, underwater noise during pile driving and hoe-ram activities, and habitat impacts.

The Mainstem Eel River within the project area is a migratory corridor for adult salmonids migrating to upstream spawning areas in the Eel River basin and is used by juveniles for rearing and passage during their seaward migration and seasonal, within-stream movements. Restricting in-water construction activities between June 15 and October 15 avoids the primary migration periods of adult Chinook salmon, coho salmon, and steelhead. This period also avoids the most sensitive life stages (spawning, egg incubation, alevin, newly emerged fry) and the peak migration periods of smolting juveniles (March through May). As previously described, movement of juvenile salmonids has been documented in spring and early summer. However, juvenile Chinook have been observed in the project area in early June and thus may be subject to exposure from construction activities during each of the two potential in-water construction seasons—June 15 to October 15 of each construction year.

If salmonids are present during construction, several activities associated with the proposed project could potentially affect salmonids occupying the Eel River. These include clear water diversion and associated fish relocation, noise and visual disturbance, and water quality impacts, as described below. Additionally, vegetation removal, noise and visual disturbance, potential dewatering, and/or water quality impacts could temporarily affect designated critical habitat.

Water Temperature

Juvenile steelhead are present in Eel River year-round; however, they are expected only to persist in areas of cool water refuge (e.g., creek mouths or upwelling spring water) during summer (A. Renger, personal communication, September 2016). No known thermal refugia are located within the ESL.

Water temperature is one of the most important environmental influences on salmonids at all life stages, affecting physiological processes and timing of life history events (Spence et al. 1996; CDFW 2010). Based on studies of steelhead and coho salmon, water temperature ranging from 50°F–55°F (10°C– 12.8°C) has been recommended as the optimal thermal range for smoltification and emigration (DWR et al., 2000). According to the CDFW, temperatures of 70ºF (21.1ºC) have been reported as being lethal to adults (CDFW 2010). No salmonids were observed in the project area during juvenile salmonid spatial structure surveys conducted on the Mainstem Eel River in the study area between June and October from 2013 to 2016 (Lam and Powers, 2016). This was attributed to the maximum daily temperatures exceeding 71.6°F (22°C) and thermal tolerances of salmonids.

Salmonids are not anticipated to be present in the action area's shallow and wide riffles and runs, particularly during base flow and elevated water temperature conditions during the drilling work window from June 15 to October 15. If listed anadromous salmonids are present in the project area, potential impacts from noise and visual disturbance would likely be minor and short term, and unlikely to result in injury or mortality of fish.

Caltrans biologists deployed a temperature data logger in the scour pool associated with the existing bridge Pier 5 (Figure 15) (Caltrans 2022a). The scour pool was observed to provide the coolest temperature within the BSA. Temperatures within the BSA were determined to be above stressful and lethal limits for salmonid species during the anticipated in-river work period from June 15 to October 15.

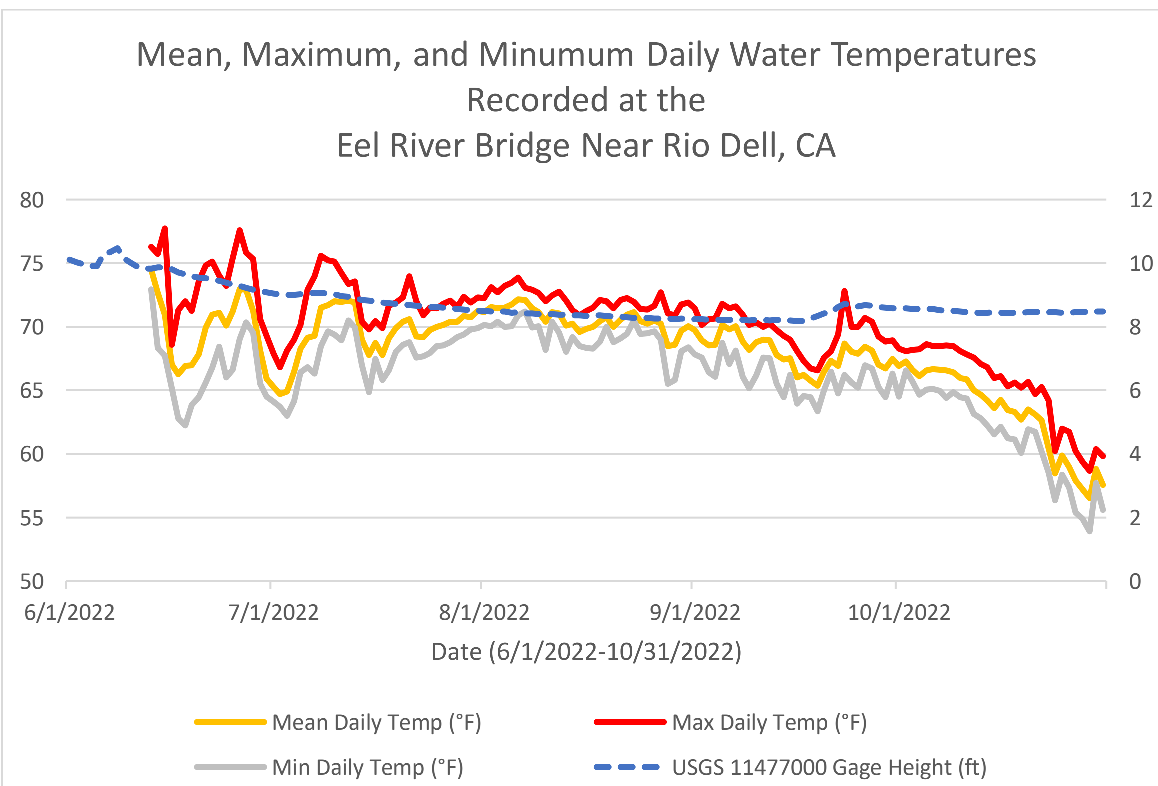

Figure 15. Recorded Stream Temperatures within Action Area (2022)

Noise and Visual Disturbance

On June 12, 2008, the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service, California, Oregon, and Washington Departments of Transportation, California Department of Fish and Wildlife, and the U.S. Federal Highway Administration generally agreed in principle to interim criteria to protect fish from pile driving activities (Caltrans 2022b). Table 9 summarizes these criteria.

Table 9. Adopted Impact Pile Driving Acoustic Criteria for Fish

Interim Criteria for Injury	Agreement in Principle
Peak	206 dB for all size of fish
Cumulative Sound Exposure Level (SEL)	187 dB for fish size of two grams or greater 183 dB for fish size of less than two grams

Source: Fisheries Hydroacoustic Working Group 2008

Caltrans estimated the worst-case scenario noise levels from pile driving in water based on the assumption that water would be deep enough for sound to propagate (Caltrans 2022b). Stream flow rates affect the physical constrains on the size of the estimated impact zones. During higher flows, the distances to the theoretical 150 dB (behavioral) thresholds would most likely be limited to 1.74 miles (2,800 meters) downstream and 1.3 miles (2,100 meters) upstream due to bends in the river and presence of gravel bars in the river channel. If flows are lower during the construction season, the distances to the thresholds would most likely be limited to 0.31 mile (500 meters) downstream and 0.81 mile (1,300 meters) upstream due to bends in the river and presence of gravel bars in the river channel. These portions of the BSA would be used to determine the action area during agency consultation.

There were no projects in the Caltrans Compendium of Pile Driving Sound Data that included 36-inch CISS piles or the 12-foot casings for CIDH piles that matched expected site conditions at the Eel River Bridge Project. Information from the Richmond-San Rafael Bridge, Russian River Bridge, and Schuyler Heim Bridge projects was chosen to assess the noise levels produced from pile driving these sizes of piles.

Impact pile driving activity could result in peak sound pressure levels and cumulative sound exposure levels (SEL) approaching or exceeding the injury thresholds described in Table 9. Caltrans presumes a sound attenuation system would be utilized for all in-water impact pile driving and would provide a minimum reduction of 5 dB. Common sound attenuation methods include bubble curtains, confined bubble curtains, dewatered isolation casings, and dewatered cofferdams.

Negative effects to listed salmonids and other fish from general construction noise and visual disturbance would be minimized through implementation of the Standard Measures and Best Management Practices identified in Section 1.4. All in-stream work and equipment use, and other work activity below the OHWM, would be restricted to the period when anadromous fish species presence is lowest (June 15–October 15).

Exposure to individual fish is expected to be minimal, and those fish that are exposed could readily relocate to nearby suitable habitat upstream or downstream of the project site. Upon cessation of work, it is anticipated that fish movement and access would return to pre-construction conditions. The project would not result in long term changes to the water chemistry or physical characteristics (e.g., substrate and flow) of the watercourses after construction is complete, disturbed areas have been stabilized, and vegetation is re-established.

Water Quality Impacts

Pollutants in highway runoff, or from construction operations, can result in the mobilization of sediment both during and after construction. Wetland fill encroachment, new impervious surface, and the removal of wetland and riparian vegetation all have the potential to impact water quality within the project area. However, as described below, the project is not anticipated to conflict with water quality standards or water quality objectives, or affect the beneficial uses of downstream receiving waters (Caltrans 2022c).

Turbidity and Sedimentation

Increases in suspended sediment or turbidity can affect water quality, which in turn can affect fish health and behavior. Salmonids typically avoid areas of higher suspended sediment, which means they displace themselves from their preferred habitat to seek areas with less suspended sediment. Fish unable to avoid suspended sediment can experience negative effects; the severity of which increases as a function of the sediment concentration and exposure time (Newcombe and Jensen, 1996; Bash et al., 2001). Suspended sediment and turbidity generally do not acutely affect aquatic organisms unless they reach extremely high levels. At levels reaching 25 mg/L, suspended sediment can adversely affect the physiology and behavior of aquatic organisms and may suppress photosynthetic activity at the base of food webs, affecting aquatic organisms either directly or indirectly (Alabaster and Lloyd, 1980). While benthic communities can normally withstand short-term increases in suspended sediment, small increases over longer or continuous durations can affect the quantity and composition of aquatic invertebrates (i.e., prey species) and reduce the production of aquatic plants (Robertson et al., 2006).

The proposed project is not likely to cause suspended sediment and turbidity that would result in acute effects on individual salmonids with implementation of the Standard Measures and Best Management Practices identified in Section 1.4. These measures also include scheduling work windows that avoid the most vulnerable periods of adult and smolt migration and coincide with the period when juvenile salmonid populations are lowest.

Pollutants Associated with Stormwater Runoff and Accidental Spills

During construction, a risk would exist for accidental release of oil, grease, wash water, solvents, drilling fluid, or other construction materials into the Eel River. However, with implementation of the standard water quality measures, which include provisions for the proper handling, storage and disposal of contaminants, localized degradation of water quality from construction related spills is unlikely. Standard Measures and Best Management Practices are expected to sufficiently restrict any discharged pollutants to the immediate area; therefore, chemical contamination of the project watercourses because of construction operations is unlikely to occur and the potential effects to salmonids are discountable. There would not be a substantial increase in pollutant loading from roadway runoff due to traffic over the existing condition as the proposed project is not intended to generate an increase in traffic volume.

Contaminants generated by traffic, pavement materials, and airborne particles that settle may be carried by stormwater runoff into receiving waters, which may be taken up by aquatic organisms. Accidental spills of hazardous material, such as those caused by highway-related traffic accidents or equipment refueling, maintenance, and fluid leakage near watercourses, also pose a risk of contamination to aquatic habitat, depending on the type and quantity of the material spilled. Exposure to stormwater pollutants can cause reduced growth, impaired migratory ability, and impaired reproduction in salmonids and other fishes. Contaminants in runoff can also be taken in by prey species, reducing prey availability or providing an indirect source of toxicity. The extent and severity of these effects vary depending on the extent, timing, and duration of the exposure; ambient water quality conditions; the species and life history stage exposed; pollutant toxicity; and synergistic effects with other contaminants (U.S. EPA 1980).

Clear Water Diversion and Fish Relocation

The temporary clear water diversion system for construction may require fish capture and relocation using electrofishing. Electrofishing could result in injury or mortality of any CC Chinook salmon, SONCC coho salmon, and NC DPS steelhead that are present in the river. Up to 3% mortality has been reported during electrofishing operations (CDFW 2015). The diversion itself would temporarily restrict the movement of rearing juvenile salmonids, potentially making them more vulnerable to stress and predation.

The timing of the diversion would avoid the late fall-winter migration period for adult salmonids that may pass through the project area to spawn, and most of the spring-early summer smolt out-migration. There is a risk of a small number of juvenile salmonids being present within the BSA and Hydroacoustic Action Area that could potentially be harmed by relocation. An Aquatic Species Relocation Plan, or equivalent, would be prepared by a qualified biologist which would include provisions for pre-construction surveys and the appropriate methods or protocols to relocate any species found.

Wetland and Riparian Habitat Removal

The project is not anticipated to impact the functional values of existing riparian habitat for salmonids. The project would not result in long term changes to the water chemistry or physical characteristics (e.g., substrate and flow) of the river after construction is complete. Therefore, no long-term impacts on fish or other aquatic organisms are anticipated.

Conclusion for Chinook Salmon–California Coastal ESU

Based on the information provided above, Caltrans has determined the proposed project would have a "*Less Than A Significant Impact*" on Chinook salmon.

Per FESA, Caltrans has also determined the proposed project *may affect, is likely to adversely affect* Chinook salmon–California Coastal ESU. The proposed project *may affect, is not likely to adversely affect* Chinook salmon critical habitat.

Conclusion for Coho Salmon–Southern Oregon/Northern California Coast ESU

Based on the information provided above, Caltrans has determined the proposed project would have a "*Less Than A Significant Impact"* on coho salmon.

Per FESA, Caltrans has also determined the proposed project *may affect, is not likely to adversely affect* coho salmon–SONCC ESU. The proposed project *may affect, is not likely to adversely* affect coho salmon critical habitat. Formal consultation with NMFS would be utilized to address potential effects to SONCC coho salmon and its associated critical habitat.

Per CESA, given the project is not anticipated to directly harm coho salmon, this project would have no *"Take"* of coho salmon.

Conclusion for Steelhead–Northern California DPS and Steelhead–Summer-run DPS

Based on the information provided above, Caltrans has determined the proposed project would have a "*Less Than Significant Impact*" on summer-run steelhead.

Per FESA, Caltrans has also determined the proposed project *may affect, is likely to adversely affect* steelhead–Northern California DPS. The proposed action *may affect, is not likely to adversely affect* steelhead–Northern California DPS critical habitat. Formal consultation with NMFS would be utilized to address potential effects to steelhead-Northern California DPS and their associated critical habitat.

Per CESA, given the project is not anticipated to directly harm NC summer-run steelhead, this project would have no "*Take*" of NC summer-run steelhead.

Pacific Salmon Essential Fish Habitat

The project is not anticipated to result in a measurable, permanent decrease in the quality of the rearing habitat or migration corridors for EFH species, or have long-term adverse modifications to waters, substrates or food production and availability. However, given that the project would conduct work within the EFH, Caltrans has determined the proposed project *may adversely affect* EFH for Pacific salmon (Chinook and coho salmon).

Tricolored Blackbird

Given the project would not remove nest structure or nesting habitat. Caltrans has determined the project would have "*No Impact*" on tricolored blackbird or their habitat.

Per CESA, given the project would not directly harm this species, the project would not result in *"Take"* of tricolored blackbird.

Western Snowy Plover–Pacific Coast Distinct Population Segment

Given the lack of species presence during surveys and marginal habitat within the ESL, Caltrans has determined the project would have "*No Impact*" on western snowy plover or their habitat.

Per FESA, Caltrans has determined the project would have "*No Effect"* on western snowy plover.

White-tailed Kite

Given that no nests would be removed or altered by the project, Caltrans has determined the project would have "*No Impact*" on white-tailed kite or its habitat.

Per CESA, given the project would not directly harm this species, Caltrans has determined the project would not result in *"Take"* of white-tailed kite.

Yellow-billed Cuckoo–Western Distinct Population Segment

Given there would be no vegetation or nest structure removal during the nesting season associated with this project, Caltrans has determined the project would have "*No Impact*" on western yellow-billed cuckoo (YBCU) or their habitat.

Per FESA, Caltrans has determined the project would have "*No Effect"* on YBCU.

Per CESA, given the project would not directly harm this species, Caltrans has determined the project would have no *"Take"* of YBCU.

INVASIVE SPECIES

A large proportion of the ESL is adjacent to U.S. 101 and supports many non-native and invasive plant species. Many invasive plant species are disturbance related and could recolonize or increase population sizes through the creation of new disturbed areas for a temporary period. During the project, invasive species effects would be avoided and minimized through implementation of the project Standard Measures and Best Management Practices identified in Section 1.4.

Several age classes of the northern pikeminnow, including adult known to prey on juvenile salmonids, were observed throughout the wetted portions of the Eel River channel within the ESL (Figures 13 and 14). The project would not result in permanent or temporary stream habitat modifications that would influence pikeminnow proliferation.

Implementation of the Standard Measures and Best Management Practices listed in Section 1.4 would ensure invasive species would not proliferate. Given this, Caltrans has determined the project would have "*No Impact*" on the proliferation of invasive species.

Discussion of CEQA Environmental Checklist Question 2.4b)—Biological Resources

b) 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?

Sensitive Natural Communities

Due to the construction of access roads shown in Appendix A, the proposed project would temporarily impact approximately 0.562 acre of upland riparian vegetation (Table 10). All vegetation removal would occur only as needed to allow equipment access and construction. Most of the vegetation removed would be understory species immediately adjacent to the existing bridges where it is subject to periodic disturbance from bridge maintenance and public recreational activities (e.g., fishing, off-roading) and ongoing noise and visual impacts from the highway. No permanent impacts to any sensitive natural communities would occur (Table 10).

Table 10. Impacts to Sensitive Natural Communities

Natural Community Type	State Rank	CDFW Code	Temporary Impacts (acres)	Permanent (acres)
Black cottonwood *(Populus trichocarpa)* Forest and Woodland Alliance	**S3**	61.120.00	0.160	0
Shining willow groves *(Salix lucida* ssp. *lasiandra)* Forest and Woodland Alliance	**S3**	61.204.00	0	0
Sitka willow thickets *(Salix sitchensis)* Shrubland Alliance	**S3**	61.206.00	0.112	0
Hardstem bulrush marshes *Schoenoplectus acutus)* Herbaceous Alliance	**S3**	52.128.00	0	0
Red alder (*Alnus rubra)* Forest Alliance	**S4**	61.410.00	0.060	0
Berry brambles *Gaultheria shallon – Rubus (ursinus)* Shrubland Alliance	**S3**	63.901.05	0.150	0

Natural Community Type	State Rank	CDFW Code	Temporary Impacts (acres)	Permanent (acres)
Arroyo willow thickets *(Salix lasiolepis)* Shrubland Alliance–*Salix lasiolepis Association*	**S4**	61.201.01	0.080	0
Total			**0.562**	**0**

Tree Removal

All trees 12" DBH and above within the ESL have been identified and mapped (Appendix A). Creation of the access road would involve tree removal to access the river bar. Trees anticipated to be removed are listed below by species and size in Table 11.

Black Cottonwood (Populus trichocarpa) Forest and Woodland Alliance

As currently scoped, the proposed project would temporarily impact approximately 0.160 acre of Black Cottonwood *(Populus trichocarpa)* Forest and Woodland Alliance. These activities would not adversely affect the overall quality, characteristics, or structure of the stands of black cottonwood in which they are located.

Sitka Willow Thickets (Salix sitchensis) Shrubland Alliance

As currently scoped, the proposed project would temporarily impact approximately 0.112 acre of Sitka Willow Thickets *(Salix sitchensis)* Shrubland Alliance. These activities would not adversely affect the overall quality, characteristics, or structure of the willow thickets in which they are located.

Red Alder (Alnus rubra) Forest Alliance

As currently scoped, the proposed project would temporarily impact approximately 0.060 acre of Red Alder *(Alnus rubra)* Forest Alliance. These activities would not adversely affect the overall quality, characteristics, or structure of the forests in which they are located

Berry Brambles Gaultheria shallon – Rubus (ursinus) Shrubland Alliance

As currently scoped, the proposed project would temporarily impact approximately 0.150 acre of Berry brambles *Gaultheria shallon – Rubus (ursinus*) Shrubland Alliance. These activities would not adversely affect the overall quality, characteristics, or structure of the thickets in which they are located

Arroyo Willow Thickets (Salix lasiolepis) Shrubland Alliance—(Salix lasiolepis) Association

As currently scoped, the proposed project would temporarily impact approximately 0.080 acre of Arroyo Willow Thickets (*Salix lasiolepis*) Shrubland Alliance—(*Salix lasiolepis*) Association. These activities would not adversely affect the overall quality, characteristics, or structure of the willow thickets in which they are located

Table 11. Updated Estimated Maximum Potential Tree (>12" DBH) Removal

Tree Tag #	Tree Species	DBH (inches)	Notes
1	*Alnus rubra*	23.3	Possible Limb Trimming
3	*Alnus rubra*	27.3	Possible Limb Trimming
4	*Alnus rubra*	26.6	Possible Limb Trimming
8	*Alnus rubra*	14.2	Likely Removed
9	*Alnus rubra*	12.4	Likely Removed
23	*Populus trichocarpa*	14.5	Likely Removed
24	*Populus trichocarpa*	15.6	Likely Removed
25	*Populus trichocarpa*	15.1	Likely Removed
27	*Populus trichocarpa*	12.0	Likely Removed
n/a	*Populus trichocarpa*	12	Unsafe access. Location and DBH estimated. Tree not tagged. Likely Removed.
n/a	*Populus trichocarpa*	14	Unsafe access. Location and DBH estimated. Tree not tagged. Likely Removed.

Invasive Species

A large proportion of the ESL is adjacent to U.S. 101 and supports many non-native and invasive plant species and the area adjacent to U.S. 101 is largely mapped as non-native herbaceous or barren land types. The Eel River and its riparian corridor contain most of the native vegetation within the ESL, although the non-native purple loosestrife (*Lythrum salicaria*) was found on the Eel River bar. Invasive plant species commonly colonize areas with ground disturbance and could recolonize or increase population sizes through construction activities. Implementation of the Standard Measures and Best Management Practices identified in Section 1.4 of this document would ensure invasive species would not proliferate.

The non-native American bullfrog (*Lithobates catesbeianus*) is responsible for some of the decline of many native species, including frogs, turtles, snakes, and waterfowl, which cannot compete with it or fall prey to it. The project would not create additional habitat conducive to bullfrog proliferation.

Pacific Salmon Essential Fish Habitat

EFH has four components: spawning and incubation, juvenile rearing, juvenile migration corridors, and adult migration corridors. Of these four components, the BSA only contains habitat for adult and juvenile migration corridors (please see Essential Fish Habitat in the Environmental Setting discussion of this section).

Water quality may be temporarily impaired due to short term, localized increases in turbidity from activities that involve ground disturbance or by contaminants in roadway stormwater runoff which could potentially compromise safe passage conditions for fish migration and temporarily reduce the quality of localized rearing habitat. However, Project Features, Standard Measures, and other water quality Best Management Practices (Section 1.4) would be implemented as part of the project. Cover and/or shelter, foraging potential, and safe passage conditions may be temporarily compromised due to noise (e.g., vibration from construction equipment, hoe-ramming) and visual stressors (e.g., artificial light, sudden movements) during construction. There would also be a small temporary loss of vegetation that provides riparian function. The scale of these effects would be small, resulting in no measurable decrease in the quality of the rearing habitat or migration corridors for EFH species. Due to the water diversion and addition of rock slope protection, EFH within and adjacent to the project site would likely be temporarily compromised for Chinook and coho salmon. However, no measurable, long term permanent impacts to waters, substrates, food production and availability, cover conditions, or vegetation would be expected.

Conclusion for Pacific Salmon EFH

Based on the scope of the project and the project's anticipated limited effect on the black cottonwood forest, invasive species, and EFH, Caltrans has determined the project would have a "*Less Than Significant Impact*" on the overall quality, characteristics, or structure of the stands of black cottonwood and red alder forests in which they are located, proliferation of invasive species, or on the four EFH components.

Per FESA, Caltrans anticipates the proposed project "*may adversely affect*" EFH and Caltrans will initiate consultation with NMFS after circulation of this Initial Study.

Discussion of CEQA Environmental Checklist Question 2.4c)—Biological Resources

c) 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 and Other Waters

The proposed project has the potential to affect Waters of the U.S. and Waters of the State, including jurisdictional wetlands and riparian habitat. Permanent and temporary impacts to aquatic resources are anticipated due to bridge and pier removal, construction of the new bridges and piers, falsework, temporary trestles, road realignment, and clear water diversion, as well as associated cut and fill areas and potentially from the creation of a temporary access road (Table 12).

Temporary impacts may result from construction of the access roads, work areas, temporary construction trestle, containment system, clear water diversion, cofferdams, and falsework for new piers and bridge deck. The project would result in temporary impacts of up to 1.850 acres of non-wetland Waters of the U.S. and State, notably Riverine habitat within the Eel River (Eel River-OW3 and Intermittent Stream-OWe).

Permanent impacts to aquatic resources would result from replacement of the two existing oblong Piers 4 and 5 below the OHWM, which would remove approximately 0.03 acre (1200 sq ft) of existing bridge piers (NES Addendum–Tables 2 and 3). Three new cylindrical piers would be constructed, with a total permanent instream structure amount of 0.007 (305 sq ft) acre of bridge pier. Even though this project would add an additional pier below the OHWM, it would result in less overall instream structure area below the OHMW by 0.02 acre (861sq ft).

Wetlands

One wetland feature within the ESL (W1), near the south abutment and retaining wall, could be potentially relocated to accommodate utility relocation or realignment of the roadway (Figures 11 and 12). This wetland occurs where drainage from the highway median collects and supports dominant hydrophytic vegetation, including arroyo willow and common bog rush (*Juncus effusus*).

Project impacts to this wetland would be considered permanent based upon the potential need to move the existing wetland farther west into the median. There could be approximately 0.12 acre impact to PSS wetland W-1 (Table 12).

Eel River System

Temporary impacts would occur to approximately 1.850 acres of Riverine habitat (Tables 12 and 13, Figures 10 and 11) within the Eel River due to trestles, clear water diversion, basins, temporary falsework, bridge removal, and construction of the new piers and bridge sections. The only anticipated permanent impact to this system is associated with the addition of a new pier below the OHWM and replacement of existing piers for a total of -0.02 acre of permanent impacts (Table 12).

Replacement of the two existing oblong Piers 4 and 5 below the OHWM would remove approximately 0.03 acre (1,200 sq ft) of existing bridge piers. Three new cylindrical piers would be constructed, with a total permanent instream structure amount of 0.007 (305 sq ft) acre of bridge pier. Even though this project would add an additional pier below the OHWM, it would result in less overall instream structure area below the OHMW by 0.02 acre (861 sq ft). Total instream structure amounts after completion of this project would be 0.007 acre (304.7 sq ft) of bridge pier (Table 13).

Table 12. Temporary and Permanent Impacts to Waters of the U.S. and State

Aquatic Resource	Map Code	Temporary Impact (acres)	Permanent Impact (acres)
Eel River (R3UB-Appendix D)	OW3	1.850	-0.02
Wetland W1 (PSS)	W-1	0	**0.12**
Total Wetlands		**0**	**0.12**
Total Other Waters (OW)		**1.850**	**-0.02**
Total		**1.850**	**0.10**

Table 13. Reduction of Bridge Pier Structure Area Below OHWM

Existing Pier Number	Existing Size (Square Feet)	Above or Below OHWM	New Pier Number	12-ft CIDH (Square Feet)	Difference (Square Feet)	Difference (Acreage)
Pier 4	600	Below	**Pier 3**	113.1	-486.9	-0.01
N/A	0	Below	**Pier 4**	113.1	113.1	0.003
Pier 5	600	Below	**Pier 5**	78.5	-521.5	-0.01
Total	**1,200**	**Below**		**304.7**	**-895.3**	**-0.02**
Total Acreage	**0.028 acre**	**Below**		**0.007 acre**		

All channel work within the Eel River is expected to be completed within two to three construction seasons (June 15 to October 15). Between construction seasons, the clear water diversion and cofferdams would be removed. It is anticipated this project would have minimal impact on the Eel River System.

Ephemeral Drainages

No impacts would occur to ephemeral drainages.

Intermittent Drainages

No impacts would occur to any intermittent drainages.

Perennial Drainages

No impacts would occur to any perennial drainages or tributaries flowing into the Eel River.

Conclusion for Wetlands and Other Waters

Given the potential for low quantities of permanent impacts to wetlands and waters described above, Caltrans has determined the project would have a "*Less Than a Significant Impact with Mitigation Incorporated*" on Wetlands and Other Waters (see Mitigation Measures under Section 2.4f).

Discussion of CEQA Environmental Checklist Question 2.4d)—Biological Resources

d) 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?

ANIMAL SPECIES

Bat Species

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of bat species in Question a) and given that no known maternity roosts or other colonial night roosts would be removed or altered during project activities Caltrans has determined the project would have a "*Less Than Significant Impact*" on bat species use of migratory corridors and nursery sites.

Foothill Yellow-legged Frog

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Foothill yellow-legged frog in Question a), given the short duration/intermittent nature of the work, and implementation of standard measures, such as species relocation, Caltrans has determined the project would have a "*Less Than Significant Impact*" on the movement of or migratory corridors of FLYF.

Northern Red-legged Frog

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Northern red-legged frog (NRLF) in Question a), Caltrans has determined the project would have a "*Less Than Significant Impact*" on the movement of or migratory corridors of NRLF.

Monarch Butterfly

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of monarch butterfly in Question a), given that it is highly unlikely that monarch butterflies would be present during construction, Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of monarch butterfly.

Obscure Bumble Bee and Western Bumble Bee

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of obscure bumble bee and Western bumble bee in Question a), given the potential nesting areas are inundated with water during the hibernation period or routinely mowed and disturbed, bumble bees are not anticipated to be overwintering in areas proposed for project access. Caltrans has determined the project would have "*No Impact*" on the movement of or nursery sites of bumble bee species.

Migratory Bird Species

No nests would be removed or altered during project activities, though small shrub removal and work near an active nest could affect nesting birds. Pre-construction nesting bird surveys would be performed. Impacts to migratory birds would not be substantial given the minimal amount and type of vegetation to be removed, the temporary nature of the project, and standard migratory bird measures. Given this, Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of migratory bird species.

Western Pond Turtle

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Western pond turtle in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of Western pond turtle.

Pacific Lamprey and Western Brook Lamprey

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Pacific lamprey and Western brook lamprey in Question a), Caltrans has determined the project would have a "*Less Than Significant Impact*" on the movement of or migratory corridors of Pacific lamprey or western brook lamprey.

Pacific Fisher

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Pacific fisher in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of Pacific fisher or their habitat.

Sonoma Tree Vole and White-footed Vole

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Sonoma tree vole and white-footed vole in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of the Sonoma tree vole and white-footed vole.

Vaux's Swift

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Vaux's swift in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of Vaux's swift.

Yellow-breasted Chat

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of yellow-breasted chat in Question a), given that there would be no vegetation or nest structure removal during the nesting season, Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of yellow-breasted chat.

Yellow Warbler

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of yellow warbler in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of yellow warbler.

THREATENED AND ENDANGERED SPECIES

American Peregrine Falcon

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of American peregrine falcon in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of American peregrine falcon.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of American peregrine falcon.

Bald Eagle

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of bald eagle in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of bald eagle.

Per CESA, given the project would not directly harm this species, the project would have no "*Take*" of bald eagle.

Bank Swallow

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of bank swallow in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of bank swallow.

Per CESA, given the project would not directly harm this species, the project would have no "*Take*" of bank swallow.

Green Sturgeon–Southern DPS

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of green sturgeon in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of green sturgeon.

Per FESA, Caltrans has determined the project would have "*No Effect*" on green sturgeon.

Little Willow Flycatcher

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of little willow flycatcher in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of little willow flycatcher.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of little willow flycatcher.

Northern Spotted Owl

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of northern spotted owl in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of NSO.

No suitable nest trees or nesting habitat would be impacted as a result of the proposed project. Given that the nearest positive observation is approximately 0.31-mile to the northeast of the project footprint and 700 feet (210 meters) northeast of the ESL, and the nearest activity center is over 1 mile outside the ESL, nearby suitable habitat would not be affected by elevated sound levels from construction. Furthermore, the marginal habitat on the border of the BSA is screened from the project area by an active industrial site which further buffers sound and any visual disturbances.

Per FESA, the project would have "*No Effect"* on northern spotted owl.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of northern spotted owl.

Ringtail

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of ringtail in Question a), given that the presence of a highly traveled roadway and occupied human structures in the proximity of the BSA likely preclude ringtail from denning in the project area, Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of ringtail or their habitat.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of ringtail.

Salmonids

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). These impacts have been examined to determine if the proposed project would interfere substantially with the movement of migratory salmonid species or with established migratory corridors.

The project would not have permanent impacts to fish passage or migration. During construction, movement of salmonid species may be affected by noise (e.g., vibration from construction equipment, hoe-ramming) and visual stressors (e.g., artificial light, sudden movements). Dewatering portions of the streams (where construction would occur) and relocating aquatic species, if present, outside of the work area would reduce these effects. The diversion itself would temporarily restrict the movement of rearing juvenile salmonids, potentially making them more vulnerable to stress and predation; however, the timing of diversion avoids the late fall-winter migration period for adult salmon that may pass through the project area to spawn, and avoids most of the spring-early summer smolt out-migration.

Impacts to habitat, such as temporary loss of riparian vegetation, would not result in a measurable decrease in the quality of the rearing habitat or migration corridors for salmonid species. A Revegetation Plan would be implemented to restore the project area to pre-construction conditions with native tree and plant species. Additional Standard Measures and Best Management Practices described in Section 1.4 would avoid and minimize impacts to the movement and migration of salmonids. Given the above, a determination was made that the project would have a "*Less Than Significant Impact*" to movement of salmonid species and established migratory corridors.

Per FESA, Caltrans has determined the proposed project ***may affect, is likely to adversely affect*** listed salmonid species and Caltrans will continue to consult with NMFS regarding project effects on these species, which include CC Chinook salmon and NC steelhead.

Per FESA, Caltrans has determined the proposed project ***may affect, is not likely to adversely affect*** SONCC coho salmon.

Per FESA, Caltrans also anticipates the proposed project ***may affect, is not likely to adversely affect*** critical habitat for CC Chinook salmon, SONCC coho salmon, and NC Steelhead.

Per FESA, Caltrans anticipates a determination that the proposed project ***may adversely affect*** Pacific salmon (Chinook and coho salmon) EFH. Formal Consultation with NMFS would be utilized to address potential effects to CC Chinook salmon, their associated critical habitats, and Pacific Salmon EFH.

Per CESA, the project would not result in "*Take*" of SONCC coho salmon and NC summer-run steelhead.

Tricolored Blackbird

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of tricolored blackbird in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of tricolored blackbird.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of tricolored blackbird.

Western Snowy Plover–Pacific Coast DPS

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of Western snowy plover–Pacific Coast DPS in Question a) and given the lack of Western snowy plover presence during surveys and marginal habitat within the project limits, Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of Western snowy plover or its habitat.

Per FESA, the project would have "*No Effect"* on Western snowy plover.

White-tailed Kite

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of white-tailed kite in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of white-tailed kite.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of white-tailed kite.

Yellow-billed Cuckoo–Western DPS

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of yellow-billed cuckoo–Western U.S. DPS (YBCU) in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migratory corridors of YBCU or their habitat.

Per FESA, Caltrans has determined the project would have "*No Effect"* on YBCU.

Per CESA, given the project would not directly harm this species, this project would have no "*Take*" of YBCU.

INVASIVE SPECIES

Please reference Section 2.4. Biological Resources—Discussion of CEQA Environmental Checklist, Question a). Based on the discussion of invasive species in Question a), Caltrans has determined the project would have "*No Impact*" on the movement of or migration of invasive species.

Discussion of CEQA Environmental Checklist Question 2.4e)—Biological Resources

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

The project would not conflict with any known local policies or ordinances protecting biological resources, including tree preservation policies. Caltrans practices incorporate Standard Measures and Best Management Practices to protect resources and to comply with ordinances; therefore, Caltrans has determined the project would have "*No Impact*".

Discussion of CEQA Environmental Checklist Question 2.4f)—Biological Resources

f) 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?

The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other known approved local, regional, or state habitat conservation plans. The project's environmental impacts are expected to be minimal due to the scope of work and implementation of the Standard Measures and Best Management Practices identified in Section 1.4; therefore, Caltrans has determined the project would have "*No Impact*".

Mitigation Measures

Wetlands Mitigation

To compensate for the temporary disturbance and permanent impacts to the Eel River and other waters, Caltrans would comply with regulatory requirements under the various permits: RWQCB Section 401 permit, USACE 404 permit, and CDFW Lake or Streambed Alteration Agreement (LSAA). Caltrans anticipates the project would result in the temporary disturbance of approximately 1.850 acres of Riverine habitat within the Eel River and permanent impacts of -0.02 acre of Other Waters (Eel River and associated drainages) resulting in 0.10 acre permanent impacts to wetlands at a compensation ratio to be determined through coordination with regulatory agencies as part of the permitting process.

The impact and compensation acreage would be confirmed during the review of future engineering drawings and may be modified accordingly during the permitting process. In addition, any temporary loss of waters during project construction would be restored on-site. Caltrans would implement on-site restoration and compensation for any potential net increase in permanent fill below the OHWM with coordination from the USACE, CDFW, and NCRWQCB. Because the project includes removal of two existing large piers, which would be replaced with the proposed three smaller piers, the restored area may count toward the compensation for permanent fill.

Although unlikely, the project may require shifting a 0.119-acre wetland currently located in the highway median. If this wetland is impacted, mitigation for permanent wetland impacts would be implemented off-site. Mitigation credits for these impacts would be purchased using the 2021 Steve Smith Fen Parcel Cooperative Agreement between Caltrans, the California Department of Fish and Wildlife, the North Coast Regional Water Quality Control Board, and the National Fish and Wildlife Foundation. This agreement includes the protection of a 115-acre parcel (APN 210-033-006) with high value wetland features worth up to 0.6 acre of wetlands impact credits (Appendix F).

A Wetlands and Waters Mitigation and Monitoring Plan would be developed between the release of this Draft Environmental Document and the completion of the Final Environmental Document. As discussed in Section 1.4 (Standard Measures), all temporary disturbed soil areas would be restored through invasive weed removal and by replanting with native vegetation. These measures would likely offset potential effects.

Given that areas temporarily impacted would be restored and permanent impacts would be mitigated, a determination was made that the project would have a "*Less Than Significant Impact with Mitigation Incorporated*" on wetlands and other waters.

2.5 Cultural Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
Would the project: b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?				✓
Would the project: c) Disturb any human remains, including those interred outside of dedicated cemeteries?				✓

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the *Historic Property Survey Report*, dated August 5, 2021 (Caltrans 2021e). Potential impacts to archaeological or historical resources are not anticipated due to findings of no cultural resources present in the Area of Potential Effects, no historical resources present, and no historic properties affected.

2.6 Energy

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

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the *Energy Analysis for the Eel River Bridge Seismic Retrofit* dated May 4, 2022 (Caltrans 2022d). The proposed project would not increase highway capacity or provide congestion relief when compared to the No-Build Alternative. The project would not result in a change in energy consumption. Construction-related energy consumption would be temporary and would not have a noticeable effect on local and regional fuel supplies. Given this, potential impacts to energy are not anticipated.

2.7 Geology and Soils

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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.				✓
ii) Strong seismic ground shaking?				✓
iii) Seismic-related ground failure, including liquefaction?				✓
iv) Landslides?				✓
Would the project: b) Result in substantial soil erosion or the loss of topsoil?				✓
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?				✓
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?				✓

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
Would the project: f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✓

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the *Eel River Bridge Seismic Retrofit Project Paleontological Identification Report/Paleontological Evaluation Report* dated November 21, 2021 (Caltrans 2021a). Potential impacts to unique paleontological resources or unique geological features are not anticipated because project-related excavation would only occur to Holocene Alluvial and Quaternary Terrace deposits that have low sensitivity. Additionally, Wildcat Group[3], which is one to two miles away from the project area, occurs on well-defined slopes that are well outside the project area. For these reasons, significant paleontological resources are not anticipated to be encountered during project-related activities, including excavation for roadway realignment and construction of new abutments.

[3] Wildcat Group contain lenses of pebble to boulder conglomerates with carbonate concretions, abundant molluscan fossils, woody debris, and rhyolitic ash layers (Caltrans 2021a).

2.8 Greenhouse Gas Emissions

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?			✓	
Would the project: b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change (IPCC), established by the United Nations and World Meteorological Organization in 1988, is devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. However, the research of the Intergovernmental Panel on Climate Change and other scientists attributed an accelerated rate of climatological changes over the past 150 years to GHG emissions generated from the production and use of fossil fuels.

Human activities generate GHGs, consisting primarily of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; and while it is a naturally occurring and necessary component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2 and the main driver of climate change. In the U.S. and in California, transportation is the largest source of GHG emissions, mostly CO_2.

The impacts of climate change are already being observed in the form of sea level rise, drought, extended and severe fire seasons, and historic flooding from changing storm patterns. The most important strategy in addressing climate change is to reduce GHG emissions. Additional strategies are necessary to reduce and adapt to these impacts. "Reductions" involve actions to decrease GHG emissions to lessen adverse impacts that are likely to occur. "Adaptations" plan for and respond to impacts to decrease vulnerability and increase resilience, such as adjusting transportation design standards to withstand more intense storms and higher sea levels. This analysis will include a discussion of both in the context of this proposed transportation project.

Regulatory Setting

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

FEDERAL

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

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

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (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.

The federal government has taken steps 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) as amended by the *Energy Independence and Security Act (EISA) of 2007*; and *Corporate Average Fuel Economy (CAFE) Standards*. This act established fuel economy standards for on-road motor vehicles sold in the United States. The U.S. Department of Transportation's National Highway Traffic and Safety Administration (NHTSA) sets and enforces the CAFE standards based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The U.S. Environmental Protection Agency (U.S. EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG emissions standards under the Clean Air Act (CAA). Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation's energy security, saves consumers money at the pump, and reduces GHG emissions (U.S. DOT 2014).

U.S. EPA published a final rulemaking on December 30, 2021, that raised federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. The updated GHG emissions standards will avoid more than 3 billion tons of GHG emissions through 2050. In April 2022, NHTSA announced corresponding new fuel economy standards for model years 2024 through 2026, which will reduce fuel use by more than 200 billion gallons through 2050 compared to the old standards and reduce fuel costs for drivers (U.S. EPA 2022a; NHTSA 2022).

STATE

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

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

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (CARB) 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 the CARB 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. The CARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 GHG reduction goals.

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

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

EO B-16-12 (March 2012): Orders State entities under the direction of the Governor, including the CARB, 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 the CARB to update the *Climate Change Scoping Plan* to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$).[4] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure its provisions are fully implemented.

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[4] GHGs differ in how much heat each trap in the atmosphere (called global warming potential or GWP). CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

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."

SB 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 traveled 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.

SB 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires the CARB 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.

AB 1279, Chapter 337, 2022, The California Climate Crisis Act: This bill mandates carbon neutrality by 2045 and establishes an emissions reduction target of 85% below 1990 level as part of that goal. This bill solidifies a goal included in EO B-55-18. It requires the CARB to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

Environmental Setting

The proposed project is adjacent to industrial-commercial and urban residential land use areas in the city of Rio Dell where the local economy is based primarily on agriculture and tourism. U.S. 101 is the main transportation route through the area for both passenger and commercial vehicles. Public transit through the project area on U.S. 101 includes the Redwood Transit System, administered through a joint powers authority between Humboldt County and surrounding cities, including Rio Dell. The nearest alternate route for the area on the north side of the Eel River is State Route (SR) 36, 1.5 miles to the north, which serves rural communities and National Forest lands located between U.S. 101 and Interstate 5. The nearest alternate routes to the south include the Mattole Road to State Route 211 near Ferndale, California, or State Route (SR) 162 (96 miles). Traffic counts are low, and U.S. 101 is rarely congested. The Humboldt County Association of Governments (HCAOG) Regional Transportation Agency guides transportation development. The Humboldt County General Plan Circulation, Safety, and Traffic elements address GHGs in the project area. Construction of the Eel River Bridge Seismic Retrofit Project is expected to begin in 2025 and last for approximately 440 working days.

GHG Inventories

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 CARB does so for the state, as required by H&SC Section 39607.4. Cities and other local jurisdictions may also conduct local GHG inventories to inform their GHG reduction or climate action plans.

NATIONAL GHG INVENTORY

The annual GHG inventory submitted by the U.S. EPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United States. Total GHG emissions from all sectors in 2020 were 5,222 million metric tons (MMT), factoring in deductions for carbon sequestration in the land sector. Of these, 79 percent were CO_2, 11 percent were CH_4, and 7 percent were N_2O; the balance consisted of fluorinated gases. Total GHGs in 2020 decreased by 21% from 2005 levels and 11% from 2019. The change from 2019 resulted primarily from less demand in the transportation sector during the COVID-19 pandemic.

The transportation sector was responsible for 27 percent of total U.S. GHG emissions in 2020, more than any other sector (Figure 16), and for 36% of all CO_2 emissions from fossil fuel combustion. Transportation CO_2 emissions for 2020 decreased 13 percent from 2019 to 2020, but were 7 percent higher than transportation CO_2 emissions in 1990 (Figure 16) (U.S. EPA 2022b)(U.S. EPA 2022b, 2022c).

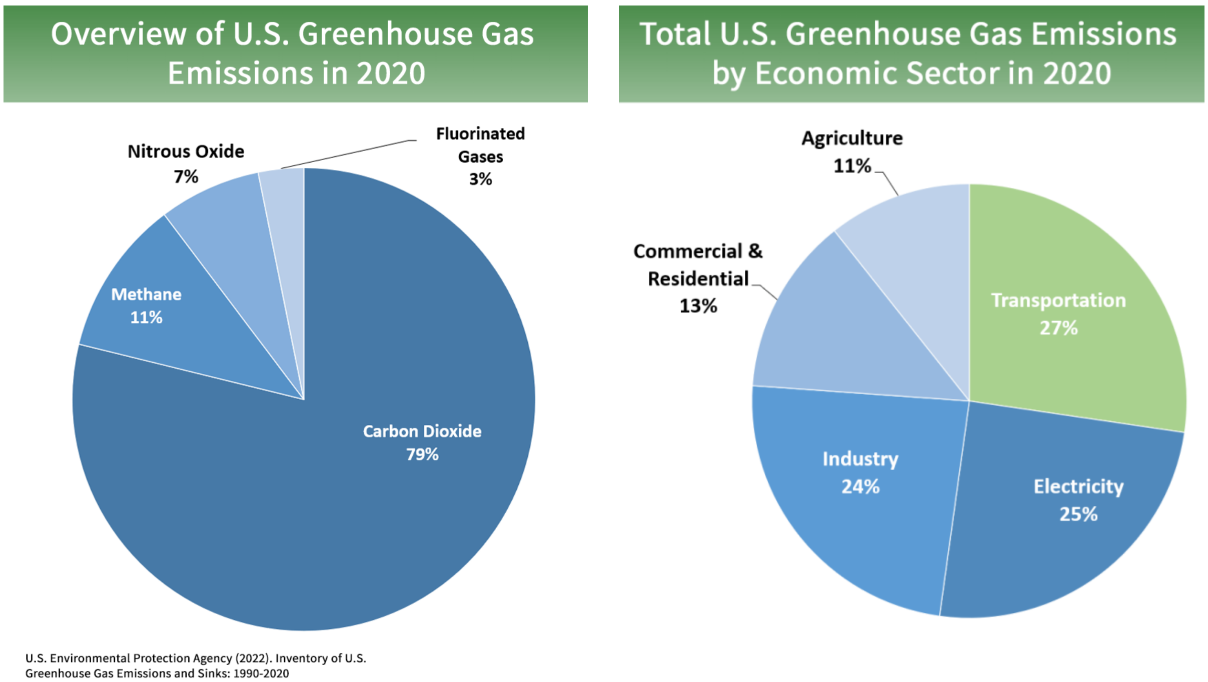

Figure 16. U.S. 2020 Greenhouse Gas Emissions

(Source: U.S. EPA 2022b)

STATE GHG INVENTORY

The CARB collects GHG emissions data for transportation, electricity, commercial and 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 2022 edition of the GHG emissions inventory reported emissions trends from 2000 to 2020. Total California GHG emissions in 2020 were 369.2 $MMTCO_2e$, a reduction of 35.3 $MMTCO_2e$ from 2019 and 61.8 $MMTCO_2e$ below the 2020 statewide limit of 431 $MMTCO_2e$.

Much of the decrease from 2019 to 2020, however, is likely due to the effects of the COVID-19 pandemic on the transportation sector, during which vehicle miles traveled declined under stay-at-home orders and reductions in goods movement. Nevertheless, transportation remained the largest source of GHG emissions, accounting for 37 percent of statewide emissions (Figure 17). (Including upstream emissions from oil extraction, petroleum refining, and oil pipelines in California, transportation was responsible for about 47 percent of statewide emissions in 2020; however, those emissions are accounted for in the industrial sector.) California's gross domestic product (GDP) and GHG intensity (GHG emissions per unit of GDP) both declined from 2019 to 2020 (Figure 17). It is expected that total GHG emissions will increase as the economy recovers over the next few years (CARB 2022a).

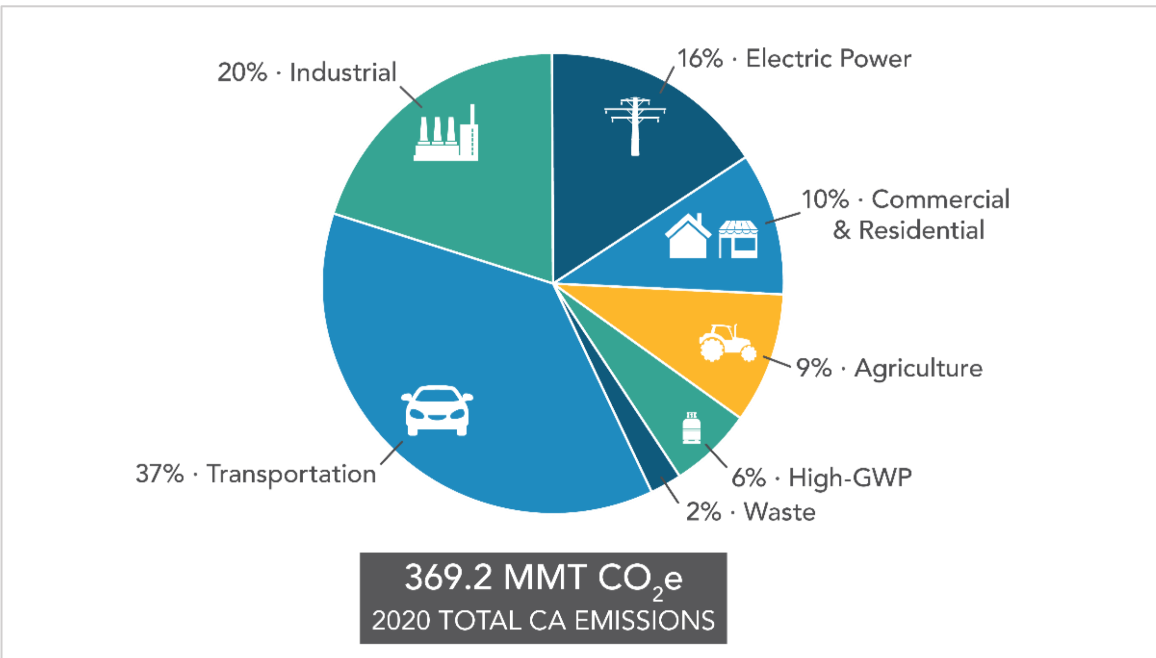

Figure 17. California 2020 Greenhouse Gas Emissions by Scoping Plan Category

(Source: CARB 2022a)

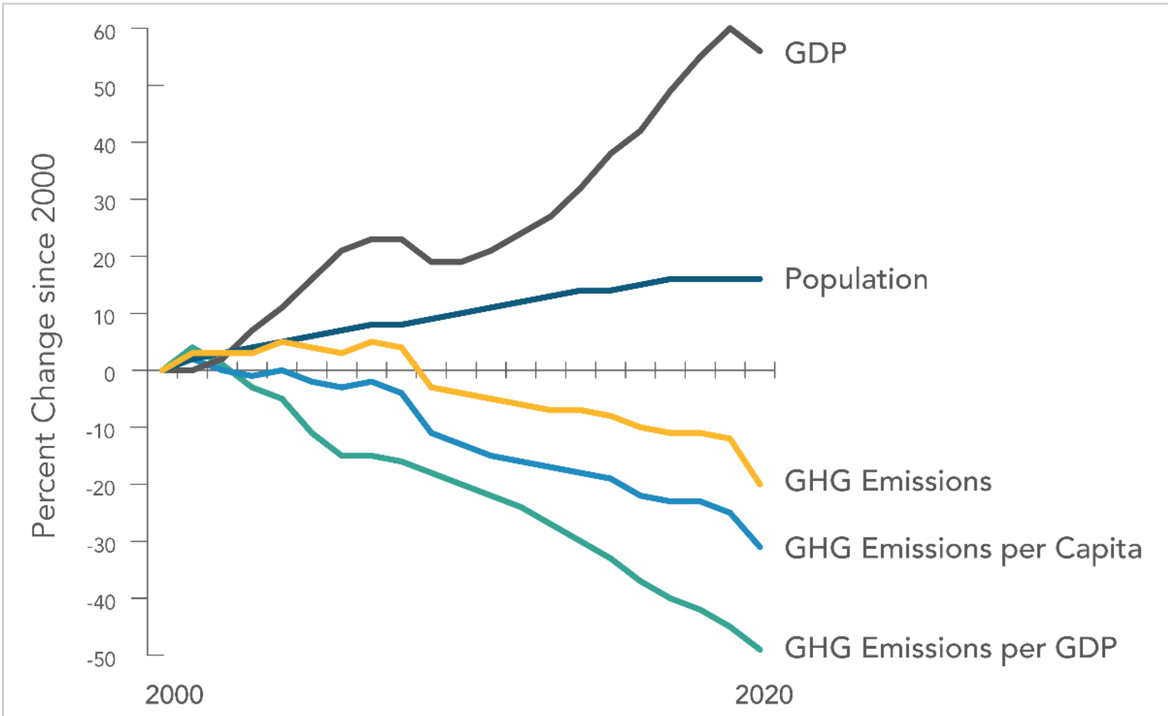

Figure 18. Change in California GDP, Population, and GHG Emissions since 2000

(Source: CARB 2022b)

AB 32 required the CARB 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. The CARB 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 draft 2022 Scoping Plan Update additionally lays out a path to achieving carbon neutrality by 2045 (CARB 2022b).

REGIONAL PLANS

The CARB sets regional GHG reduction targets for California's 18 Metropolitan Planning Organizations (MPOs) to achieve through planning future projects that will cumulatively achieve those goals and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. However, the project area is not within the jurisdiction of a Metropolitan Planning Organization, therefore the project is not subject to CARB GHG reduction targets.

The Humboldt County Association of Governments is the Regional Transportation Planning Agency (RTPA) for the project area. The 2022-2042 Regional Transportation Plan (RTP) identifies a regional 40 percent reduction target for Humboldt County and the seven participating cities by 2030 (Table 14) (HCOAG 2022). The project would not conflict with regional and local GHG reduction plans or policies but rather would support the plans and policies by providing a more reliable route for transit through the community.

Table 14. Regional and Local Greenhouse Gas Reduction Plans

Title	GHG Reduction Policies or Strategies
Humboldt County Association of Governments (HCAOG) Regional Transportation Plan 2022-2042	• Reduce regional VMT • Increase transit ridership • Transition to zero-emission fleets
Humboldt Regional Climate Action Plan–Environmental Review Draft October 20, 2021 (County of Humboldt 2021a)	• Low-Carbon Transportation • Active and sustainable mass transit • Building electrification • Energy efficiency

Title	GHG Reduction Policies or Strategies
County of Humboldt General Plan Update: Climate Action Plan (County of Humboldt 2018 and 2021a)	• Decrease energy consumption through increased energy conservation and efficiency in building, transportation, business, industry, government, water and waste management. • Direct Redwood Coast Energy Authority (RCEA) to administer the Comprehensive Action Plan for Energy. • Support revitalization and infilling of Urban Development Areas to reduce long-term vehicle miles traveled as an energy conservation strategy. • Provide incentives for discretionary development incorporating renewable energy sources and conservation measures

Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation of the State Highway System (SHS) (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of CH_4 and N_2O. A small amount of HFC emissions related to refrigeration is also included in the transportation sector.

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

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

Operational Emissions

The purpose of the proposed project is to partially replace and seismically retrofit the Eel River Bridge to reduce exposure of the traveling public to seismic-related bridge failure and would not increase the vehicle capacity of the roadway or vehicle miles traveled. This type of project generally causes minimal or no increase in operational GHG emissions. Because the project would not increase the number of travel lanes on U.S. 101 near Rio Dell, California, no increase in vehicle miles traveled (VMT) would occur. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

Construction Emissions

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

Use of long-life pavement, improved Transportation Management Plans, and changes in materials can also help offset emissions produced during construction by allowing longer intervals between maintenance and rehabilitation activities.

According to the California Air Resources Board, each greenhouse gas (GHG) has a global warming potential value, which reflects the climate forcing of a kilogram of emissions relative to the same mass of carbon dioxide (CO_2). This number is calculated by the Intergovernmental Panel on Climate Change (IPCC), based on the intensity of infrared absorption by each GHG and how long emissions remain in the atmosphere. GWPs are calculated using a set time horizon. All GWPs used for GHG inventory purposes are considered over a 100-year timeframe. GWPs are updated periodically with improvements to the underlying science.

The Caltrans Construction Emissions Tool (CAL-CET) was used to quantify the expected construction-related GHG emissions related to the proposed project, which would begin in 2025 and require 440 working days for construction. Based on the current GWP values from the *IPCC Fourth Assessment Report* (AR4), the total expected GHG emissions that would result from 440 days of construction is 1,872 tons of CO_2e (Table 15).

Table 15. Estimated Construction Emissions in U.S. Tons Based on 440 Working Days

Construction Duration	CO_2	CH_4	N_2O	HFC	$CO_{2}e$
Daily Average (lbs/day)	4801	0.108	0.23	0.25	8510
Maximum Daily Average (lbs/day)	8542	0.231	0.374	0.523	16299
Annual Average (tons/year)	352	0.008	0.017	0.018	619
Project Total (tons)	**1056**	**0.024**	**0.051**	**0.055**	**1,872**

All construction contracts include Caltrans Standard Specifications related to air quality. Sections 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all CARB emission reduction regulations. Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations (such as equipment idling restrictions) that reduce construction vehicle emissions also help reduce GHG emissions.

CEQA Conclusion

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

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

Greenhouse Gas Reduction Strategies

STATEWIDE EFFORTS

In response to AB 32, California is implementing measures to achieve emission reductions of GHGs that cause climate change. Climate change programs in California are effectively reducing GHG emissions from all sectors of the economy. These programs include regulations, market programs, and incentives that will transform transportation, industry, fuels, and other sectors to take California into a sustainable, low-carbon and cleaner future, while maintaining a robust economy (CARB 2022c).

Major sectors of the California economy, including transportation, will need to reduce emissions to meet 2030 and 2050 GHG emissions targets. The Governor's Office of Planning and Research (OPR) identified five sustainability pillars in a 2015 report: (1) increasing the share of renewable energy in the State's energy mix to at least 50 percent by 2030; (2) reducing petroleum use by up to 50 percent by 2030; (3) increasing the energy efficiency of existing buildings by 50 percent by 2030; (4) reducing emissions of short-lived climate pollutants; and (5) stewarding natural resources, including forests, working lands, and wetlands, to ensure they store carbon, are resilient, and enhance other environmental benefits (OPR 2015). OPR later added strategies related to achieving statewide carbon neutrality by 2045 in accordance with EO B-55-18 and AB 1279 (Governor's OPR 2022).

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). Reducing today's petroleum use in cars and trucks by 50% is a key state goal for reducing greenhouse gas emissions by 2030 (California Environmental Protection Agency 2015).

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.

Subsequently, Governor Gavin Newsom issued Executive Order N-82-20 to combat the crises in climate change and biodiversity. It instructs state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged, and vulnerable communities. To support this order, the California Natural Resources Agency (2022a) released *Natural and Working Lands Climate Smart Strategy*, with a focus on nature-based solutions.

CALTRANS ACTIVITIES

Caltrans continues to be involved on the Governor's Climate Action Team as the CARB 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.

Climate Action Plan for Transportation Investments

The California Action Plan for Transportation Infrastructure (CAPTI) builds on executive orders signed by Governor Newsom in 2019 and 2020 targeted at reducing GHG emissions in transportation, which account for more than 40 percent of all polluting emissions, to reach the state's climate goals. Under CAPTI, where feasible and within existing funding program structures, the state will invest discretionary transportation funds in sustainable infrastructure projects that align with its climate, health, and social equity goals (California State Transportation Agency 2021).

California Transportation Plan

The *California Transportation Plan* (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The CTP 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide GHG emissions reduction targets and increase resilience to climate change. It demonstrates how GHG emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021b).

Caltrans Strategic Plan

The *Caltrans 2020–2024 Strategic Plan* includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a VMT monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities (Caltrans 2021c).

Caltrans Policy Directives And Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a Department policy to ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020) provides a comprehensive overview of Caltrans' emissions. The report documents and evaluates current Caltrans procedures and activities that track and reduce GHG emissions and identifies additional opportunities for further reducing GHG emissions from Department-controlled emission sources, in support of Departmental and state goals.

Project-Level Greenhouse Gas Reduction Strategies

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

- Caltrans Standard Specifications 7-1.02C, Emissions Reduction: requires the contractor to certify awareness of, and comply with, the emissions reduction regulations mandated by the California Air Resources Board.
- Section 14-9.02, Air Pollution Control: requires contractors to comply with all air pollution-control rules, regulations, ordinances, and statutes of the CARB and the local air pollution control district.
- Standard construction Best Management Practices for air quality would also apply. Such air-pollution control measures can also help reduce construction GHG emissions.

- Traffic and Transportation measures would also reduce/minimize GHG emissions during construction (see Section 1.4):
  - TT-1: Pedestrian and bicycle access would be maintained during construction, to avoid such users having to transfer to using motor vehicles.

- TT-3: A Transportation Management Plan would be implemented to maintain traffic flow and minimize delays and idling that would generate extra GHG emissions.
- All areas temporarily disturbed during construction would be revegetated with appropriate native species. Landscaping reduces surface warming and, through photosynthesis, decreases CO_2. This replanting would help offset any potential CO_2 emissions increase.
- Salvage and recycle rebar from demolished concrete and process waste to create usable fill.
- Select pavement materials that lower the rolling resistance of highway surfaces as much as possible while still maintaining design and safety standards.

Adaptation Strategies

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

The U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. DOT 2011). The U.S. DOT Climate Action Plan of August 2021 followed up with a statement of policy to "accelerate reductions in greenhouse gas emissions from the transportation sector and make our transportation infrastructure more climate change resilient now and in the future," following this set of guiding principles (U.S. DOT 2021):

- Use best-available science
- Prioritize the most vulnerable
- Preserve ecosystems
- Build community relationships
- Engage globally

U.S. DOT developed its climate action plan pursuant to the federal EO 14008, *Tackling the Climate Crisis at Home and Abroad* (January 27, 2021). EO 14008 recognized the threats of climate change to national security and ordered federal government agencies to prioritize actions on climate adaptation and resilience in their programs and investments (White House 2021).

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. A number of state policies and tools have been developed to guide adaptation efforts.

California's Fourth Climate Change Assessment (Fourth Assessment) (California Natural Resources Agency 2018) is the state's effort to "translate the state of climate science into useful information for action." It provides information that will help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The State's approach recognizes that the consequences of climate change occur at the intersections of people, nature, and infrastructure. The Fourth Assessment reports that if no measures are taken to reduce GHG emissions by 2021 or sooner, the state is projected to experience a 2.7 to 8.8°F increase in average annual maximum daily temperatures, with impacts on agriculture, energy demand, natural systems, and public health; a two-thirds decline in water supply from snowpack and water shortages that will impact agricultural production; a 77% increase in average area burned by wildfire, with consequences for forest health and communities; and large-scale erosion of up to 67% of Southern California beaches and inundation of billions of dollars' worth of residential and commercial buildings due to sea level rise (State of California 2018).

Sea level rise is a particular concern for transportation infrastructure in the Coastal Zone. Major urban airports will be at risk of flooding from sea level rise, combined with storm surge, as early as 2040; San Francisco airport is already at risk. Miles of coastal highways vulnerable to flooding in a 100-year storm event will triple to 370 by 2100, and 3,750 miles will be exposed to temporary flooding. The Fourth Assessment's findings highlight the need for proactive action to address these current and future impacts of climate change.

In 2008, then-governor Arnold Schwarzenegger recognized the need when he issued EO S-13-08, focused on sea level rise. Technical reports on the latest sea level rise science were first published in 2010 and updated in 2013 and 2017. The 2017 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. This EO also gave rise to the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding*

California: Reducing Climate Risk (Safeguarding California Plan), which addressed the full range of climate change impacts and recommended adaptation strategies. The Safeguarding California Plan was updated in 2018 and again in 2021 as the *Draft California Climate Adaptation Strategy*, incorporating key elements of the latest sector-specific plans such as the *Natural and Working Lands Climate Smart Strategy*, *Wildfire and Forest Resilience Action Plan*, *Water Resilience Portfolio,* and the CAPTI (described above). Priorities in the 2021 California Climate Adaptation Strategy include acting in partnership with California Native American tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, nature-based climate solutions, use of best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2021).

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, in addition to 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.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group to help actors throughout the state address the findings of California's Fourth Climate Change Assessment (California Natural Resource Agency 2018). It released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*, in 2018. 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 (Climate Change Infrastructure Working Group 2018).

CALTRANS ADAPTATION EFFORTS

Caltrans Vulnerability Assessments

Caltrans completed climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects of precipitation, temperature, wildfire, storm surge, and sea level rise.

The climate change data in the assessments was 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 guide the analysis of at-risk assets and development of Adaptation Priority Reports as a method to make capital programming decisions to address identified risks.

Project Adaptation Efforts

In the project area, the primary climate change impact of concern relates to catastrophic flooding in the flood-prone main Eel River. Regional large-scale flood events generally result from intense and variable winter storms with a high snowfall event, followed by a sudden temperature increase and rain. This combination of extreme weather events resulted in the 1964 flood that collapsed and destroyed the north half of the Eel River Bridge (Paul Mudgett Memorial Bridge). Climate change may result in more frequent and intense storms in the future that could result in larger flood events.

The project proposes to retrofit the north half of the bridge for seismic vulnerabilities and replace the remaining portion of the original bridge according to current bridge standards, which would make the structure less likely to collapse during future floods. With the higher likelihood of the bridge withstanding future seismic and flood events, the bridge infrastructure improvements would result in greater community resilience and maintain safe and reliable transportation to the public.

Sea Level Rise

The proposed project is located outside of the Coastal Zone. However, NOAA predicts that within the project area the Eel River may be influenced by sea level rise at the extreme risk aversion scenario (Figures 19 and 20, Table 16). The project area marks the uppermost boundary in the Eel River that would be affected by the “extreme risk” sea level rise scenario estimated to be 10.9 feet by the year 2100. The bridge deck is approximately 80 feet above the OHWM and no impacts are expected as the location would not be subject to wave run-up or storm surge. Accordingly, direct impacts to transportation facilities due to projected sea level rise are not anticipated (Figure 20).

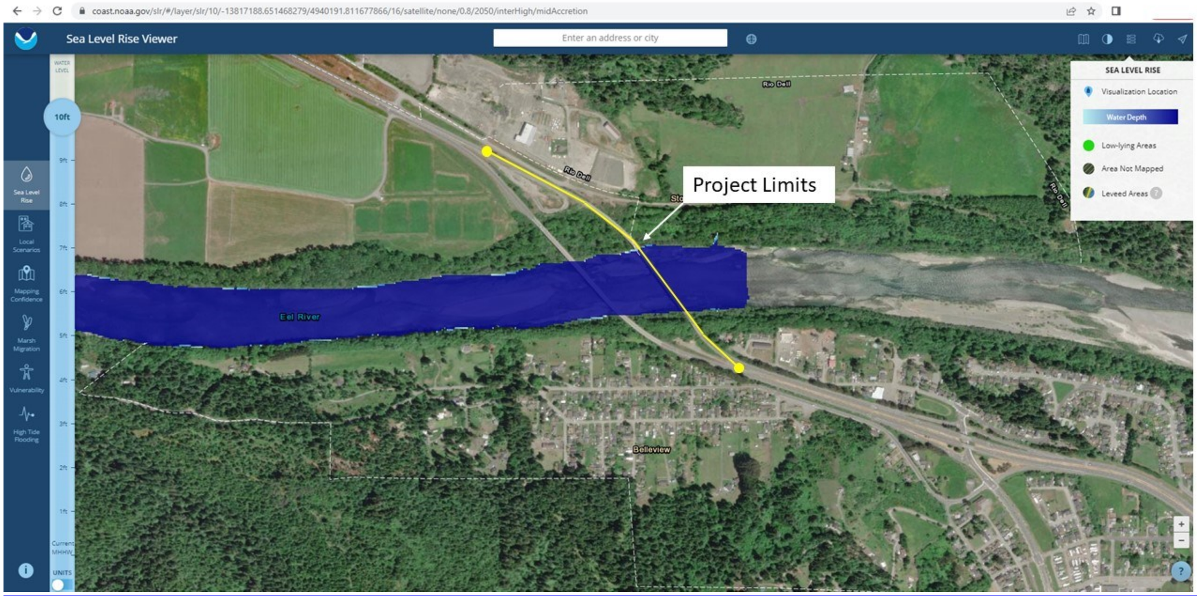

Figure 19. Projected Sea Level Rise at the Extreme Risk Scenario

The map shows the maximum predicted change along the channel margins in light blue color.

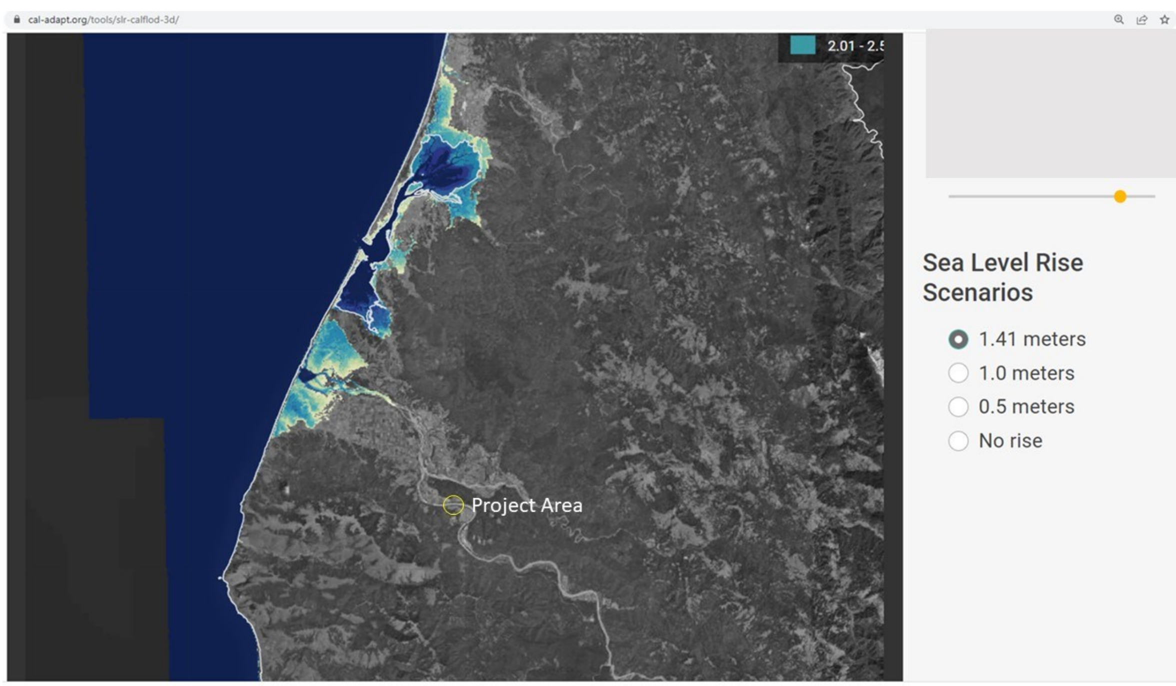

Figure 20. Projected Sea Level Rise Humboldt Bay and the Eel River

(Cal-Adapt website (http://cal-adapt.org/tools/slr-calflod-3d/)

Table 16. Projected Sea Level Rise in feet for the North Spit, Humboldt County, CA

PROJECTED SEA-LEVEL RISE (FEET) FOR NORTH SPIT, HUMBOLDT COUNTY, CA			
Year	**Low Risk Aversion (feet)**	**Medium-High Risk Aversion (feet)**	**Extreme Risk Aversion (H++) (feet)**
2030	0.7	1	1.2
2040	1.1	1.6	2
2050	1.5	2.3	3.1
2060	1.8	3	4.3
2070	2.2	3.8	5.6
2080	2.7	4.7	7.2
2090	3.1	5.8	8.9
2100	3.6	7	10.9

Precipitation and Flooding

Precipitation and flooding in the project area may increase with climate change. The proposed project is located within the Federal Emergency Management Agency's (FEMA) 100-year flood risk zone and the primary climate change impact of concern relates to catastrophic flooding in the Eel River. The projected increase in 100-year storm depth is between 5.0 and 9.9% (Caltrans 2019).

The project proposes to retrofit the north half of the bridge for seismic vulnerabilities and replace the remaining portion of the original bridge according to current bridge standards, which would make the structure less likely to collapse during future floods. The proposed retrofit work would not significantly add frontal area or volume to the flood zone (Caltrans 2022e). The span replacement would include replacing the existing rounded-end pier walls with 12-foot-diameter cast-in-drilled-hole (CIDH) pile extensions (circular piers) which would have a smaller frontal area to the streamflow and less volume in the inundated zone. Accordingly, direct impacts to transportation facilities due to increased flooding risk are not anticipated (Figure 20).

Wildfire

The project area is classified as a Local Responsibility Area (LRA) within Humboldt County. Fire-related districts are responsible for structural fire protection and wildland fires in the LRA, although CAL FIRE assists local districts with the management of wildfires in the LRA based on mutual-aid agreements (County of Humboldt 2019). The Rio Dell LRA is primarily the responsibility of the local jurisdiction (i.e., local fire departments) (Figure 21). No LRA in Humboldt County contains a "*Very High* Fire Hazard Severity Zone". Fire prevention Standard Measures UE-1 and UE-3 in Section 1.4 would be utilized during construction.

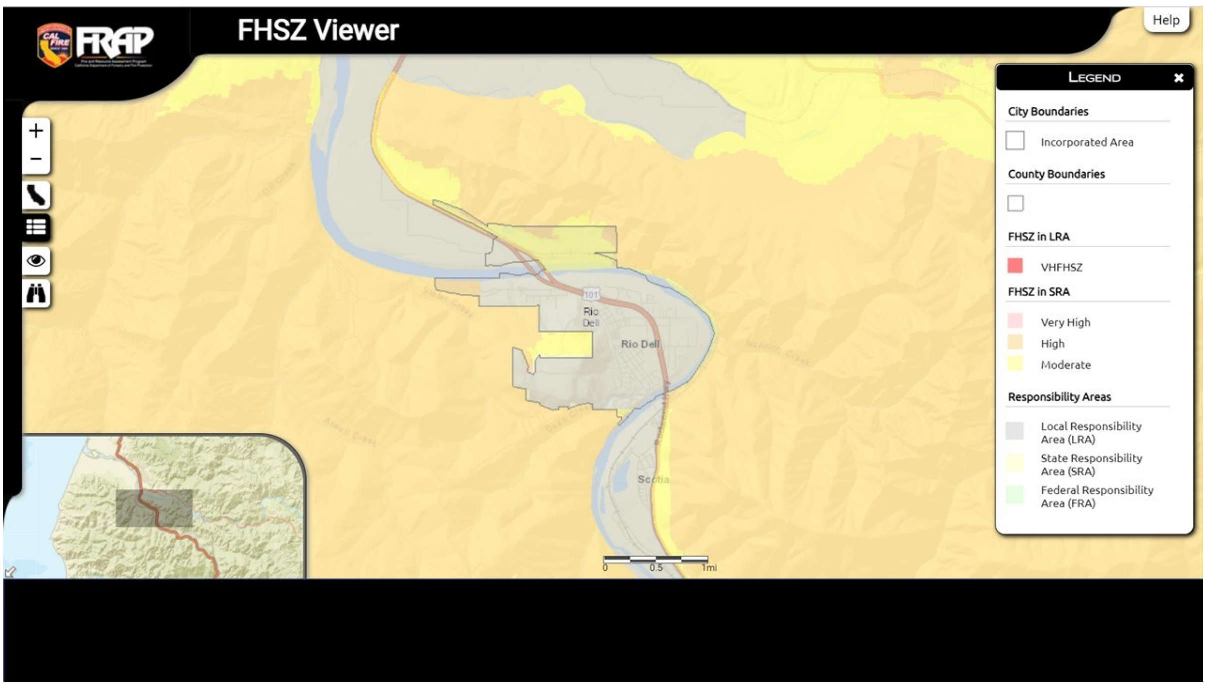

Figure 21. Local Responsibility Area

Temperature

The *Caltrans District 1 Climate Change Vulnerability Assessments* (2019) does not indicate temperature changes in the project area during the project's design life that would require adaptive changes in pavement design or maintenance practices. RCP (Representative Concentration Pathways) 8.5 emission scenario was used in the Caltrans Climate Change Vulnerability Assessment for District 1 which assumes high GHG emissions will continue to the end of the century.

2.9 Hazards and Hazardous Materials

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
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?				✓
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?				✓
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?				✓
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?				✓

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
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 Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the *Initial Site Assessment* dated May 5, 2020 (Caltrans 2020a). There are no indications of hazardous waste within the project limits and no hazardous waste sites or businesses commonly associated with hazardous waste generation nearby.

2.10 Hydrology and Water Quality

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?			✓	
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?				✓
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;			✓	
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;				✓
(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				✓
(iv) impede or redirect flood flows?			✓	

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				✓
Would the project: e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓

Regulatory Setting

The primary laws and regulations governing hydrology and water quality include:

- Federal: Clean Water Act (CWA)–33 USC 1344
- Federal: Executive Order for the Protection of Wetlands (EO 11990)
- State: California Fish and Game Code (CFGC) Sections 1600–1607
- State: Porter-Cologne Water Quality Control Act Sections 13000 et seq.

Environmental Setting

The project is in the Lower Eel River Hydrologic Area and Ferndale Subarea (#111.11), which encompasses an area of 90,501 acres (Caltrans 2022c). The project area drains to the Eel River, which flows northwesterly and enters the Pacific Ocean approximately 15 miles south of Eureka, California.

According to the California Department of Water Resources (DWR) (DWR 2018), the project is located within the Eel River Valley groundwater basin (#1-10). The Eel River Valley groundwater basin covers approximately 73,700 acres, with groundwater depths in the alluvium ranging from 3 to 20 feet (DWR 2004).

Average annual precipitation for this area is 47.98 inches, with the majority of the precipitation occurring from October to May. The average annual maximum temperature is 62.9 degrees Fahrenheit (°F) and the average annual minimum temperature is 46.5°F (Western Regional Climate Center 2016).

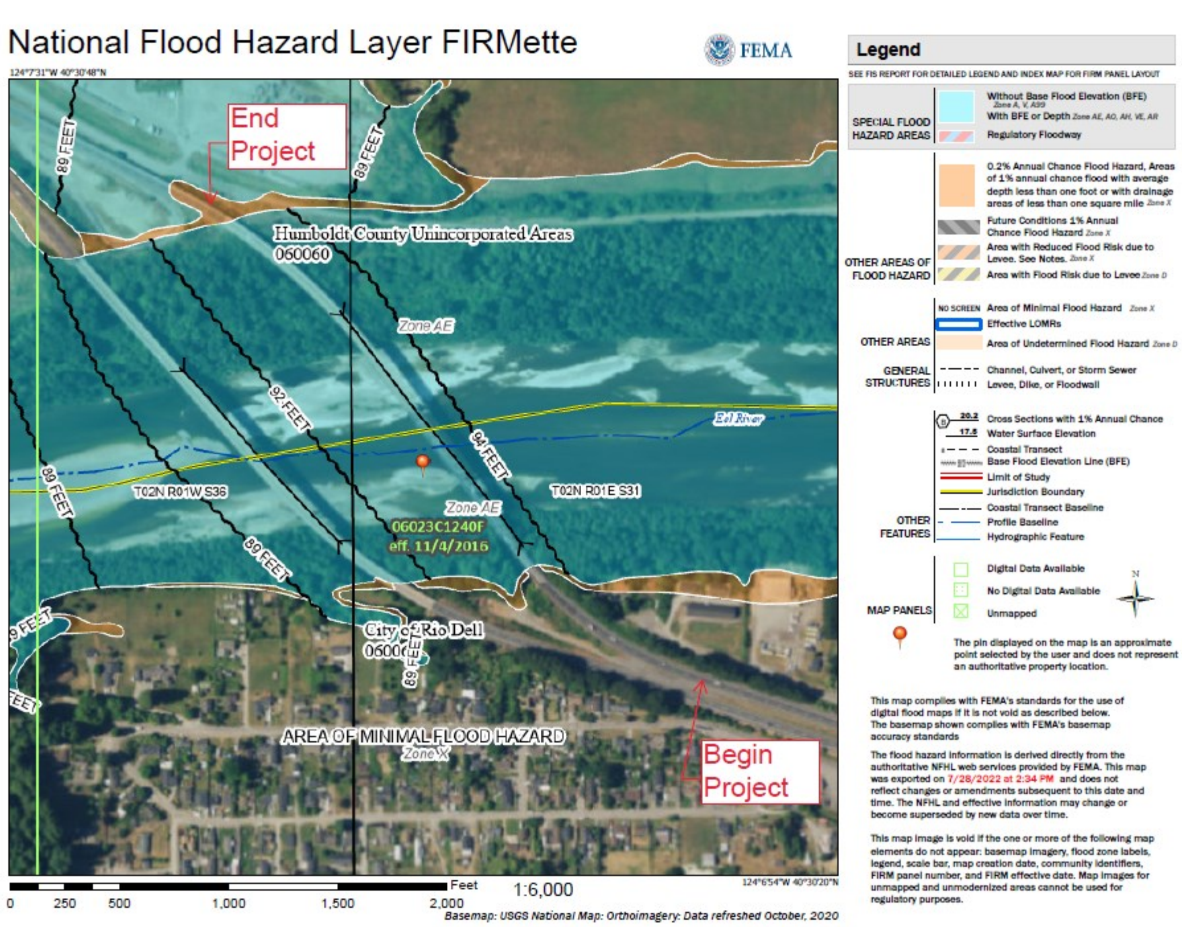

Figure 22. National Flood Hazard Map

Discussion of CEQA Environmental Checklist Question 2.10—Hydrology and Water Quality

The following information was based on the *Water Quality Assessment Report* (WQAR) (Caltrans 2022c) and Floodplain Evaluation Report Summary (FERS) (Caltrans 2022e).

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Suspended Particulates (Turbidity): Temporary, short-term increases in turbidity to receiving waters could occur during construction. Soil erosion, especially during heavy rainfall, can increase the suspended solids, dissolved solids, and organic pollutants in stormwater runoff generated within the project limits. Potential for turbidity impacts is specifically of concern from construction-related activities for the proposed structures. A clear water diversion during construction may be necessary for work within or near the Eel

River, including the replacement of Spans 1–4 of the northbound bridge and the seismic retrofitting of the remaining spans. These activities can potentially contribute to temporary increases in turbidity. Routinely used project features (temporary BMPs) are included to protect water quality from turbidity impacts.

The project proposes to add minimal amounts of impervious surface area. No permanent impacts to water quality of the Eel River related to turbidity are anticipated. If any impacts do occur, they would be minimal and addressed by standard erosion control practices and other permanent project features (permanent BMPs).

Oil, Grease, and Chemical Pollutants: During construction, there is potential for accidental releases of oil, grease, wash waters, solvents, cement, sanitary wastes (which could be seen as a visible film, coating on the surface, or floating material), and other construction materials to receiving waters. Details of anticipated contaminants are discussed in the project's *Initial Site Assessment* (Caltrans 2020a).

Materials and wastes could be directly discharged into the Eel River or tracked off-site by vehicles, deposited onto roads, and eventually picked up and transported into waterways. Temporary impacts to water quality could occur during bridge construction, dewatering, excavation, clear water diversion, saw cutting, and waste management. Routinely used project features (temporary BMPs) are included to protect water quality.

The project does not propose any activities or uses likely to permanently degrade water quality. Future uses must comply with all local and regional water quality standards. Runoff pollution typically associated with roadways can be satisfactorily mitigated by project features (permanent BMPs).

Temperature and Dissolved Oxygen: Temporary, short-term increases in temperature and dissolved oxygen to receiving waters could occur during construction. Soil erosion, especially during heavy rainfall, can increase the suspended solids, dissolved solids, and organic pollutants in stormwater runoff generated within the project limits. The increase in pollutants could then increase the temperature and decrease the dissolved oxygen levels in the Eel River. These conditions would persist until the completion of construction activities, as well as the implementation of long-term erosion control measures and proposed permanent structures.

Based on the above information, Caltrans has determined the project would have a "*Less Than a Significant Impact*" on water quality.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The project would require work within the Eel River that has the potential to temporarily alter baseflow. Groundwater baseflow impacts can potentially result from a drawdown of groundwater from dewatering of groundwater during construction in areas of excavation near or within the Eel River. Routinely used project features, such as dewatering and clear water diversion, would protect water quality when work within the Eel River occurs. Impacts to groundwater baseflow would be minimal and limited to the construction period.

Based on the above information, Caltrans has determined the project would have "*No Impact"* on sustainable groundwater management.

c) Would the project 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?

The project would require work in the river, which has the potential to temporarily alter baseflow. Rock slope protection (RSP) to alleviate scour and erosion could have a potentially beneficial permanent impact on erosion and siltation patterns. Temporary increases in suspended particulates and turbidity during storm events may occur due to disturbed soil near and within the Eel River during construction. These short-term impacts would be addressed using various construction site project features (temporary BMPs). Project activities, such as bridge construction and roadway realignment, may affect natural erosion and accretion patterns. Permanent impacts to erosion and accretion patterns from the project are anticipated to be minimal with the implementation of standard erosion control practices and other project features (permanent BMPs).

Based on the above information, Caltrans has determined the project would have a "*Less Than a Significant Impact*" on water quality, drainage patterns, and flood hazards.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

The bridge span replacement would include replacing the existing rounded-end pier walls with 10-foot-diameter Cast-In-Drilled-Hole (CIDH) pile extensions (circular piers) which would have a smaller frontal area to the streamflow and less volume in the inundated zone. The project would not result in flooding on-or off-site.

Based on the above information, Caltrans has determined the project would have "*No Impact*" on surface runoff that would result in flooding.

(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?

As the project would not include highway reconstruction, permanent stormwater impacts are not anticipated. Routinely used features (temporary BMP's and standard measures) would be included to ensure water quality is unaffected.

Temporary, short-term increases in temperature and dissolved oxygen to receiving waters could occur during construction. Soil erosion, especially during heavy rainfall, can increase the suspended solids, dissolved solids, and organic pollutants in stormwater runoff generated within the project limits. The increase in pollutants could then increase the temperature and decrease the dissolved oxygen levels in the Eel River. These conditions would persist until the completion of construction activities, as well as the implementation of long-term erosion control measures and proposed permanent structures. Routinely used project features (temporary BMPs) would be included to protect water quality from temperature and dissolved oxygen impacts.

Based on the above information, Caltrans has determined the project would have "*No Impact*" to stormwater drainage systems.

(iv) impede or redirect flood flows?

The project work on the new and existing piers is in Zone AE Special Flood Hazard Area (Figure 22) (Caltrans 2022e). The portion of Zone AE encompassing the bridge work has Base Flood Elevations (BFE) of between 92 feet and 94 feet, relative to the North American Vertical Datum of 1988 (NAVD 88). Abutment 1 is in Unshaded Zone X. Abutment 9 is in Shaded Zone X; however, the retrofit work would not significantly add frontal area or volume to this flood zone.

The span replacement would include replacing the existing rounded-end pier walls with 12-foot-diameter Cast-In-Drilled-Hole (CIDH) pile extensions (circular piers) which would have a smaller frontal area to the streamflow and less volume in the inundated zone. The retaining wall alternatives on the south bank of the river would be in Unshaded Zone X. The bridge soffit elevation would be above the BFE.

Based on the above information, Caltrans has determined the project would have a "*Less Than a Significant Impact"* on flood flows.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Based on the Caltrans (2020) *Initial Site Assessment*, asbestos and lead-containing paint surveys conducted in 2016 found only a minor amount of asbestos-containing materials associated with the barrier rail shims of Bridge No. 04-0016L. All paint sampled from the bridge did not classify as California or federal hazardous waste based on lead concentration if removed from the substrate.

Based on the above information, Caltrans has determined the project would have "*No Impact*" on the risk of pollutant release due to project inundation.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

There is potential for the presence of groundwater contamination at the project site due to historical contaminant sources within the project vicinity. There was previously a sawmill and a wrecking yard immediately adjacent to the project site; both have records of chemical releases into the groundwater (State Water Resources Control Board [SWRCB] GeoTracker 2022). If groundwater is found to be contaminated, the project would obtain the *NCRWQCB Order No. R1-2016-0034 and General NPDES No. CAG911001 Discharges of Highly Treated Groundwater to Surface Water Following Extraction and Treatment of Groundwater Polluted with Petroleum Hydrocarbons and Volatile Organic Compounds*, which covers construction groundwater dewatering of potentially contaminated groundwater that has been treated to avoid adverse impacts to beneficial uses of the receiving waters and to comply with all applicable water quality objectives listed within the Basin Plan (North Coast RWQCB 2018).

If groundwater is found to be clean, the project would obtain the *NCRWQCB Order No. R1-2015-0003 and General NPDES No. CAG0024902 Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region*, which covers construction groundwater dewatering of potentially impacted groundwater, provided that (1) the discharge does not contain pollutant quantities that could adversely affect beneficial uses, and (2) the discharge meets specific criteria listed in the Basin Plan (North Coast RWQCB 2018).

Based on the above information, Caltrans has determined the project would have "*No Impact*" on the implementation of the Basin Plan.

2.11 Land Use and Planning

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project: a) Physically divide an established community?				✓
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 Impact" determinations in this section are based on the scope, description, and location of the proposed project and the *Community Impact Analysis* dated July 18, 2022 (Caltrans 2022f). Potential impacts to land use and planning are not anticipated as the proposed project would not divide an established community or conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The project is consistent with existing zoning, plans, and other applicable land use controls.

2.12 Mineral Resources

Question:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
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 Impact" determinations in this section are based upon the scope, description, and location of the proposed project. As there are no designated mineral resource areas of state or regional importance in the project area, and the project would not impede the extraction of any known mineral resources (Division of Mine Reclamation 2022), there would be no impact.

2.13 Noise

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
Would the project result in: b) Generation of excessive groundborne vibration or groundborne noise levels?				✓
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 Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the *Air Quality and Traffic Noise Analysis for the Eel River Bridge Seismic Retrofit Project* dated June 7, 2021 (Caltrans 2021). The proposed project does not construct a new highway in a new location or substantially change the vertical or horizontal alignments. As traffic volumes, composition, and speeds would remain the same, permanent noise impacts are not anticipated. Noise generated during construction would be temporary and minimized by the Standard Measures and Best Management Practices featured in Section 1.4.

2.14 Population and Housing

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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)?				✓
Would the project: b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓

"No Impact" determinations in this section are based upon the scope, description, and location of the proposed project. The project involves replacing the south half of the bridge and retrofitting the north half of the bridge and would not directly or indirectly induce unplanned population growth in the area by constructing housing or creating new employment, nor would it induce population growth by providing new access or opening a new area to development. As the proposed project would not involve acquisition of land occupied by homes or residences and would not result in displacement of people or housing, potential impacts on population and housing are not anticipated.

2.15 Public Services

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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: Fire protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project. Impacts to public services are not anticipated as the proposed project would maintain traffic flow across the Eel River and would not disrupt or adversely affect public services.

2.16 Recreation

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
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 Impact" determinations in this section are based upon the scope, description, and location of the proposed project. Potential impacts on recreation are not anticipated because the project would involve the partial replacement and retrofit of the existing bridge structure and would not affect park resources and recreational facilities or public access to such resources or facilities.

2.17 Transportation

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
Would the project: b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?				✓
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)?				✓
Would the project: d) Result in inadequate emergency access?				✓

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project. Potential impacts to transportation are not anticipated as the adjacent southbound bridge would be used to detour traffic from the northbound bridge.

2.18 Tribal Cultural Resources

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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 § 21074 as either a site, feature, place, or 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 § 5020.1(k), or				✓
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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				✓

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the *Cultural Memorandum for the Eel River Bridge Seismic Retrofit Project* dated August 5, 2021 (Caltrans 2021d). Initial letters were sent November 29, 2017, to the Bear River Band of Rohnerville Rancheria, Blue Lake Rancheria, and the Wiyot tribes. Email correspondence in March of 2021 revealed no immediate concerns regarding proposed construction. Given this, potential impacts to tribal cultural resources are not anticipated.

Requests were made for Caltrans to follow inadvertent discovery protocols and to provide final cultural studies to the Wiyot Tribe. Standard measures for the discovery of cultural materials or human remains are incorporated into the project (see CR-1 and CR-2 in Section 1.4).

2.19 Utilities and Service Systems

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	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?				✓
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?				✓
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?				✓
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?				✓
Would the project: e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project. As discussed in Chapter 1, the project would require the relocation of existing utilities; however, this would not result in significant environmental effects. The project would not result in a new source of wastewater or solid waste or create a new demand for water supplies; therefore, impacts to utilities and service systems are not anticipated.

2.20 Wildfire

Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near State Responsibility Areas (SRA) 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?				✓
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?				✓
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 may result in temporary or ongoing impacts to the environment?				✓
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 Impact" determinations in this section are based on the scope, description, and location of the proposed project as well as the *Eel River Bridge Wildfire Analysis* dated May 4, 2022 (Caltrans 2022g). The project corridor is located within a Local Responsibility Area (LRA). The project is within lands classified as *Moderate High* Fire Hazard Severity Zones (CAL FIRE 2022). The project would replace an existing bridge and would not exacerbate fire risks. Potential impacts to emergency evacuation are not anticipated due to the proximity and availability of the existing southbound U.S. 101 bridge. The proposed work would not impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risks, or expose people or structures to significant risks; therefore, potential wildfire impacts are not anticipated.

2.21 Mandatory Findings of Significance

Does the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) 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?				✓
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)				✓
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				✓

Discussion of CEQA Environmental Checklist Question 2.21—Mandatory Findings of Significance

California Environmental Quality Act of 1970 (CEQA) requires preparation of an Environmental Impact Report (EIR) when certain specific 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 impact 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 (CEQA § 15355)**.**

Cumulative impacts to resources 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.

Per Section 15130 of CEQA, a Cumulative Impact Analysis (CIA) discussion is only required in "…situations where the cumulative effects are found to be significant." The analysis indicates the activities associated with the proposed project do not have the potential to have a "significant" direct, indirect, or cumulative impact on any resource. Given this, an EIR and CIA were not required for this project.

Chapter 3. Agency and Public Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including Project Development Team (PDT) meetings, interagency coordination meetings, and site visits with agency staff. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination. Caltrans' coordination with agencies and resource professionals is described in Table 17.

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

Coordination with Resource Agencies

June 15, 2022 – Field Review with CDFW (Allan Renger and Christopher Loomis) and NMFS (Mike Kelly).

Coordination with Property Owners

March 21, 2017 – Permit to Enter (PTE) for Evans property.

May 23, 2022 – Utility Relocation Strategy Session with PG&E and the City of Rio Dell.

June 21, 2022 – City of Rio Dell–City Council Meeting (Caltrans Project Manager Marie Brady; Caltrans Design Engineer Dan Stiles; Caltrans Environmental Coordinator Zachary Larson)

September 20, 2022 – City of Rio Dell–City Council Meeting (Caltrans Project Manager Marie Brady). Introduced aesthetic treatments.

Table 17. Agency Coordination and Professional Contacts

Coordination Effort	Date	Personnel
Site visit and snowy plover surveys	6/7/2017	Greg Schmidt, USFWS Jenny Hutchinson, USFWS Jeff Wright, Caltrans Biologist
Site visit and snowy plover surveys	7/6/2017	Greg Schmidt, USFWS Jeff Wright, Caltrans Biologist
Site visit and snowy plover surveys	8/8/2017	Greg Schmidt, USFWS Jenny Hutchinson, USFWS Jeff Wright, Caltrans Biologist
Virtual meeting with NMFS	4/21/2021	Mike Kelly, NMFS Jeff Wright, Caltrans Biologist Zachary Larson, Caltrans Coordinator
Site visit and discussion	5/7/2021	Jennifer Olson, CDFW Jeff Wright, Caltrans Biologist Zachary Larson, Caltrans Coordinator
Site visit and discussion	6/9/2021	Kevin Church, Caltrans Engineer John Moore, Caltrans Andrew Rogers, Caltrans Biologist Wade Taylor, Caltrans Drilling Services Jeff Wright, Caltrans Biologist Zachary Larson, Caltrans Coordinator
Level 1 Consultation	9/21/2021	Bob Coey, NMFS Jeffrey Jahn, NMFS Mike Kelly, NMFS Greg Schmidt, USFWS Jennifer Olson, CDFW Julie East, Caltrans Senior Env. Scientist Stephanie Frederickson, Caltrans Senior Resource Specialist Jeff Wright, Caltrans Biologist Zachary Larson, Caltrans Coordinator

Coordination Effort	Date	Personnel
Site visit and discussion	6/15/2022	Mike Kelly, NMFS Chris Loomis, CDFW Allan Renger, CDFW Jessica Barger, Caltrans Stephanie Frederickson, Caltrans Senior Resource Specialist Jeff Wright, Caltrans Biologist Zachary Larson, Caltrans
Level 1 Consultation	2/7/2023	Jeffrey Jahn, NMFS Mike Kelly, NMFS Greg Schmidt, USFWS Gregory O'Connell, CDFW Christopher Loomis, CDFW Amon Armstrong, Caltrans Tyler Egerer, Caltrans Julie East, Caltrans Christian Figueroa, Caltrans Hilary Hodson, Caltrans Stephanie Frederickson, Caltrans Dan Stiles, Caltrans Jeff Wright, Caltrans Timothy Nelson, Caltrans Zachary Larson, Caltrans

Chapter 4. List of Preparers

The following individuals performed the environmental work and contributed to the preparation of the Initial Study / Mitigated Negative Declaration for this project:

California Department of Transportation, District 1

Alex Arevalo, PE	NPDES Specialist
Marie Brady, PE	Project Manager
Ellie Brauer	Sea Grant Fellow, Wild and Scenic Rivers Analysis
Desiree Davenport	Associate Environmental Planner
Julie East	Branch Chief, Senior Environmental Scientist
Christian Figueroa, PG	Branch Chief, Senior Engineering Geologist, PG, CEG, QSD
Tina Fulton	Archaeologist/Co-PI Prehistoric Archaeology
Jacob Hilliard	Revegetation Specialist
Valerie Jones	Landscape Associate, Visual Impact Assessment
Tim Keefe	Senior Environmental Planner, PQS co-PI Prehistoric Archaeology
Brandon Larsen	Office Chief, Supervising Environmental Planner
Zachary Larson	Environmental Scientist, IS/MND Preparation
Jon Lee	Revegetation Specialist
Jeremy Miller-Schulze	Hydraulics Engineer, Floodplain Evaluation
Timothy Nelson	Mitigation Specialist

Laurel Osborn	Environmental Coordinator, Document Review
Ryan Pommerenck	Engineer, Hydroacoustic Assessment
Celeste Redner	Hydraulic Engineer, OHWM Delineation
Daniel Stiles, PE	Design Engineer, Draft Project Report Preparation
Jeff Wright	Environmental Scientist, Natural Environment Study
Stacey Zolnoski	PQS PI Prehistoric Archaeology

Stantec – Paleontological Identification Report

MariaElana Conserva	Principal Paleontologist, Earthview Science
Heather Waldrop	Senior Project Manager, Stantec

Stantec – Waters/Wetlands Delineation Report and Botanical Study and Vegetation Mapping

Jason Minton	Wildlife Biologist, Stantec
Sarah Tona	Associate Biologist, Stantec

Chapter 5. Distribution List

Federal and State Agencies

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NOAA Fisheries
1655 Heindon Road
Arcata, CA 95518

Mike Kelly
National Marine Fisheries Service
1655 Heindon Road
Arcata, CA 95521

Greg O'Connell
CDFW
619 Second Street
Eureka, CA 95501

Allan Renger
CDFW
1487 Sandy Prairie Court, Suite A
Fortuna, CA 95540

Greg Schmidt
USFWS
1655 Heindon Road
Arcata, CA 95518

Susan Stewart
NCRWQCB
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403-1072

California State Lands Commission
Jennifer Lucchesi, Executive Officer
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

Regional/County/Local Agencies

City of Rio Dell
675 Wildwood Ave.
Rio Dell, CA 95562

Humboldt County Clerk
805 5th Street
Eureka, CA 95501

Humboldt County Association of Governments
611 I Street, Suite B
Eureka, CA 95501

Local Elected Officials

Mayor Debra Garnes
675 Wildwood Ave.
Rio Dell, CA 95562

Michelle Bushnell, 2nd District County Supervisor
825 5th Street, Room 111
Eureka, CA 95501

Interested Groups, Organizations and Individuals

Jackson Hurst
4216 Cornell Crossing
Kennesaw, GA 30144

Utilities, Service Systems, Businesses, and Other Property Owners

Pacific Gas and Electric Company
P.O. Box 997300
Sacramento, CA 95899-7300

City of Rio Dell Public Works Division
475 Hilltop Drive
Rio Dell, CA 95562

Chapter 6. References

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PERSONAL COMMUNICATION

Allan Renger, Senior Environmental Scientist (Supervisor), CDFW. 2016 and 2022

Christopher Loomis, Fisheries Biologist/Environmental Scientist, CDFW. 2022-2023

Greg Schmidt, USFWS Caltrans Liaison. 2016-2023

Mike Kelly, Fisheries Biologist/NMFS Caltrans Liaison. 2021-2023

Sean McAllister, North Coast Field Biologists. 2016

Appendix A. Project Layouts

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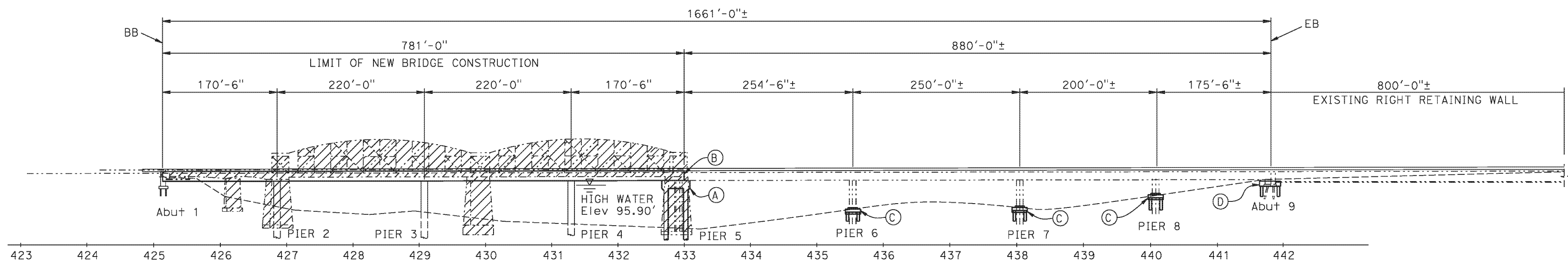
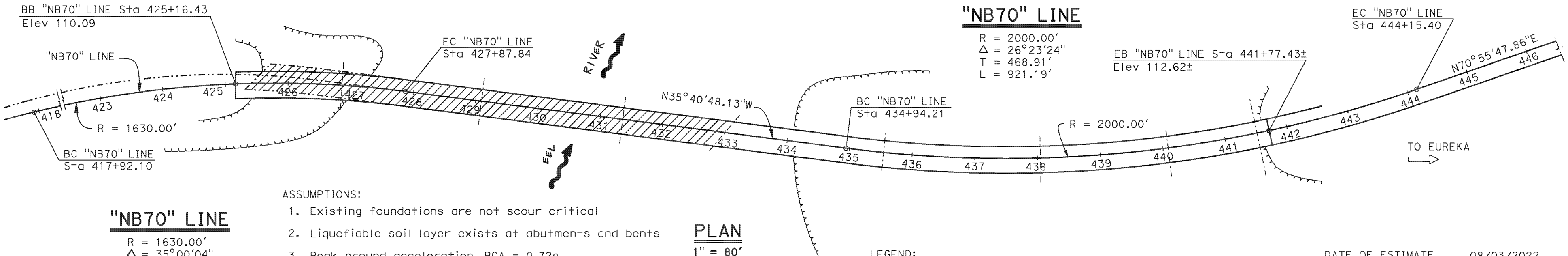
DIST	COUNTY	ROUTE	POST MILE
01	Hum	101	53.91



ELEVATION
1" = 80'



"NB70" LINE
R = 1630.00'
Δ = 35°00'04"
T = 513.95'
L = 995.74'

PLAN
1" = 80'

ASSUMPTIONS:

1. Existing foundations are not scour critical
2. Liquefiable soil layer exists at abutments and bents
3. Peak ground acceleration, PGA = 0.72g (Per perliminary seismic recommendation, July 2015)
4. Bridge closure required for new bridge construction
5. Temporary support of existing north approach required for bridge removal
6. Falsework over waterway required
7. Access to substructure work from deck may be required. Traffic handling plan unknown at this time
8. Waterway temporary easement permits required for construction
9. Work restriction on the river due to environmental requirements. Actual work window unknown at this time
10. Relocation of existing utility may required
11. Preliminary inline alignment w/existing structure assumed. Actual alignment to be determine
12. Utility details unknown at this time
13. Barrier rail (Type 842) upgrade work scope pending but not included

LEGEND:

- Indicates existing bridge removal (Portion)
- Indicates existing structure
- Indicates new structure

NOTES:

- (A) Construct new pier
- (B) Construct seismic joint and base isolation bearing
- (C) Pier foundation retrofit
- (D) Abutment 9 retrofit
- (E) Place 1" polyester overlay (BB to EB)

DATE OF ESTIMATE		08/03/2022
BRIDGE REMOVAL	=	$4,134,400
STRUCTURE DEPTH	=	12.00 FT
LENGTH	=	1,661 FT
WIDTH	=	
AREA	=	69,970 SF
COST/ft² INCLUDING 10% MOBILIZATION 10% TRO & 25% CONTINGENCY	=	$733/SF
TOTAL COST	=	$51,281,000

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

SHEET 1 OF 4

DESIGNED BY	Sharon Yen	DATE	Rev 9/10/19
DRAWN BY	Liang Ma	DATE	Rev 9/10/19
CHECKED BY	Joey Aquino	DATE	Rev 9/10/19
APPROVED	Joseph Downing	DATE	Rev 9/10/19

STRUCTURE DESIGN BRANCH 3

ALTERNATIVE 1A
PARITAL REPLACEMENT
PLANNING STUDY
EEL RIVER BRIDGE

UNIT: 3578 | BRIDGE No. 04-0016R
SCALE: AS SHOWN | PROJECT No. & PHASE: 0116000148
CONTRACT No.: X

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Hum	101	R53.7/M54.2	.	.

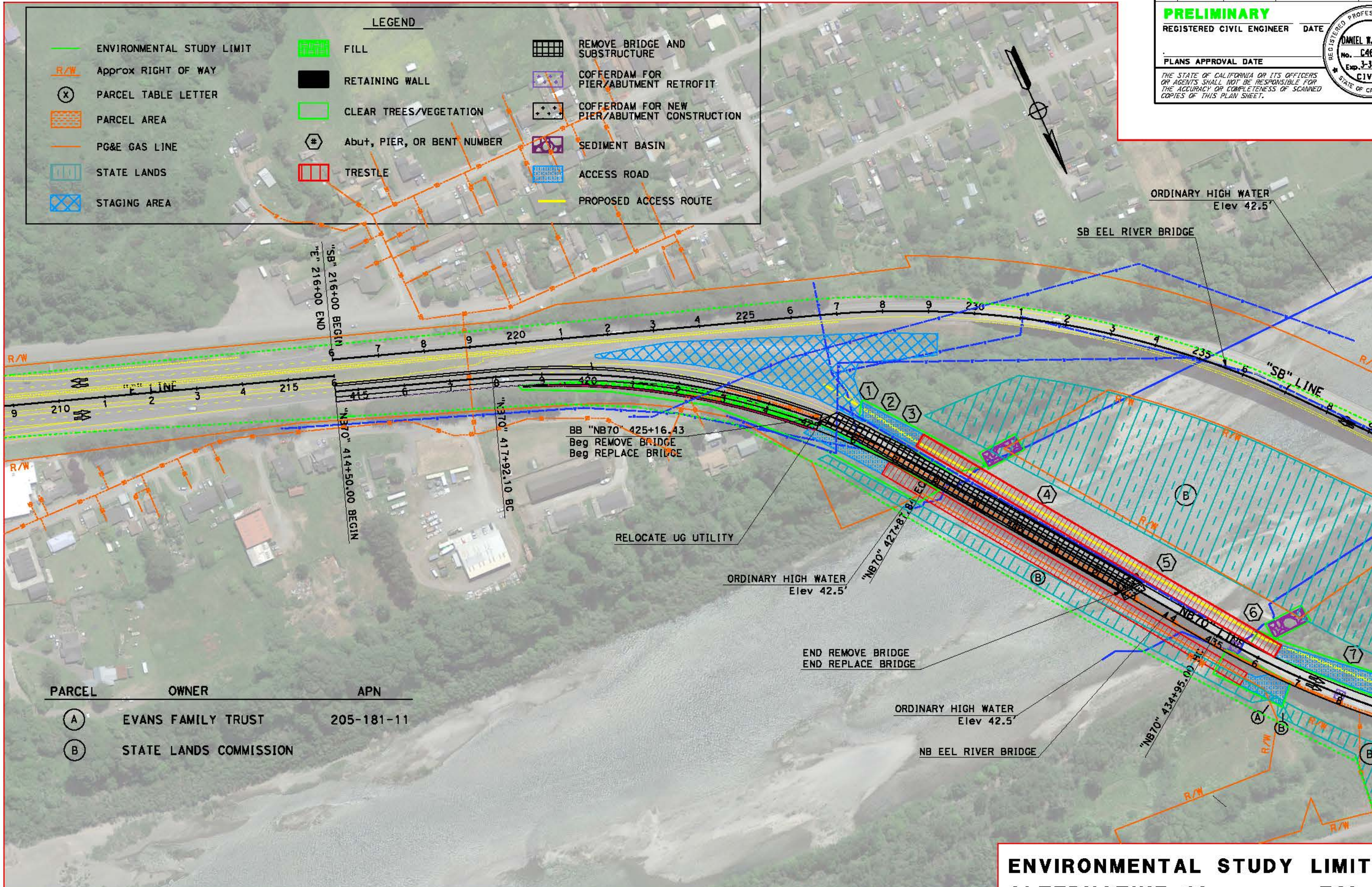
PRELIMINARY

REGISTERED CIVIL ENGINEER DATE

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.

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. STILES
No. C46429
Exp. 3-31-2025
CIVIL
STATE OF CALIFORNIA



PARCEL	OWNER	APN
A	EVANS FAMILY TRUST	205-181-11
B	STATE LANDS COMMISSION	

ENVIRONMENTAL STUDY LIMITS
ALTERNATIVE 1A ESL-9

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: SOCORRO URENA
CALCULATED-DESIGNED BY: MARIFER-BARRIGA
CHECKED BY: .
REVISED BY: DAC
DATE REVISED: 7/11/19

@REQUEST

DATE PLOTTED => @DATE
TIME PLOTTED => @TIME
LAST REVISION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Hum	101	R53.7/M54.2	.	.

PRELIMINARY

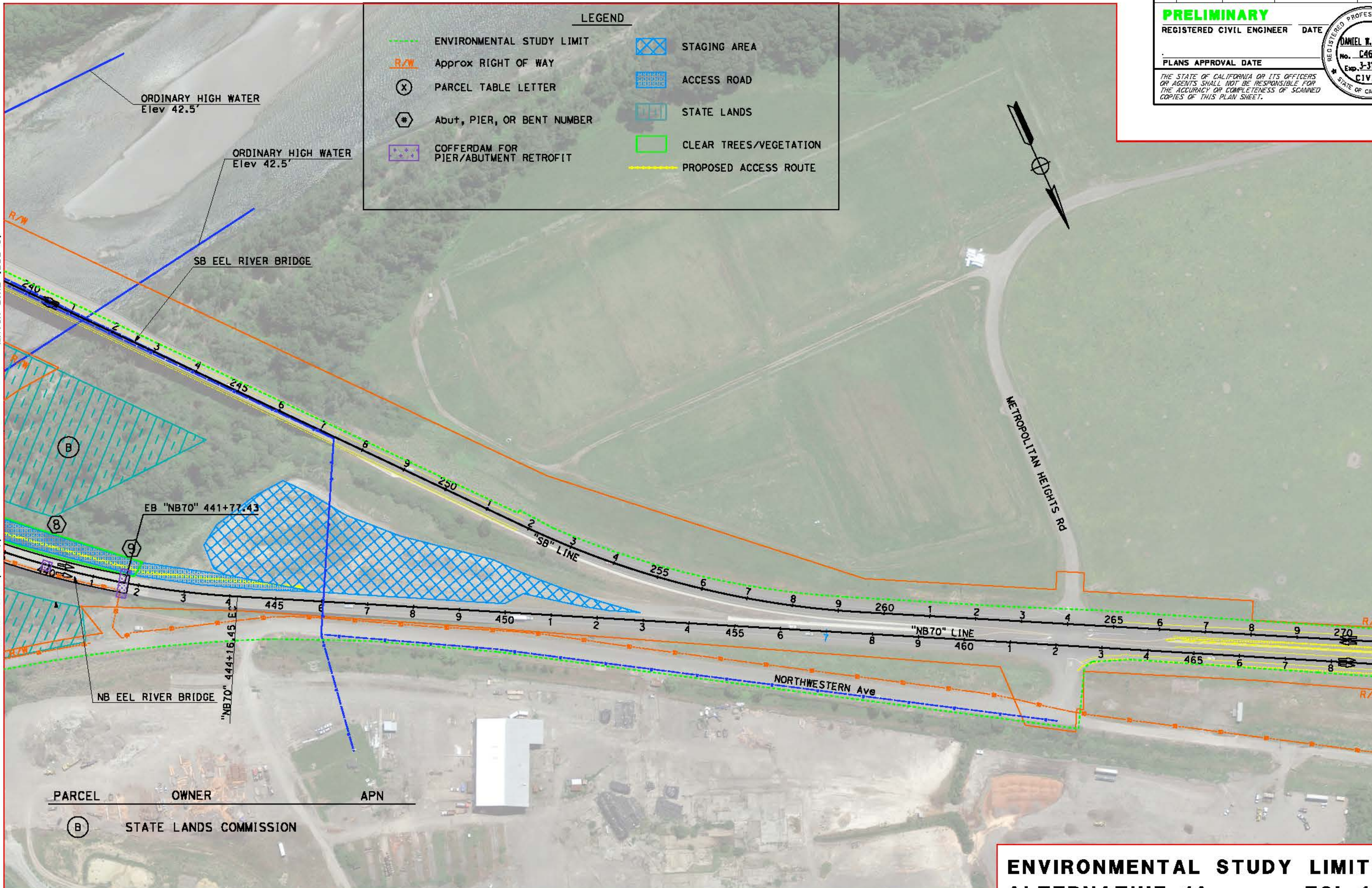
REGISTERED CIVIL ENGINEER DATE

.

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DANIEL W. STILES No. C46429 Exp. 3-31-2025 CIVIL STATE OF CALIFORNIA

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.



PARCEL	OWNER	APN
B	STATE LANDS COMMISSION	

ENVIRONMENTAL STUDY LIMITS
ALTERNATIVE 1A ESL-10

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans DESIGN

FUNCTIONAL SUPERVISOR: SOCORRO URENA | CALCULATED-DESIGNED BY: MARIFER BARRIGA | CHECKED BY: . | REVISED BY: DAC | DATE REVISED: 7/11/19

@REQUEST

DATE PLOTTED => @DATE TIME PLOTTED => @TIME LAST REVISION

Appendix B. Title VI Policy Statement

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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.

September 2021

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."*

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

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, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi .

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 Civil Rights, at 1823 14th Street, MS-79, Sacramento, CA 95811; PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

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Director

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

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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: April 24, 2023
Project Code: 2022-0029496
Project Name: 01-0A111

Subject: List of threatened and endangered species that may occur in your proposed project location 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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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 Code 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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

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

Project Code: 2022-0029496

Project Name: 01-0A111

Project Type: Bridge - Replacement

Project Description: Seismic Retrofit of portions of bridge. Replacement of portion of bridge with steel trestle and piers below. Replace with cement box girder. Vegetation clearing, access road construction, bridge demolition, river diversion, sediment basin construction, concrete jackets around pier bases, and finally revegetation.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.51058535000004,-124.12190626408015,14z

Counties: Humboldt County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 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 Fisheries[1], 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.

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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
Pacific Marten, Coastal Distinct Population Segment *Martes caurina* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

BIRDS

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* 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 does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Western Lily *Lilium occidentale* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/998	Endangered

CRITICAL HABITATS

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

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Sep 30

NAME	BREEDING SEASON
California Gull *Larus californicus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rufous Hummingbird *selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Wrentit *Chamaea fasciata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum

probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ( )

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

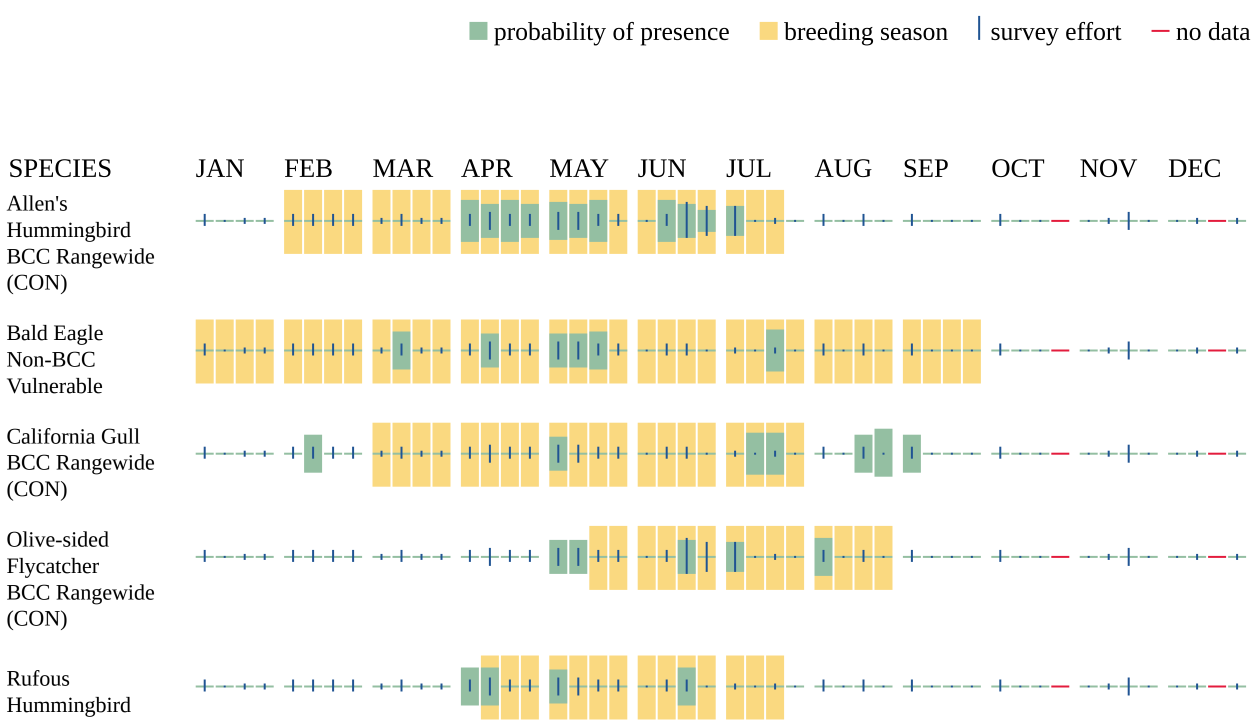
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

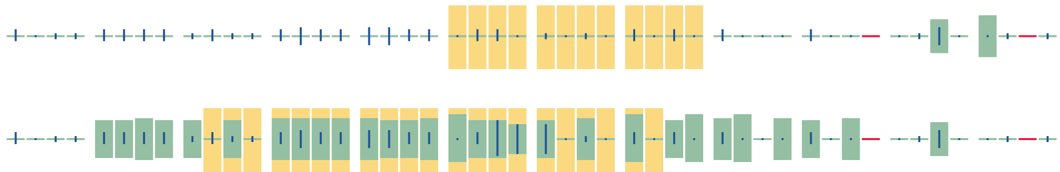
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



BCC Rangewide (CON)

Western Grebe
BCC Rangewide (CON)

Wrentit
BCC Rangewide (CON)



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical

Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM1C

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1C
- PFO1A
- PSS1C
- PSS1A

RIVERINE

- R3USC

IPAC USER CONTACT INFORMATION

Agency: California Department of Transportation District 1
Name: Jeff Wright
Address: 1656 Union Street
City: Eureka
State: CA
Zip: 95501
Email jeff.j.wright@dot.ca.gov
Phone: 7072988226

Quad Name **Hydesville**
Quad Number **40124-E1**

ESA Anadromous Fish

SONCC Coho ESU (T) -	**X**
CCC Coho ESU (E) -	
CC Chinook Salmon ESU (T) -	**X**
CVSR Chinook Salmon ESU (T) -	
SRWR Chinook Salmon ESU (E) -	
NC Steelhead DPS (T) -	**X**
CCC Steelhead DPS (T) -	
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 -	**X**
CCC Coho Critical Habitat -	
CC Chinook Salmon Critical Habitat -	**X**
CVSR Chinook Salmon Critical Habitat -	
SRWR Chinook Salmon Critical Habitat -	
NC Steelhead Critical Habitat -	**X**
CCC Steelhead Critical Habitat -	
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 -	**X**
Coastal Pelagics EFH -	**X**
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 -

Quad Name **Fortuna**
Quad Number **40124-E2**

ESA Anadromous Fish

SONCC Coho ESU (T) -	**X**
CCC Coho ESU (E) -	
CC Chinook Salmon ESU (T) -	**X**
CVSR Chinook Salmon ESU (T) -	
SRWR Chinook Salmon ESU (E) -	
NC Steelhead DPS (T) -	**X**
CCC Steelhead DPS (T) -	
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 -	**X**
CCC Coho Critical Habitat -	
CC Chinook Salmon Critical Habitat -	**X**
CVSR Chinook Salmon Critical Habitat -	
SRWR Chinook Salmon Critical Habitat -	
NC Steelhead Critical Habitat -	**X**
CCC Steelhead Critical Habitat -	
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 -	**X**
Coastal Pelagics EFH -	**X**
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 -

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE RareFind

Query Summary:
Quad IS (Hydesv lle (4012451) OR Fo u a (4012452) OR F elds La d g (4012462) OR McWh ey C eek (4012461) OR Iaqua Bu es (4012368) OR Owl C eek (4012358) OR Redc es (4012348) OR Sco a (4012441) OR Taylo Peak (4012442) OR Ca bal Isla d (4012463) OR Fe dale (4012453) OR Cape ow (4012443))

P Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Ab o a u bella a va . b ev flo a	p k sa d-ve be a	D co s	PDNYC010N4	61	3	No e	No e	G4G5T2	S2	1B.1	BLM_S-Se s ve, SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de	Coas al du es
Acc p e coope	Coope 's hawk	B ds	ABNKC12040	118	6	No e	No e	G5	S4	ull	CDFW_WL-Wa ch L s , IUCN_LC-Leas Co ce	C s o a e woodla d, R pa a fo es , R pa a woodla d, Uppe o a e co fe ous fo es
Acc p e s a us	sha p-sh ed hawk	B ds	ABNKC12020	22	10	No e	No e	G5	S4	ull	CDFW_WL-Wa ch L s , IUCN_LC-Leas Co ce	C s o a e woodla d, Lowe o a e co fe ous fo es , R pa a fo es , R pa a woodla d
Ac pe se ed os s pop.	g ee s u geo - sou he PS	F sh	AFCAA0 03	4		Th ea e ed	No e	G2T	S	ull	AFS_ U- ul e able, IUCN_EN-E da ge ed	Aqua c, Es ua y, Ma e bay, Sac a e o/Sa Joaqu flow g wa e s
Agela us colo	colo ed blac b d	ds	A P X 0020	955		No e	Th ea e ed	G G2	S2	ull	LM_S-Se s ve, C FW_SSC-Spec es of Spec al Co ce , IUCN_EN-E da ge ed, NA CI_RWL-Red Wa ch L s , USFWS_ CC- ds of Co se va o Co ce	F eshwa e a sh, Ma sh & swa p, Swa p, We la d
A od a us sava a u	g asshoppe spa ow	ds	A P XA0020	27		No e	No e	G5	S3	ull	C FW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce	alley & foo h ll g assla d
A odo a cal fo e s s	Cal fo a floa e	Mollus s	IM I 04220	6		No e	No e	G3Q	S2?	ull	USFS_S-Se s ve	Aqua c
A o ob yu julaceu	sle de s lve oss	yophy es	N MUS800 0	3		No e	No e	G5?	S2	4.2	ull	oadleaved upla d fo es , Lowe o a e co fe ous fo es , No h coas co fe ous fo es
A ozous pall dus	pall d ba	Ma als	AMACC 00 0	420		No e	No e	G4	S3	ull	LM_S-Se s ve, C FW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	Chapa al, Coas al sc ub, ese wash, G ea as g assla d, G ea as sc ub, Mojavea dese sc ub, R pa a woodla d, So o a dese sc ub, Uppe o a e co fe ous fo es , alley & foo h ll g assla d
Aplodo a ufa hu bold a a	Hu bold ou a	Ma als	AMAFA0 0 7	28	6	No e	No e	G5TNR	SNR	ull	ull	Coas al sc ub, Redwood,

	beave											R pa a fo es
Aqu la ch ysae os	golde eagle	B ds	ABNKC22010	325	7	No e	No e	G5	S3	ull	BLM_S-Se s ve, CDF_S-Se s ve, CDFW_FP-Fully P o ec ed, CDFW_WL-Wa ch L s , IUCN_LC-Leas Co ce	B oadleaved upla d fo es , C s o a e woodla d, Coas al p a e, G ea Bas g assla d, G ea Bas sc ub, Lowe o a e co fe ous fo es , P o & ju pe woodla ds, Uppe o a e co fe ous fo es , alley & foo h ll g assla d
A bo us po o	So o a ee vole	Ma als	AMAFF23030	222	27	No e	No e	G3	S3	ull	CDFW_SSC-Spec es of Spec al Co ce , IUCN_NT-Nea Th ea e ed	No h coas co fe ous fo es , Oldg ow h, Redwood
A dea alba	g ea eg e	B ds	ABNGA04040	43	4	No e	No e	G5	S4	ull	CDF_S-Se s ve, IUCN_LC-Leas Co ce	B ack sh a sh, Es ua y, F eshwa e a sh, Ma sh & swa p, R pa a fo es , We la d
A dea he od as	g ea blue he o	B ds	ABNGA04010	156	8	No e	No e	G5	S4	ull	CDF_S-Se s ve, IUCN_LC-Leas Co ce	B ack sh a sh, Es ua y, F eshwa e a sh, Ma sh & swa p, R pa a fo es , We la d
Ascaphus ue	Pac f c a led f og	A ph b a s	AAABA01010	491	7	No e	No e	G4	S3S4	ull	CDFW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce	Aqua c, Kla a h/No h coas flow g wa e s, Lowe o a e co fe ous fo es , No h coas co fe ous fo es , Redwood, R pa a fo es
As agalus p c os ach us va . p c os ach us	coas al a sh l -ve ch	D co s	PDFAB0F B2	24		No e	No e	G2T2	S2	B.2	BLM_S-Se s ve, SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de , SB_SBBG-Sa a Ba ba a Bo a c Ga de , SB_UCBG-UC Bo a cal Ga de a Be ele	Coas al du es, Coas al sc ub, Ma sh & swa p, We la d
Bo bus cal g osus	obscu e bu ble bee	I sec s	IIHYM243 0		6	No e	No e	G2G3	S S2	ull	IUCN_ U- ul e able	ull
Bo bus occ de al s	wes e bu ble bee	I sec s	IIHYM24252	306	5	No e	Ca d da e E da ge ed	G3	S	ull	IUCN_ U- ul e able, USFS_S-Se s ve	ull
B ach a phus a o a us	a bled u ele	B ds	ABNNN060 0	0	25	Th ea e ed	E da ge ed	G3	S2	ull	CDF_S-Se s ve, IUCN_EN-E da ge ed, NABCI_RWL-Red Wa ch L s	Lowe o a e co fe ous fo es , Oldg ow h, Redwood
Ca da e a gula a	seas de b e c ess	D co s	PDBRA0 0 0	3		No e	No e	G4G5	S3	2B.	ull	Lowe o a e co fe ous fo es , No h coas co fe ous fo es , We la d
Ca ex a c a	o he clus e ed sedge	Mo oco s	PMCYP030X0	3	3	No e	No e	G5	S	2B.2	IUCN_LC-Leas Co ce	Bog & fe , No h coas co fe ous fo es , We la d
Ca ex lep alea	b s le-s al ed sedge	Mo oco s	PMCYP03 E0			No e	No e	G5	S	2B.2	IUCN_LC-Leas Co ce	Bog & fe , F eshwa e a sh, Ma sh & swa p, Meadow & seep, We la d
Ca ex l gb e	L gb e's sedge	Mo oco s	PMCYP03 Y0	3		No e	No e	G5	S3	2B.2	IUCN_LC-Leas Co ce	Ma sh & swa p, We la d
Cas lleja a b gua va .	Hu bold Ba owl's-	D co s	PDSCR0D402	3	6	No e	No e	G4T2	S2	B.2	BLM_S-Se s ve, SB_UCBG-UC	Ma sh & swa p, Sal a sh,

hu bold e s s	clove										Bo a cal Ga de a Be keley	We la d
Cas lleja l o al s	O ego coas pa b ush	D co s	PDSCR0D012	44	6	No e	No e	G3	S3	2B.2	ull	Coas al bluff sc ub, Coas al du es, Coas al sc ub
Cha ad us o a us	ou a plove	B ds	ABNNB03100	90	1	No e	No e	G3	S2S3	ull	BLM_S-Se s ve, CDFW_SSC-Spec es of Spec al Co ce , IUCN_NT-Nea Th ea e ed, NABCI_RWL-Red Wa ch L s , USFWS_BCC-B ds of Co se va o Co ce	Che opod sc ub, alley & foo h ll g assla d
Cha ad us vosus vosus	wes e s owy plove	B ds	ABNNB03031	138	1	Th ea e ed	No e	G3T3	S3	ull	CDFW_SSC-Spec es of Spec al Co ce , NABCI_RWL-Red Wa ch L s	G ea Bas s a d g wa e s, Sa d sho e, We la d
Chlo opy o a u ssp. palus e	Po Reyes sal y b d's-beak	D co s	PDSCR0J0C3	80	4	No e	No e	G4?T2	S2	1B.2	BLM_S-Se s ve, SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de	Ma sh & swa p, Sal a sh, We la d
Cla k a a oe a ssp. wh ey	Wh ey's fa ewell- o-sp g	D co s	PDONA05025	8	1	No e	No e	G5T1	S1	1B.1	SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de , SB_UCBG-UC Bo a cal Ga de a Be keley	Coas al bluff sc ub, Coas al sc ub
Coas al Te ace P a e	Coas al Te ace P a e	He baceous	CTT41100CA	8	1	No e	No e	G2	S2.1	ull	ull	Coas al p a e
Coccyzus a e ca us occ de al s	wes e yellow-b lled cuckoo	B ds	ABNRB02022	165	2	Th ea e ed	E da ge ed	G5T2T3	S1	ull	BLM_S-Se s ve, NABCI_RWL-Red Wa ch L s , USFS_S-Se s ve	R pa a fo es
Cop s lac a a	O ego gold h ead	D co s	PDRAN0A020	122	3	No e	No e	G4?	S3?	4.2	ull	Meadow & seep, No h coas co fe ous fo es , We la d
Co y o h us ow se d	Tow se d's b g-ea ed ba	Ma als	AMACC08010	635	5	No e	No e	G4	S2	ull	BLM_S-Se s ve, CDF _SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	B oadleaved upla d fo es , Chapa al, Che opod sc ub, G ea Bas g assla d, G ea Bas sc ub, oshua ee woodla d, Lowe o a e co fe ous fo es , Meadow & seep, Mojavea dese sc ub, pa a fo es , pa a woodla d, So o a dese sc ub, So o a ho woodla d, Uppe o a e co fe ous fo es , alley & foo h ll g assla d
Co u cops ovebo ace s s	yellow a l	B ds	ABNME01010	45	1	No e	No e	G4	S1S2	ull	CDF _SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , NABCI_ L- ed a ch L s , USFS_S-Se s ve, USF S_BCC-B ds of Co se va o Co ce	F eshwa e a sh, Meadow & seep
Dow g a w lla e e s s	Cascade dow g a	D co s	PDCAM060E0	8	4	No e	No e	G4	S2	2B.2	ull	C s o a e woodla d, alley & foo h ll g assla d, e al pool
Eg e a hula	s owy eg e	B ds	ABNGA06030	20	1	No e	No e	G5	S4	ull	IUCN_LC-Leas Co ce	Ma sh & swa p, Meadow & seep,

												R pa a fo es , R pa a woodla d, We la d
E ys a o a a	wes e po d u le	Rep les	ARAAD02030	1424	17	No e	No e	G3G4	S3	ull	BLM_S-Se s ve, CDFW_SSC-Spec es of Spec al Co ce , IUCN_ U- ul e able, USFS_S-Se s ve	Aqua c, A f c al flow g wa e s, Kla a h/No h coas flow g wa e s, Kla a h/No h coas s a d g wa e s, Ma sh & swa p, Sac a e o/Sa Joaqu flow g wa e s, Sac a e o/Sa Joaqu s a d g wa e s, Sou h coas flow g wa e s, Sou h coas s a d g wa e s, We la d
E osphe us de a us	Pac f c la p ey	F sh	AFBAA02100	9	3	No e	No e	G4	S3	ull	AFS_ U- ul e able, BLM_S-Se s ve, CDFW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	Aqua c, Kla a h/No h coas flow g wa e s, Sac a e o/Sa Joaqu flow g wa e s, Sou h coas flow g wa e s
E e h zo do sa u	No h A e ca po cup e	Ma als	AMAFJ01010	523	15	No e	No e	G5	S3	ull	IUCN_LC-Leas Co ce	B oadleaved upla d fo es , C s o a e woodla d, Closed-co e co fe ous fo es , Lowe o a e co fe ous fo es , No h coas co fe ous fo es , Uppe o a e co fe ous fo es
E ys u e z es	Me z es' wallflowe	D co s	PDBRA160R0	19	1	E da ge ed	E da ge ed	G1	S1	1B.1	SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de , SB_UCBG-UC Bo a cal Ga de a Be keley	Coas al du es
E y h o u o ego u	g a faw l ly	Mo oco s	PMLIL0U0C0	37	3	No e	No e	G5	S2	2B.2	SB_UCSC-UC Sa a C uz	C s o a e woodla d, Meadow & seep, Ul a af c
E y h o u evolu u	coas faw l ly	Mo oco s	PMLIL0U0F0	172	29	No e	No e	G4G5	S3	2B.2	SB_UCSC-UC Sa a C uz	Bog & fe , B oadleaved upla d fo es , No h coas co fe ous fo es , We la d
Eucyclogob us ewbe y	dewa e goby	F sh	AFCQN04010	127	5	E da ge ed	No e	G3	S3	ull	AFS_EN-E da ge ed, IUCN_NT-Nea Th ea e ed	Aqua c, Kla a h/No h coas flow g wa e s, Sac a e o/Sa Joaqu flow g wa e s, Sou h coas flow g wa e s
Falco pe eg us a a u	A e ca pe eg e falco	B ds	ABNKD06071	73	7	Del s ed	Del s ed	G4T4	S3S4	ull	CDF_S-Se s ve, CDFW_FP-Fully P o ec ed	ull
F ss de s paupe culus	u e pocke oss	B yophy es	NBMUS2W0U0	22	1	No e	No e	G3?	S2	1B.2	USFS_S-Se s ve	No h coas co fe ous fo es , Redwood
G l a cap a a ssp. pac f ca	Pac f c g l a	D co s	PDPLM040B6	91	20	No e	No e	G5T3	S2	1B.2	SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de	Chapa al, Coas al bluff sc ub, Coas al p a e, alley & foo h ll g assla d
G l a llefol a a	da k-eyed g l a	D co s	PDPLM04130	54	1	No e	No e	G2	S2	1B.2	BLM_S-Se s ve, SB_CalBG/RSABG-	Coas al du es

											Cal fo a/Ra cho Sa a A a Bo a c Ga de	
Go dea a gula a	wes e dged ussel	Mollusks	IMBI 19010	157	1	No e	No e	G3	S2	ull	IUCN_ U- ul e able	Aqua c
Hal aee us leucocephalus	bald eagle	B ds	ABNKC10010	332	1	Del s ed	E da ge ed	G5	S3	ull	BLM_S-Se s ve, CDF_S-Se s ve, CDFW_FP-Fully P o ec ed, IUCN_LC-Leas Co ce , USFS_S-Se s ve	Lowe o a e co fe ous fo es , Oldg ow h
Hespe evax spa s flo a va . b ev fol a	sho -leaved evax	D co s	PDASTE5011	72	5	No e	No e	G4T3	S3	1B.2	BLM_S-Se s ve, SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de	Coas al bluff sc ub, Coas al du es, Coas al p a e
La pe a cha dso	wes e b ook la p ey	F sh	AFBAA02180	4	3	No e	No e	G4G5	S3S4	ull	CDFW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	ull
Las u us c e eus	hoa y ba	Ma als	AMACC05032	238	1	No e	No e	G3G4	S4	ull	IUCN_LC-Leas Co ce	B oadleaved upla d fo es , C s o a e woodla d, Lowe o a e co fe ous fo es , No h coas co fe ous fo es
Lay a ca osa	beach lay a	D co s	PDAST5N010	25	1	Th ea e ed	E da ge ed	G2	S2	1B.1	SB_CalBG/RSABG-Cal fo a/Ra cho Sa a A a Bo a c Ga de , SB_SBBG-Sa a Ba ba a Bo a c Ga de	Coas al du es, Coas al sc ub
L l u occ de ale	wes e l ly	Mo oco s	PML L1 G	16	6	E da ge ed	E da ge ed	G1G2	S1	1B.1	SB_Be ySB-Be y Seed Ba	Bog & fe , Coas al bluff sc ub, Coas al p a e, Coas al sc ub, F eshwa e a sh, Ma sh & swa p, No h coas co fe ous fo es , We la d
Lycopod u clava u	u g-p e	Fe s	PPLYC 1	12	34	No e	No e	G	S3	4.1	ull	Lowe o a e co fe ous fo es , Ma sh & swa p, No h coas co fe ous fo es , We la d
Ma ga fe a falca a	wes e pea lshell	Mollus s	MB 27 2	7	1	No e	No e	G4G	S1S2	ull	UCN_NT-Nea Th ea e ed	qua c
Ma es cau a hu bold e s s	Hu bold a e	Ma als	M JF 1 12	44	2	Th ea e ed	E da ge ed	G4G T1	S1	ull	CDFW_SSC-Spec es of Spec al Co ce , USFS_S-Se s ve	No h coas co fe ous fo es , Oldg ow h, Redwood
M ellas a caulesce s	leafy-s e ed ewo	D co s	PDS X N 2	21	1	No e	No e	G	S4	4.2	ull	B oadleaved upla d fo es , Lowe o a e co fe ous fo es , Meadow & seep, No h coas co fe ous fo es
Mo a howell	Howell's o a	D co s	PDPOR 7	123	4	No e	No e	G3G4	S2	2B.2	ull	Meadow & seep, No h coas co fe ous fo es , e al pool, We la d
Myo s vola s	lo g-legged yo s	Ma als	M CC 111	117	1	No e	No e	G4G	S3	ull	UCN_LC-Leas Co ce	Uppe o a e co fe ous fo es
Myo s yu a e s s	Yu a yo s	Ma als	M CC 1 2	26	2	No e	No e	G	S4	ull	BLM_S-Se s ve, UCN_LC-Leas Co ce	Lowe o a e co fe ous fo es , R pa a fo es , R pa a woodla d, Uppe o a e co fe ous fo es
Nava e a leucocephala	Ba e 's ava e a	D co s	PDPLM C E1	64	1	No e	No e	G4T2	S2	1B.1	SB_CalBG/RS BG-Cal fo a/Ra cho	C s o a e woodla d,

ssp. bake											Sa a A a Bo a c Ga de	Lowe o a e co fe ous fo es , Meadow & seep, alley & foo h ll g assla d, e al pool, We la d
Noccaea fe dle ssp. cal fo ca	K eela d P a e pe yc ess	D co s	PDBRA2P041	1	1	E da ge ed	No e	G5?T1	S1	1B.1	SB_UCSC-UC Sa a C uz	B oadleaved upla d fo es , Coas al p a e, Ul a af c
No he Coas al Sal Ma sh	No he Coas al Sal Ma sh	Ma sh	CTT52110CA	53	4	No e	No e	G3	S3.2	ull	ull	Ma sh & swa p, We la d
N c co ax c co ax	blac - c ow ed gh he o	ds	A NGA11010	37	4	No e	No e	G5	S4	ull	IUCN_LC-Leas Co ce	Ma sh & swa p, R pa a fo es , R pa a woodla d, We la d
Oe o he a wolf	Wolf s eve g- p ose	D co s	PDONA0C1 0	29	1	No e	No e	G2	S1	1 .1	S _ e S - e Seed a	Coas al bluff sc ub, Coas al du es, Coas al p a e
O co h chus cla cla	coas cu h oa ou	F sh	AFCHA0208A	45	5	No e	No e	G5T4	S3	ull	AFS_ U- ul e able, CDFW_SSC-Spec es of Spec al Co ce , USFS_S-Se s ve	Aqua c, la a h/No h coas flow g wa e s
O co h chus su ch pop. 2	coho sal o - sou he O ego / o he Cal fo a ESU	F sh	AFCHA02032	10	3	Th ea e ed	Th ea e ed	G5T2Q	S2	ull	AFS_TH-Th ea e ed	Aqua c, la a h/No h coas flow g wa e s, Sac a e o/Sa Joaqu flow g wa e s
O co h chus ss deus pop. 48	s eelhead - o he Cal fo a DPS su e - u	F sh	AFCHA0213P	10	4	Th ea e ed	E da ge ed	G5T2Q	S2	ull	AFS_TH-Th ea e ed	Aqua c, Es ua , la a h/No h coas flow g wa e s
O co h chus ss deus pop. 49	s eelhead - o he Cal fo a DPS w e - u	F sh	AFCHA0213Q	32	8	Th ea e ed	No e	G5T3Q	S3	ull	AFS_TH-Th ea e ed	Aqua c, Es ua , la a h/No h coas flow g wa e s
O co h chus shaw scha pop. 17	ch oo sal o - Cal fo a coas al ESU	F sh	AFCHA0205S	1	1	Th ea e ed	No e	G5T2Q	S2	ull	AFS_TH-Th ea e ed	Aqua c, Sac a e o/Sa Joaqu flow g wa e s
Pac e a bola de va . bola de	seacoas agwo	D co s	PDAST8H0H1	72	3	No e	No e	G4T4	S2S3	2 .2	ull	Coas al sc ub, No h coas co fe ous fo es
Pa d o hal ae us	osp e	ds	A N C01010	504	5	No e	No e	G5	S4	ull	CDF_S-Se s ve, CDFW_WL-Wa ch L s , IUCN_LC-Leas Co ce	R pa a fo es
Pe a a pe a	F she	Ma als	AMAJF01020	555	2	No e	No e	G5	S2S3	ull	LM_S-Se s ve, CDFW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	No h coas co fe ous fo es , Oldg ow h, R pa a fo es
P pe a ca d da	wh e-flowe ed e o ch d	Mo oco s	PMORC1X050	222	7	No e	No e	G3?	S3	1 .2	S _Cal G/RSA G-Cal fo a/Ra cho Sa a A a o a c Ga de	oadleaved upla d fo es , Lowe o a e co fe ous fo es , No h coas co fe ous fo es , Ul a af c
Pla s a a lacu osa	c led ag l che	L che s	NLLEC2Q010	4	1	No e	No e	G4	S1	2 .3	ull	No h coas co fe ous fo es , R pa a woodla d
Ple hodo elo ga us	Del No e sala a de	A ph b a s	AAAAD12050	151	1	No e	No e	G4	S3	ull	CDFW_WL-Wa ch L s , IUCN_NT-Nea Th ea e ed	Oldg ow h
Pole o u ca eu	O ego pole o u	D co s	PDPLM0E050	1	1	No e	No e	G3G4	S2	2 .2	ull	Coas al p a e, Coas al sc ub, Lowe o a e co fe ous fo es

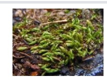
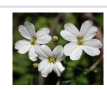
Pucc ell a pu la	dwa f alkal g ass	Mo oco s	PMPOA531L0	2	1	No e	No e	G5	SH	2B.2	ull	Ma sh & swa p, We la d
Ra a au o a	o he ed-legged f og	A ph b a s	AAABH01021	292	44	No e	No e	G4	S3	ull	CDFW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	Kla a h/No h coas flow g wa e s, R pa a fo es , R pa a woodla d
Ra a boyl pop. 1	foo h ll yellow-legged f og - o h coas DPS	A ph b a s	AAABH01051	1606	51	No e	No e	G3T4	S4	ull	BLM_S-Se s ve, CDFW_SSC-Spec es of Spec al Co ce , USFS_S-Se s ve	Aqua c, Kla a h/No h coas flow g wa e s, R pa a fo es , R pa a sc ub, R pa a woodla d
Rhyaco o va ega us	sou he o e sala a de	A ph b a s	AAAAJ01020	416	16	No e	No e	G3?	S2S3	ull	CDFW_SSC-Spec es of Spec al Co ce , IUCN_LC-Leas Co ce , USFS_S-Se s ve	Lowe o a e co fe ous fo es , Oldg ow h, Redwood, R pa a fo es
R pa a pa a	ba k swallow	B ds	ABPAU08010	299	5	No e	Th ea e ed	G5	S3	ull	BLM_S-Se s ve, IUCN_LC-Leas Co ce	R pa a sc ub, R pa a woodla d
S dalcea alach o des	aple-leaved checke bloo	D co s	PDMAL110E0	136	61	No e	No e	G3	S3	4.2	ull	B oadleaved upla d fo es , Coas al p a e, Coas al sc ub, No h coas co fe ous fo es , R pa a fo es
S dalcea alv flo a ssp. pa ula	S sk you checke bloo	D co s	PDMAL110F9	60	20	No e	No e	G5T2	S2	1B.2	SB_UCSC-UC Sa a C uz	Coas al bluff sc ub, Coas al p a e, No h coas co fe ous fo es
S dalcea o ega a ssp. ex a	coas checke bloo	D co s	PDMAL110K9	19	5	No e	No e	G5T1	S1	1B.2	ull	Lowe o a e co fe ous fo es , Meadow & seep, No h coas co fe ous fo es , We la d
S sy ch u h chcock	H chcock's blue-eyed g ass	Mo oco s	PMIRI0D0S0	1	1	No e	No e	G1G2	S1	1B.1	ull	C s o a e woodla d, alley & foo h ll g assla d
S ka Sp uce Fo es	S ka Sp uce Fo es	Fo es	CTT82110CA	4	1	No e	No e	G1	S1.1	ull	ull	ull
Spe gula a ca ade s s va . occ de al s	wes e sa d-spu ey	D co s	PDCAR0W032	4	1	No e	No e	G5T4	S1	2B.1	ull	Ma sh & swa p, We la d
Sp chus hale ch hys	lo gf s el	F sh	AFCHB03010	46	4	Ca d da e	Th ea e ed	G5	S1	ull	IUCN_LC-Leas Co ce	Aqua c, Es ua y
Thale ch hys pac f cus	eulacho	F sh	AFCHB04010	10	1	Th ea e ed	No e	G5	S1	ull	IUCN_LC-Leas Co ce	Aqua c, Kla a h/No h coas flow g wa e s
Upla d Douglas F Fo es	Upla d Douglas F Fo es	Fo es	CTT82420CA	15	1	No e	No e	G4	S3.1	ull	ull	No h coas co fe ous fo es
Us ea lo g ss a	Me huselah's bea d l che	L che s	NLLEC5P420	206	107	No e	No e	G4	S4	4.2	BLM_S-Se s ve	B oadleaved upla d fo es , No h coas co fe ous fo es , Oldg ow h, Redwood

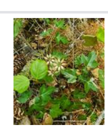
California Native Plant Society

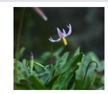
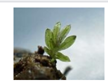
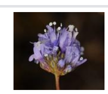
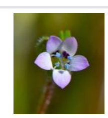
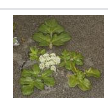
Search Results

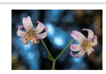
59 matches found. Click on scientific name for details

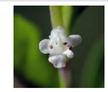
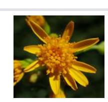
Search Criteria: Quad is one of [**4012451:4012452:4012462:4012461:4012368:4012358:4012348:4012441:4012442:4012443:4012463:4012453**]

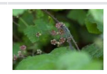
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	annual herb	Jun-Oct	None	None	G4G5T2	S2	1B.1		1988-01-01	 ©2021 Scot Loring
Angelica lucida	sea-watch	Apiaceae	perennial herb	Apr-Sep	None	None	G5	S3	4.2		2001-01-01	 © 2022 Stillwater Sciences
Anomobryum julaceum	slender silver moss	Bryaceae	moss		None	None	G5?	S2	4.2		2001-01-01	 © 2013 Scot Loring
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Fabaceae	perennial herb	(Apr)Jun-Oct	None	None	G2T2	S2	1B.2	Yes	2001-01-01	 ©2009 Neal Kramer
Astragalus rattanii var. rattanii	Rattan's milk-vetch	Fabaceae	perennial herb	Apr-Jul	None	None	G4T4	S4	4.3	Yes	1988-01-01	No Photo Available
Cardamine angulata	seaside bittercress	Brassicaceae	perennial herb	(Jan)Mar-Jul	None	None	G4G5	S3	2B.2		2012-04-10	 © 2021 Scot Loring
Carex arcta	northern clustered sedge	Cyperaceae	perennial herb	Jun-Sep	None	None	G5	S1	2B.2		2001-01-01	 © 2006 Dean Wm. Taylor

Carex e a ea	istle-stalked sedge	Cype aceae	pe ennial hi o atous he	a -Jul	None	None	G5	1	2 .2		199 -01-01	 © 2003 teve atson
Carex yngbyei	Lyng ye's sedge	Cype aceae	pe ennial hi o atous he	Ap -Aug	None	None	G5	3	2 .2		2001-01-01	 ©2017 teve atson
Cas i e a ambigua va . ambigua	johnny-nip	O o anchaceae	annual he (he ipa asitic)	a -Aug	None	None	G T	3	.2		2009-02-0	 ©2011 Dylan Neu aue
Cas i e a ambigua va . humbo d iensis	Hu oldt ay owl's-clove	O o anchaceae	annual he (he ipa asitic)	Ap -Aug	None	None	G T2	2	1 .2	Yes	197 -01-01	 ©2017 teve atson
Cas i e a i ora is	O egon coast paint ush	O o anchaceae	pe ennial he (he ipa asitic)	Jun	None	None	G3	3	2 .2		2001-01-01	 ©2010 Dana Yo k
Ch oro yron mari imum ssp. a us re	Point Reyes salty i d's-eak	O o anchaceae	annual he (he ipa asitic)	Jun-Oct	None	None	G ?T2	2	1 .2		197 -01-01	 ©2017 John Doyen
Chrysos enium g echomifo ium	Pacific golden saxif age	axif agaceae	pe ennial he	Fe -Jun	None	None	G5?	3	.3		2015-10-15	 © 2021 cot Lo ing
C arkia amoena ssp. whi neyi	Whitney's fa ewell-to-sp ing	Onag aceae	annual he	Jun-Aug	None	None	G5T1	1	1 .1	Yes	1980-01-01	No Photo Availa le
Co omia racyi	T acy's collo ia	Pole oniaceae	annual he	Jun-Jul	None	None	G		.3	Yes	197 -01-01	 ©2018 Julie Kie stead Nelson
Co is acinia a	O egon goldth ead	Ranunculaceae	pe ennial hi o atous he	(Fe) a - ay(ep-Nov)	None	None	G ?	3?	.2		2006-10-16	 © 2021 cot Lo ing

Downingi wi nsis	Cascade downingia	Campanulaceae	annual he b	un- ul(Sep)	one	one	G4	S	B.		18- 9-	o Photo Available
Epi obiu s p n rion	Humboldt County fuchsia	nag aceae	pe ennial he b	ul-Sep	one	one	G4	S4	4.3	Yes	1974- 1- 1	 Image by BLM,A cata Field ffice
Erysi u nzi sii	Menzies' wallflowe	B assicaceae	pe ennial he b	Ma -Sep	FE	CE	G1	S1	1B.1	Yes	1974- 1- 1	 © 7 Steve Matson
Ery hroniu or gonu	giant fawn lily	Liliaceae	pe ennial he b	Ma - un(ul)	one	one	G5	S	B.		7- 7- 3	 © 1 Scot Lo ing
Ery hroniu r vo u u	coast fawn lily	Liliaceae	pe ennial bulbife ous he b	Ma - ul(Aug)	one	one	G4G5	S3	B.		1- 1- 1	 © 7 Steve Matson
Fissid ns p up rcu us	minute pocket moss	Fissidentaceae	moss		one	one	G3?	S	1B.		1- 1- 1	 © 1 Scot Lo ing
Fri i ri purdyi	Pu dy's f itilla y	Liliaceae	pe ennial bulbife ous he b	Ma - un	one	one	G4	S4	4.3		1974- 1- 1	 Aa on Schusteff, 4
Gi i c pi ssp. p cific	Pacific gilia	Polemoniaceae	annual he b	Ap -Aug	one	one	G5T3	S	1B.		1- 1- 1	 © 16 Steve Matson
Gi i i fo i	da k-eyed gilia	Polemoniaceae	annual he b	Ap - ul	one	one	G	S	1B.		1- 1- 1	 © 17 ohn Doyen
G hni i or is ssp. ioc rp	Ame ican glehnia	Apiaceae	pe ennial he b	May-Aug	one	one	G5T5	S S3	4.		1- 1- 1	 © 17 Steve Matson

Hemizo i o e t ssp. *tr yi*	Tracy's tarplant	steraceae	ann al her	(Mar- pr)May- ct	None	None	5T4	4	4.3	Yes	1974-01-01	 © 2016 teve Matson
He perev x p r iflor var. *revifoli*	short-leaved evax	steraceae	ann al her	Mar-J n	None	None	4T3	3	1B.2		1994-01-01	 © 2006 Doreen L. mith
Ho ki r ili	harleq in lot s	Fa aceae	perennial rhizomato s her	Mar-J l	None	None	3 4	3	4.2		2004-01-01	 © 2015 John Doyen
L thyru l dulo u	sticky pea	Fa aceae	perennial rhizomato s her	pr-J n	None	None	3	3	4.3	Yes	1988-01-01	 2015 Barrett Jeffery
L yi r o	each layia	steraceae	ann al her	Mar-J l	FT	CE	2	2	1B.1		1988-01-01	 © 2007 aron ch steff
Lilium kello ii	Kellogg's lily	Liliaceae	perennial l ifero s her	(Fe)May- g	None	None	3	3	4.3		1974-01-01	 © 2019 pencer Riffle
Lilium o ide t le	western lily	Liliaceae	perennial l ifero s her	J n-J l	FE	CE	1 2	1	1B.1		1974-01-01	 © 2018 Jason Matthias Mills
Lilium ru e e	redwood lily	Liliaceae	perennial l ifero s her	(Mar) pr- g(ep)	None	None	3	3	4.2	Yes	1974-01-01	 erald and B ff Corsi © 2022 California cademy of ciences

Lister r t	heart-leaved twayblade	Orchidaceae	pere ial herb	eb-J l	No e	No e	G5	4	4.		19 4-01-01	 © 013 Dr. Amadej Tr koczy 0000 0000 0513 468
Ly p iu l v tu	r i g-pi e	Lycopodiaceae	pere ial rhizomato s herb	J - A g(ep)	No e	No e	G5	3	4.1		19 4-01-01	 © 0 1 cot Lori g
Ly pus unifl rus	orther b gleweed	Lamiaceae	pere ial herb	J l- ep	No e	No e	G5	4	4.3		1980-01-01	 © 0 1 cot Lori g
Mitell str ules ens	leafy-stemmed mitrewort	axifragaceae	pere ial rhizomato s herb	(Mar)Apr-Oct	No e	No e	G5	4	4.		001-01-01	 © 014 Da a York
M nti h wellii	Howell's mo tia	Mo tiaceae	a al herb	(eb)Mar-May	No e	No e	G3G4		B.		1994-01-01	 © 004 Dea Wm. Taylor
N v rreti leu eph l ssp. b keri	Baker's avarretia	Polemo iaceae	a al herb	Apr-J l	No e	No e	G4T		1B.1	Yes	1994-01-01	 © 018 Barry Rice
N e fen leri ssp. lif rni	K eela d Prairie pe ycress	Brassicaceae	pere ial herb	May-J	E	No e	G5?T1	1	1B.1	Yes	1980-01-01	No Photo Available
Oen ther w lfii	Wolf's eve i g-primrose	O agraceae	pere ial herb	May-Oct	No e	No e	G	1	1B.1		1980-01-01	 © 01 Da a York
P ker b l n eri var. b l n eri	seacoast ragwort	Asteraceae	pere ial rhizomato s herb	(Ja - Apr)May-J l(A g)	No e	No e	G4T4	3	B.		001-01-01	 © 0 1 cot Lori g
Piperi n i	white-flowered rei orchid	Orchidaceae	pere ial herb	(Mar-Apr)May- ep	No e	No e	G3?	3	1B.		1994-01-01	 © 016 Barry Rice

Pityop iforni	California pinefoot	Ericaceae	perennial her (achloroph llous)	(Mar Apr)Ma Aug	one	one	G4G	S4	4.2		1974 01 01	 ©2009 Barr Rice
P ti m ti no	crinkled rag lichen	Parmeliaceae	foliose lichen (epiph tic)		one	one	G4	S1	2B.		2022 09 28	 © 2014 Chris Wagner
P e ropogon refr t	nodding semaphore grass	Poaceae	perennial rhizomatous her	(Fe Mar)Apr Aug	one	one	G4	S4	4.2		1974 01 01	 ©2004 Dean Wm. Ta lor
Po emoni m rne m	Oregon polemonium	Polemoniaceae	perennial her	Apr Sep	one	one	G G4	S2	2B.2		2008 11 0	 ©2018 John Do en
P ine i p mi	dwarf alkali grass	Poaceae	perennial her	Jul	one	one	G	SH	2B.2		1988 01 01	o Photo Availa le
Ribe xif or m	trailing lack currant	Grossulariaceae	perennial deciduous shru	Mar Jul(Aug)	one	one	G ?	S	4.		1974 01 01	 ©2010 Dana York
Ribe roez ii var. mi t m	hoar goose err	Grossulariaceae	perennial deciduous shru	Mar Apr	one	one	G T4	S4	4.	Yes	2001 01 01	 ©197 Dean Wm. Ta lor
Sid e m hroide	maple leaved checker loom	Malvaceae	perennial her	(Mar)Apr Aug	one	one	G	S	4.2		1994 01 01	 ©200 Dean Wm. Ta lor
Sid e m vif or ssp. p t	Siski ou checker loom	Malvaceae	perennial rhizomatous her	(Mar)Ma Aug	one	one	G T2	S2	1B.2		1994 01 01	 ©2004 Dean Wm. Ta lor
Sid e oreg n ssp. eximi	coast checker loom	Malvaceae	perennial her	Jun Aug	one	one	G T1	S1	1B.2	Yes	1994 01 01	o Photo Availa le

Sisyrinc i i c c ckii	Hitchcock's blue-eye g ass	i aceae	pe ennial hizomatous he b	un	None	None	G G2	S	.	2004-0 -0	 ©2009 Dana Yo k
Sperg laria canadensis va . *cciden alis*	este n san - spu ey	Ca yophyllaceae	annual he b	un-Aug	None	None	G5T4	S	2 .	200 - 0 -0	No Photo Available
Tiarella rif lia a va . *rif lia a*	t ifoliate laceflo e	Saxif agaceae	pe ennial hizomatous he b	(May) un-Aug	None	None	G5T5	S2S3	3.2	980-0 -0	 © 202 Scot Lo ing
Usnea l ngissi a	Methuselah's bea lichen	Pa meliaceae	f uticose lichen (epiphytic)		None	None	G4	S4	4.2	20 4-03-0	 © 202 Scot Lo ing

Sho ing to 59 of 59 ent ies

Suggested Citation:

Califo nia Native Plant Society, a e Plant P og am. 2023. a e Plant nvento y (online e ition, v9.5). Website https // . a eplants.cnps.o g [accesse 24 Ap il 2023].

Appendix D. Wetland Delineation Forms

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WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic   City/County: Humboldt   Sampling Date: 08/02/2021
Applicant/Owner: Caltrans   State: California   Sampling Point: SP1
Investigator(s): Gabe Youngblood   Section, Township, Range: Sec. 31, T.2N., R.1E.
Landform (hillslope, terrace, etc): Terrace   Local relief (concave, convex, none): none   Slope (%): 2
Subregion (LRR): LRR A   Lat: 40.508057   Long: -124.118596   Datum: NAD83
Soil Map Unit Name: Dungan, 0 to 2 percent slopes   NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed?   Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic?   (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
Data point documents a wetland where highway median runoff spreads out from a ditch across an area which was graded for highway construction.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1. *Salix lasiolepis* / Arroyo willow	30	Yes	FACW
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Juncus effusus* / Common bog rush, Soft or lamp rush	90	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	
% Bare Ground in Herb Statum 10			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	120	x 2 =	240
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		240 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type¹	Loc²	Texture	Remarks
0-2	10YR 2/1	100					Silt Loam	
2-8	10YR 2/1	40	2.5Y 5/2	60	D	M	Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

Soils meet the requirements for indicator F7 depleted dark surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):		
Water Table Present?	Yes ___	No X	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):		

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sediment deposits provide evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic | City/County: Humboldt | Sampling Date: 08/02/2021
Applicant/Owner: Caltrans | State: California | Sampling Point: SP2
Investigator(s): Gabe Youngblood | Section, Township, Range: Sec. 31, T.2.N., R.1E.
Landform (hillslope, terrace, etc): Terrace | Local relief (concave, convex, none): none | Slope (%): 2
Subregion (LRR): LRR A | Lat: 40.508043 | Long: -124.118604 | Datum: NAD83
Soil Map Unit Name: Dungan, 0 to 2 percent slopes | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		X
Hydric Soil Present?		X
Wetland Hydrology Present?		X
Is the Sampled Area within a Wetland?		X

Remarks:
Sample point documents upland conditions adjacent to a wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Bromus hordeaceus* / Soft chess	40	Yes	FACU
2. *Vulpia myuros* / Rattail fescue	20	Yes	FACU
3. *Dactylis glomerata* / Orchardgrass	15	No	FACU
4. *Avena barbata* / Slim oat, Slender wild oat	5	No	NI
5. *Briza maxima* / Rattlesnake grass, Rattlesnake grass, Large	5	No	NI
6. *Juncus effusus* / Common bog rush, Soft or lamp rush	5	No	FACW
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Statum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	10	x 5 =	50
Column Totals:	90 (A)		360 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks:
Hydrophytic vegetation is not dominant.

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

No indicators of hydric soils were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology were observed.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic	City/County: Humboldt		Sampling Date: 08/02/2021
Applicant/Owner: Caltrans		State: California	Sampling Point: SP3
Investigator(s): Gabe Youngblood	Section, Township, Range: Sec. 36, T.2.N., R.1W.		
Landform (hillslope, terrace, etc): Drainage	Local relief (concave, convex, none): none		Slope (%): 1
Subregion (LRR): LRR A	Lat: 40.508937	Long: -124.121912	Datum: NAD83
Soil Map Unit Name: Water and Fluvents, 0 to 2 percent slopes		NWI classification: none	

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___
Is the Sampled Area within a Wetland?	Yes X	No ___

Remarks:
Sample point documents a wetland on the active channel of the Eel River at the confluence of a small perennial stream.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1. *Salix lucida* / Shining willow	30	Yes	FACW
2. *Salix sitchensis* / Coulter willow, Sitka willow	1	No	FACW
3.			
4.			
5.			
	31	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Juncus bufonius* / Common toad rush, Toad rush	7	Yes	FACW
2. *Rumex salicifolius* / Willow leaved dock, Willow dock	5	Yes	FACW
3. *Cyperus eragrostis* / Tall cyperus	5	Yes	FACW
4. *Mentha pulegium* / Pennyroyal	3	No	OBL
5. *Polypogon monspeliensis* / Annual beard grass, Annual bear	3	No	FACW
6. *Gnaphalium palustre* / Lowland cudweed	2	No	FACW
7.			
8.			
9.			
10.			
11.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	
% Bare Ground in Herb Statum 10			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	53	x 2 =	106
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	56 (A)		109 (B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0¹
___ 4 - Morphological Adaptations¹ (Provide supporting
___ 5 - Wetland Non-Vascular Plants¹
___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type¹	Loc²	Texture	Remarks
0-5	2.5Y 4/1	85	10YR 4/4	5	C	PL	Silt Loam	
			2.5Y 5/1	10	D	M	Silt Loam	
5-12	2.5Y 4/1	100					Coarse Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X No ___

Remarks:

Soils meet the requirements for indicator F6 depleted matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sediment deposits and drift deposits provide evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic City/County: Humboldt Sampling Date: 08/31/2021
Applicant/Owner: Caltrans State: California Sampling Point: SP4
Investigator(s): Gabe Youngblood Section, Township, Range: Sec. 36, T.2N., R.1W.
Landform (hillslope, terrace, etc): Drainage Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): LRR A Lat: 40.508949 Long: -124.121916 Datum: NAD83
Soil Map Unit Name: Water and Fluvents, 0 to 2 percent slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	X	
Hydric Soil Present?		X
Wetland Hydrology Present?	X	
Is the Sampled Area within a Wetland?		X

Remarks:
Sample point documents point on the active channel of the Eel River where hydric soils drop out due to lack of redoxomrphic features.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1. *Salix lucida* / Shining willow	30	Yes	FACW
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Melilotus officinalis* / Yellow sweetclover	20	Yes	FACU
2. *Mentha pulegium* / Pennyroyal	15	Yes	OBL
3. *Cyperus eragrostis* / Tall cyperus	10	No	FACW
4. *Xanthium strumarium* / Cocklebur	10	No	FAC
5. *Polypogon monspeliensis* / Annual beard grass, Annual bear	10	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Statum 35

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:			Multiply by:
OBL species	15	x 1 =	15
FACW species	50	x 2 =	100
FAC species	10	x 3 =	30
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	95 (A)		225 (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: SP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type¹	Loc²	Texture	Remarks
0-12	2.5Y 4/1	100					Coarse Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

No indicators of hydric soil were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
X Sediment Deposits (B2)
X Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sediment deposits and drift deposits provide evidence of wetland hydrology. Other waters feature (Eel River).

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic | City/County: Humboldt | Sampling Date: 08/02/2021
Applicant/Owner: Caltrans | State: California | Sampling Point: SP5
Investigator(s): Gabe Youngblood | Section, Township, Range: Sec. 31, T.2N., R.1E.
Landform (hillslope, terrace, etc): Drainage | Local relief (concave, convex, none): none | Slope (%): 1
Subregion (LRR): LRR A | Lat: 40.508895 | Long: -124.120563 | Datum: NAD83
Soil Map Unit Name: Dungan, 0 to 2 percent slopes | NWI classification: PFO1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	X	
Hydric Soil Present?		X
Wetland Hydrology Present?	X	
Is the Sampled Area within a Wetland?		X

Remarks:
Sample point documents a lack of hydric soils on willow dominated banks of the Eel River above the OHWM. Sediment and drift deposits observed are believed to be from a major flood event rather than an ordinary high water event.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 foot radius)			
1. *Salix sitchensis* / Coulter willow, Sitka willow	40	Yes	FACW
2.			
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1. *Salix sitchensis* / Coulter willow, Sitka willow	40	Yes	FACW
2. *Rubus ursinus* / California blackberry	10	Yes	FACU
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Equisetum telmateia* / Giant horsetail	2	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	2	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Statum 98

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	82	x 2 =	164
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	92 (A)		204 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: SP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type¹	Loc²	Texture	Remarks
0-16	2.5Y 4/1	100					Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:

No hydric soil indicators were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
X Sediment Deposits (B2)
X Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sediment deposits and drift deposits provide evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic City/County: Humboldt Sampling Date: 08/03/2021
Applicant/Owner: Caltrans State: California Sampling Point: SP6
Investigator(s): Gabe Youngblood Section, Township, Range: Sec. 36, T.2N., R.1W.
Landform (hillslope, terrace, etc): Drainage Local relief (concave, convex, none): none Slope (%): 3
Subregion (LRR): LRR A Lat: 40.510705 Long: -124.121082 Datum: NAD83
Soil Map Unit Name: Dungan, 0 to 2 percent slopes NWI classification: PSS1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	
Hydric Soil Present?	Yes ___ No X	**Is the Sampled Area**
Wetland Hydrology Present?	Yes X No ___	**within a Wetland?** Yes ___ No X

Remarks:
Sample point documents area adjacent to the Eel River with hydrophytic vegetation and wetland hydrology indicators but lacking hydric soils.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30 foot radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus balsamifera* / Balsam poplar	40	Yes	FAC
2.			
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1. *Populus balsamifera* / Balsam poplar	30	Yes	FAC
2. *Rubus armeniacus* / Himalayan blackberry	10	Yes	FAC
3. *Fraxinus latifolia* / Oregon ash	2	No	FACW
4.			
5.			
	42	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Euthamia occidentalis* / Western goldenrod	5	Yes	FACW
2. *Piptatherum miliaceum* / Smilograss	2	Yes	NI
3. *Mentha pulegium* / Pennyroyal	2	Yes	OBL
4. *Artemisia douglasiana* / California mugwort	1	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Statum 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	8	x 2 =	16
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	92 (A)		268 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: SP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type¹	Loc²	Texture	Remarks
0-16	2.5Y 4/1	100					Fine Sndy Lm	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric Soil Present? Yes ___ No X

Remarks:
No indicators of hydric soil were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
X Sediment Deposits (B2)
X Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drift deposits and sediment deposits provide evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, & Coast

Project/Site: Eel River Bridge Seismic City/County: Humboldt Sampling Date: 08/30/2021
Applicant/Owner: Caltrans State: California Sampling Point: SP7
Investigator(s): Gabe Youngblood, Laurel Hoffman Section, Township, Range: Sec. 36, T.2N., R.1W.
Landform (hillslope, terrace, etc): Drainage Local relief (concave, convex, none): concave Slope (%): 7
Subregion (LRR): LRR A Lat: 40.510501 Long: -124.121671 Datum: NAD83
Soil Map Unit Name: Dungan, 0 to 2 percent slopes NWI classification: PFO1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	X	
Hydric Soil Present?		X
Wetland Hydrology Present?	X	
Is the Sampled Area within a Wetland?		X

Remarks:
Sample point documents point on the active channel of the Eel River with hydrophytic vegetation and wetland hydrology indicators but lacking hydric soils.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 foot radius)			
1.	0		
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 foot radius)			
1. *Alnus rubra* / Red alder	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 foot radius)			
1. *Scirpus microcarpus* / Mountain bog bulrush	30	Yes	OBL
2. *Schoenoplectus pungens* / Common threesquare	30	Yes	OBL
3. *Equisetum laevigatum* / Smooth scouring rush	10	No	FACW
4. *Alisma lanceolatum* / Water plantain	8	No	OBL
5. *Mentha pulegium* / Pennyroyal	2	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Statum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		105 (B)

Prevalence Index = B/A = 1.24

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Hydrophytic vegetation is dominant.

SOIL

Sampling Point: SP7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/2	100					Lm Fine Sand	
4-6	2.5Y 3/2	95	10YR 3/4	5	C	PL	Lm Fine Sand	
6-16	GLEY 1 2.5/N	100					Lm Fine Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:
No indicators of hydric soil were observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?		X	
Water Table Present?		X	14
Saturation Present? (includes capillary fringe)	X		4

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drift deposits, sediment deposits, saturation, FAC-neutral test, and geomorphic position (stream bed) provide evidence of wetland hydrology.

Appendix E. Wild and Scenic Rivers Determination

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State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

M e m o r a n d u m

Making Conservation a California Way of Life

To: Zachary Larson
Associate Environmental Planner
North Region Environmental

Date: July 18, 2022

File: Eel River Bridge Seismic
HUM-101 - PM R53.7/M54.2
01-0A111 / 0116000148

From: Ellie Brauer
California Sea Grant State Fellow
North Region Environmental

SUBJECT: EEL RIVER BRIDGE SEISMIC (EA: 01-0A111) WILD AND SCENIC RIVERS ACT CONCURRENCE

The purpose of this project is to improve the integrity of the northbound Eel River Bridge by performing a seismic retrofit. The Eel River bridge spans the Eel River just north of Rio Dell at post mile (PM) R53.7/M54.2 on United States (U.S.) Highway 101. It is the responsibility of Caltrans under both the Federal and State Wild and Scenic Rivers Acts to receive concurrence from the appropriate river management agency that the proposed project will not have adverse effects on the free-flowing characteristics of the river or have the potential to alter the river's ability to meet the criteria that classify it as wild, scenic, or recreational.

PROJECT DESCRIPTION

The northbound Eel River Bridge was identified in the Structure Replacement and Improvement Needs Report as a bridge with seismic vulnerabilities. This project is needed to repair the seismic deficiencies and improve the structural integrity during a seismic event. The project would replace a section of the bridge with a cast-in-place prestressed box girder bridge. The remaining spans would be seismically retrofitted. Additional work would include constructing a retaining wall to realign the northbound bridge approach.

Construction activities that would occur as part of the work include temporary access road construction, vegetation and tree removal, pile driving and drilling, and the use of on-site staging areas, cofferdams, and trestles. Pile driving for trestle piles would likely be done with low-energy pile hammers (32Kft-lbs) with an anticipated strikes per day of 400-600. It is anticipated that the bridge footings could consist of 36-in diameter Cast-in-Steel-Shell piles or 12-ft diameter Cast-In-Drilled-Hole pile shafts with driven steel casings. These foundation types could utilize vibratory-type hammers in combination with driven pile hammers. Hammer energy could be in the range of 70K-150K ft-lbs with anticipated strikes per day of 200 to 300.

Construction access and staging areas are available in the median areas between the north and southbound bridges on either side of the Eel River. Access beneath the bridge would likely be from the northern side of the river, however, it may be necessary to construct temporary access roads at both ends of the bridge.

All work on or below the structure will occur within the permitted work windows. All sub-structure work will be performed from below the bridge deck on temporary trestles and/or temporary access roads. Pile drive or vibratory pile type hammers will be used to construct trestles and cofferdams. A re-alignment of the roadway would be performed near the south abutment. Caltrans will maintain an opening for the passage of small boats during construction.

In addition to the bridge work, PG&E would permanently relocate an existing high-pressure gas line. Relocation will likely include boring under the river, trenching to bury line, and the installation of sub-surface vaults at each boring pit. Vegetation removal will likely be necessary to provide access.

WILD AND SCENIC RIVER DESCRIPTION

The Eel River represents California's third largest watershed and is designated as a Wild and Scenic River under the National Wild and Scenic Rivers Act (1968) and the California Wild and Scenic Rivers Act (1972). Both Acts safeguard the river's Outstandingly Remarkable Values (ORVs), water quality, and free-flowing nature. State and federal designations include 398 miles of the Eel River in segments of the main Eel, Middle Eel, North Fork Eel, South Fork Eel, and the main Eel's tributary, the Van Duzen River. The project would include the partial replacement of a bridge that spans a section of the main Eel River which is desigінated as "Recreational." Public Resource Code (PRC) defines "recreational rivers" as "those rivers or segments of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." [PRC 5093.53(c)]

The ORV of the main Eel river is anadromous fisheries. The primary fish species of interest in the Eel include steelhead trout, Chinook salmon, coho salmon, and coastal cutthroat trout. The Eel River water, fish, and ecosystem have faced development challenges and sections of the river are closed to fishing to protect juvenile steelhead trout.

IMPACT EVALUATION

Caltrans uses standard Best Management Practices (BMPs) in its projects before, during, and after construction. Every project is required to develop a project-specific water pollution prevention plan that includes BMPs to prevent erosion and protect water quality during construction. This project would be regulated under the Clean Water Act, Section 404 under the U.S. Army Corps of Engineers, Section 401 with the North Coast Regional Water Quality Control Board, and Section 1602 of the Fish and Game Code.

This project would result in the same number of piers in the water after construction as the existing bridge and the proposed structure would be similar to the existing structure, thus the free flowing characteristics of the river would not be compromised. To minimize the impacts of pile driving activities on fish, exceedences of peak injury criteria would be avoided. Caltrans will maintain an opening for the passage of small boats during construction in order to minimize impacts to recreation. In addition, once all work is completed, the temporary access roads would be removed and the embankments would be restored and revegetated.

DETERMINATION

The footprint of the new structure will not be significantly different than the existing structure. Caltrans will minimize the impacts this project has on fish, water quality, and recreation by taking steps which include limits on pile driving, maintiaing passage for small boats, and utilizing BMPs to prevent significant erosion. Caltrans does not anticipate the project will have a permanent effect on water quality, the freeflowing characteristics of the river, or its ORVs. The project will not alter the river's ability to meet the criteria that classify it as wild, scenic, or recreational.

Larson, Zachary@DOT

From: Bowes, Stephen M <Stephen_Bowes@nps.gov>
Sent: Friday, March 31, 2023 11:59 AM
To: Larson, Zachary@DOT
Subject: Re: [EXTERNAL] Eel River Bridge Seismic Retrofit Project (EA: 01-0A111) - Request for Concurrence with the Wild and Scenic Rivers Act

I concur with Caltrans.

Stephen Bowes
Hydropower Assistance program
National Park Service
Interior Region 8, 9, 10, 12
909 First Ave #500
Seattle, WA 98104

cell: 510-277-2166

From: Larson, Zachary@DOT <Zachary.Larson@dot.ca.gov>
Sent: Monday, March 20, 2023 4:18 PM
To: Bowes, Stephen M <Stephen_Bowes@nps.gov>
Subject: [EXTERNAL] Eel River Bridge Seismic Retrofit Project (EA: 01-0A111) - Request for Concurrence with the Wild and Scenic Rivers Act

Hi Stephen,

Thank you in advance for your review of the proposed Eel River Bridge Seismic Retrofit project located on US 101 near Rio Dell in Humboldt County.

I have included attached KMZ files for reference and the link to the Initial Study with Proposed Mitigated Negative Declaration (https://dot.ca.gov/-/media/dot-media/district-1/documents/01-0a111-ded_ismnd_final_signed-with-appendices_ada-for-website.pdf).

Caltrans determined that the proposed project would not adversely affect the Eel River's water quality, free-flowing condition, or outstanding resource values.

Please reply to this email stating whether you concur with this determination. If you have any questions or need more information please contact me at your convenience.

Thank you,

Zack

Zachary Larson
Environmental Scientist
Caltrans North Region Environmental
Mobile: 707-382-1849
zachary.larson@dot.ca.gov

Larson, Zachary@DOT

From: Baugh, Heather@CNRA <Heather.Baugh@resources.ca.gov>
Sent: Monday, April 3, 2023 4:28 PM
To: Larson, Zachary@DOT
Cc: Green, Micah@Wildlife
Subject: RE: Consultation for State Wild and Scenic River - Eel River Bridge Seismic Retrofit (Humboldt County)

EXTERNAL EMAIL. Links/attachments may not be safe.

It might trigger it, but the law is really focused on a "water impoundment *facility*." This is because this law was intended to prevent damning northern wild and scenic rivers for southern water supply, but was not intended to prevent the type of work you are describing. This does not sound like a facility to me, so it is likely not a trigger. However, the work you are describing would you need a streambed alteration agreement referred to as a 1600 agreement from DFW, and in the process of obtaining that 1600 streambed alteration agreement, DFW would raise the issue to my office if it felt there was a trigger here. I have copied Micah here in the hopes he can help you reach the right team at DFW to ask about this—they will let you know if you need to talk with me. Note that the law is very stark on what can and cannot be permitted, I have put the relevant section below for you.

5093.55.

Other than temporary flood storage facilities permitted pursuant to Section 5093.57, no dam, reservoir, diversion, or other water impoundment facility may be constructed on any river and segment thereof designated in Section 5093.54; nor may a water diversion facility be constructed on the river and segment unless and until the secretary determines that the facility is needed to supply domestic water to the residents of the county or counties through which the river and segment flows, and unless and until the secretary determines that the facility will not adversely affect the free-flowing condition and natural character of the river and segment.
(Amended by Stats. 2004, Ch. 545, Sec. 2. Effective January 1, 2005.)

Heather Baugh
Assistant General Counsel
California Natural Resources Agency
715 P Street, Floor 20
Sacramento CA, 95814
Cell Phone: (279) 203-9323
Confidential Attorney-Client Communication

From: Larson, Zachary@DOT <Zachary.Larson@dot.ca.gov>
Sent: Monday, April 3, 2023 3:52 PM
To: Baugh, Heather@CNRA <Heather.Baugh@resources.ca.gov>
Subject: RE: Consultation for State Wild and Scenic River - Eel River Bridge Seismic Retrofit (Humboldt County)

For clarification, does a temporary diversion fall into this category? There may be a temporary stream diversion that would allow fish and boat passage around a work area within the active channel from June 15 to October 15 where water would be moved around work area if needed. Thank you for your fast response and time.

From: Baugh, Heather@CNRA <Heather.Baugh@resources.ca.gov>
Sent: Monday, April 3, 2023 3:21 PM
To: Larson, Zachary@DOT <Zachary.Larson@dot.ca.gov>
Subject: Re: Consultation for State Wild and Scenic River - Eel River Bridge Seismic Retrofit (Humboldt County)

EXTERNAL EMAIL. Links/attachments may not be safe.

If it's not diverting or impounding water you don't need a determination from my office. Please feel free to call me with questions.

Heather Baugh
Assistant General Counsel
California Natural Resources Agency
715 P Street, Floor 20
Sacramento CA, 95814
Phone: (916) 653-5656
Cell Phone: (279) 203-9323
Confidential Attorney-Client Communication

From: Larson, Zachary@DOT <Zachary.Larson@dot.ca.gov>
Sent: Monday, April 3, 2023 3:07:44 PM
To: Baugh, Heather@CNRA <Heather.Baugh@resources.ca.gov>
Subject: Consultation for State Wild and Scenic River - Eel River Bridge Seismic Retrofit (Humboldt County)

Hi Heather,

I was given your contact information for obtaining a determination on a bridge retrofit project located in the mainstem Eel River near Rio Dell in Humboldt County.
I am including a link to the Initial Study with Proposed Mitigated Negative Declaration for this project as well as Google Earth KMZ files (attached) for your review.
The project is not a water diversion, impoundment or other water facility. We recently received concurrence with our determination from the National Park Service (Stephen Bowes) regarding Section 7(a) of the National Wild and Scenic Rivers Act.

Here is the link to the ISMND: https://dot.ca.gov/-/media/dot-media/district-1/documents/01-0a111-ded_ismnd_final_signed-with-appendices_ada-for-website.pdf

Please let me know whether you believe this project would trigger the State Wild and Scenic Rivers Act or if you need more information.

Thank you,

Zack

Zachary Larson
Environmental Scientist
Caltrans North Region Environmental
Caltrans District 1 Office
1656 Union Street

Eureka, CA 95501
Mobile: 707-382-1849
zachary.larson@dot.ca.gov

Appendix F. Mitigation Summary

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Memorandum

Making Conservation
a California Way of Life

To: Zachary Larson
Environmental Scientist
North Region Environmental

Date: 4/13/2023

File: Eel River Bridge Seismic Retrofit
Hum-101 / PM R53.7/M54.2
01-0A111 / 0116000148

From: Tim Nelson
Environmental Scientist – Mitigation Specialist
North Region Environmental

SUBJECT: MITIGATION SUMMARY – EEL RIVER BRIDGE SEISMIC RETROFIT

The California Department of Transportation (Caltrans) proposes to partially replace and seismically retrofit the northbound U.S. 101 Eel River Bridge from post miles (PMs) R53.7 to M54.2 near Rio Dell, Humboldt County, California. The purpose of this project is to improve the integrity of the structure by performing a seismic retrofit on the bridge as identified in the scope of work.

Caltrans prepared an Initial Study for the Eel River Bridge Seismic Retrofit Project (EA 01-0A111) and anticipates a determination that the proposed project would not have a significant impact on the environment. With mitigation measures incorporated, the project would have "*Less Than a Significant Impact"* to biological resources.

The purpose of this Mitigation Summary is to address impacts to biological resources associated with the project. The Mitigation Summary is based on decisions made by the Project Development Team (PDT) and describes mitigation measures proposed to offset project impacts, including:

- Temporary and permanent impacts to wetlands and non-wetland waters regulated by the U.S. Army Corps of Engineers (USACE), North Coast Regional Water Quality Control Board (NCRWQCB), and California Department of Fish and Wildlife (CDFW).

PROJECT DESCRIPTION

The project would replace Spans 1 through 4 of the northbound Eel River Bridge with a cast-in-place (CIP), prestressed box girder bridge. The remaining Spans 5 through 8 would be seismically retrofitted. Additional work would include constructing a retaining wall to realign the northbound bridge approach. This project would also improve a non-standard curve at the southern approach to the bridge at Abutment 1.

The project would require temporary access road construction, on-site staging areas, vegetation and tree removal, pile driving and drilling, cofferdams, and trestles. Access to the river bar below the bridge would likely be from the northern side of the river, however, it may be necessary to construct temporary access roads at both ends of the bridge. Once all work is completed, temporary access roads would be removed and the embankments would be restored and revegetated.

All work on or below the structure would occur within the permitted work windows. All sub-structure work would be performed below the bridge deck from temporary trestles and temporary access roads. A realignment of the roadway would be performed at Abutment.

PROJECT IMPACTS

A Natural Environment Study (NES) was prepared by Caltrans to identify existing biological resources, assess potential impacts, and identify permitting requirements for the project (Caltrans 2022). The NES provides information about the existing environment within the project area, including special status botanical and wildlife species and their associated habitats, and sensitive habitats present in the vicinity of the project that could potentially be affected by the proposed Eel River Bridge Seismic Retrofit Project. The following information is based on the NES and the Initial Study currently pending public review.

Impacts to Jurisdictional Wetlands and Waters

The proposed project has the potential to affect Waters of the United States and Waters of the State, including jurisdictional wetlands and riparian habitat. Permanent and temporary impacts to aquatic resources (Table 1) are anticipated due to bridge and pier removal, construction of the new bridges and piers, falsework, temporary trestles, road realignment, and clear water diversion, as well as associated cut and fill areas and potentially from the creation of a temporary access road.

Temporary impacts may result from construction of access roads, work areas, temporary construction trestle, containment system, clear water diversion, cofferdams, and falsework for new piers and bridge deck. The project would result in up to 1.850 acres of temporary impacts to non-wetland Waters of the U.S. and State (Eel River–OW3) (Table 1). Temporary impacts would be offset on-site according to detailed descriptions made available in the project Revegetation Plan, once design is complete.

Permanent impacts due to roadway realignment, retrofit of existing piers, and the construction of new piers (smaller pier size) would result in positive permanent impacts of -0.02 acres of non-wetland waters of the U.S. and State. If required, relocating the existing median wetland (W1) could result in 0.12 acre of permanent impacts to wetlands (Table 1, Figures 1 and 2.

Table 1. Temporary and Permanent Impacts to Waters of the U.S. and State (Caltrans 2022)

Aquatic Resource	Map Code	Temporary Impact (acres)	Permanent Impact (acres)
Eel River (R3UB-Appendix D)	OW3	1.850	-0.02
Wetland W1 (PSS)	W-1	0	**0.12**
Total Wetlands		**0**	**0.12**
Total Other Waters (OW)		**1.850**	**-0.02**
Total		**1.850**	**0.10**

Estimated mitigation may be further modified following project scope refinement and additional discussions and negotiations with resource/regulatory agencies. The primary purpose of this document is to describe project mitigation intended to reduce project impacts to a less than significant level as described in Section 2.4 [Biological Resources] of the CEQA Initial Study and Mitigated Negative Declaration. The secondary purpose of the document is to provide a summary of project activities that will be implemented to offset impacts to other resources. These measures include:

(1) Onsite restoration for temporary and permanent impacts to non-wetland waters,

(2) On-site revegetation of riparian resources to achieve a success criteria of 100% replacement of all trees that were cut during construction,

(3) If necessary, offsite mitigation for wetlands via the use of state wetland credits as outlined in the Fen Parcel Cooperative Agreement agreed upon by NCRWQCB, CDFW, and Caltrans on 12/14/2021. According to Recital 2.c. of the Cooperative Agreement, Caltrans may apply credits for 01-0A111, Eel River Bridge Seismic Retrofit, Bridge No. 04-0016R, HUM 101 PM M53.9, with an estimated impact of 1.0 acre to wetlands. Permanent impacts to Waters of the State (wetlands) from project activities are 0.000 acre, significantly less than the estimated 1.0 acre of impacts listed in the Fen Parcel Cooperative Agreement.

Caltrans proposes to offset impacts to all temporary and permanent impacts to riparian and waters of the U.S./State (non-wetland waters) habitats onsite; though due to further project refinement, offsite mitigation to compensate for permanent impacts to waters of the U.S./State (wetlands) would not be required. Caltrans has identified and provided information below as viable onsite and offsite mitigation options to compensate for the project’s temporary and permanent impacts.

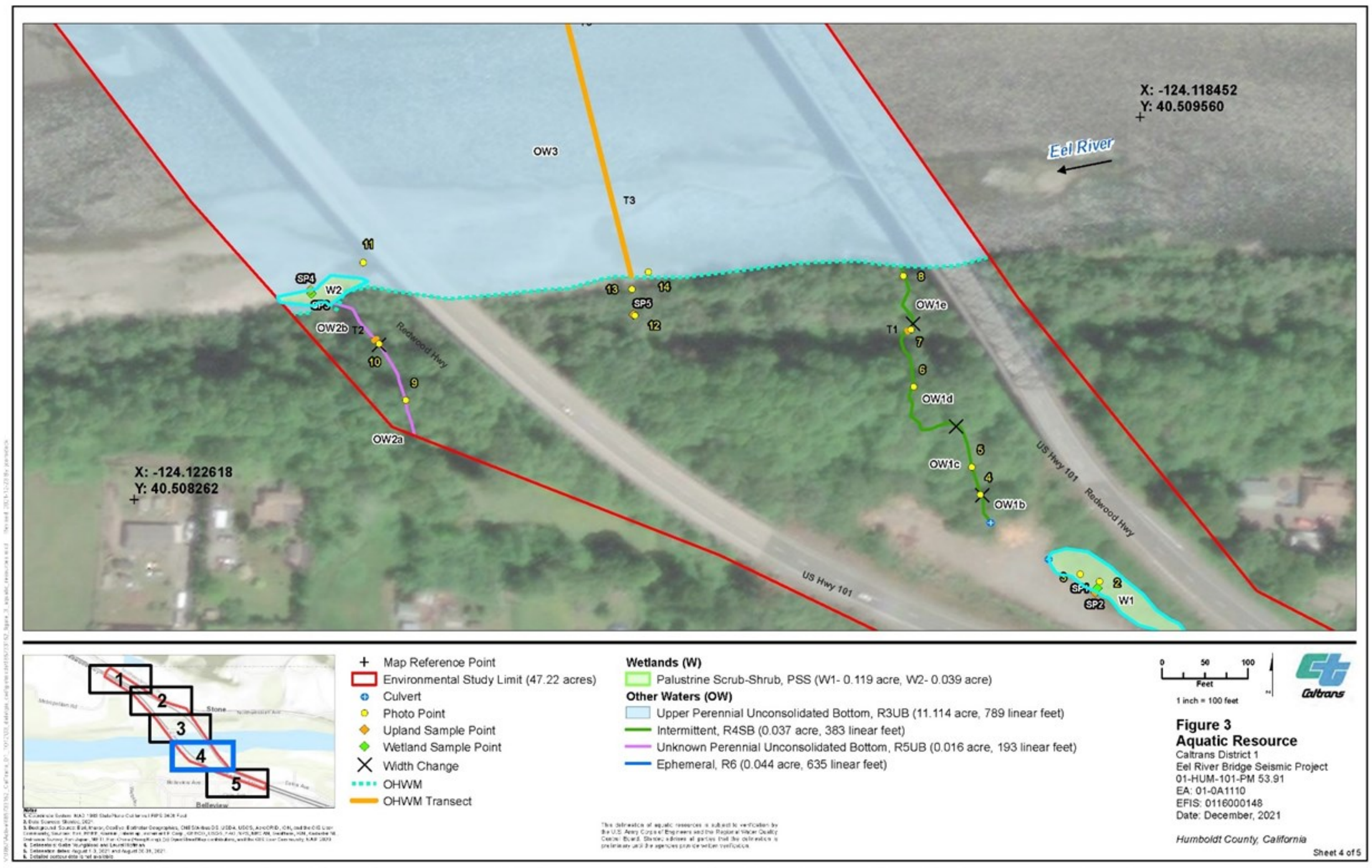

Figure 1. Mapped Aquatic Resources with Environmental Study Limits (Caltrans 2022).

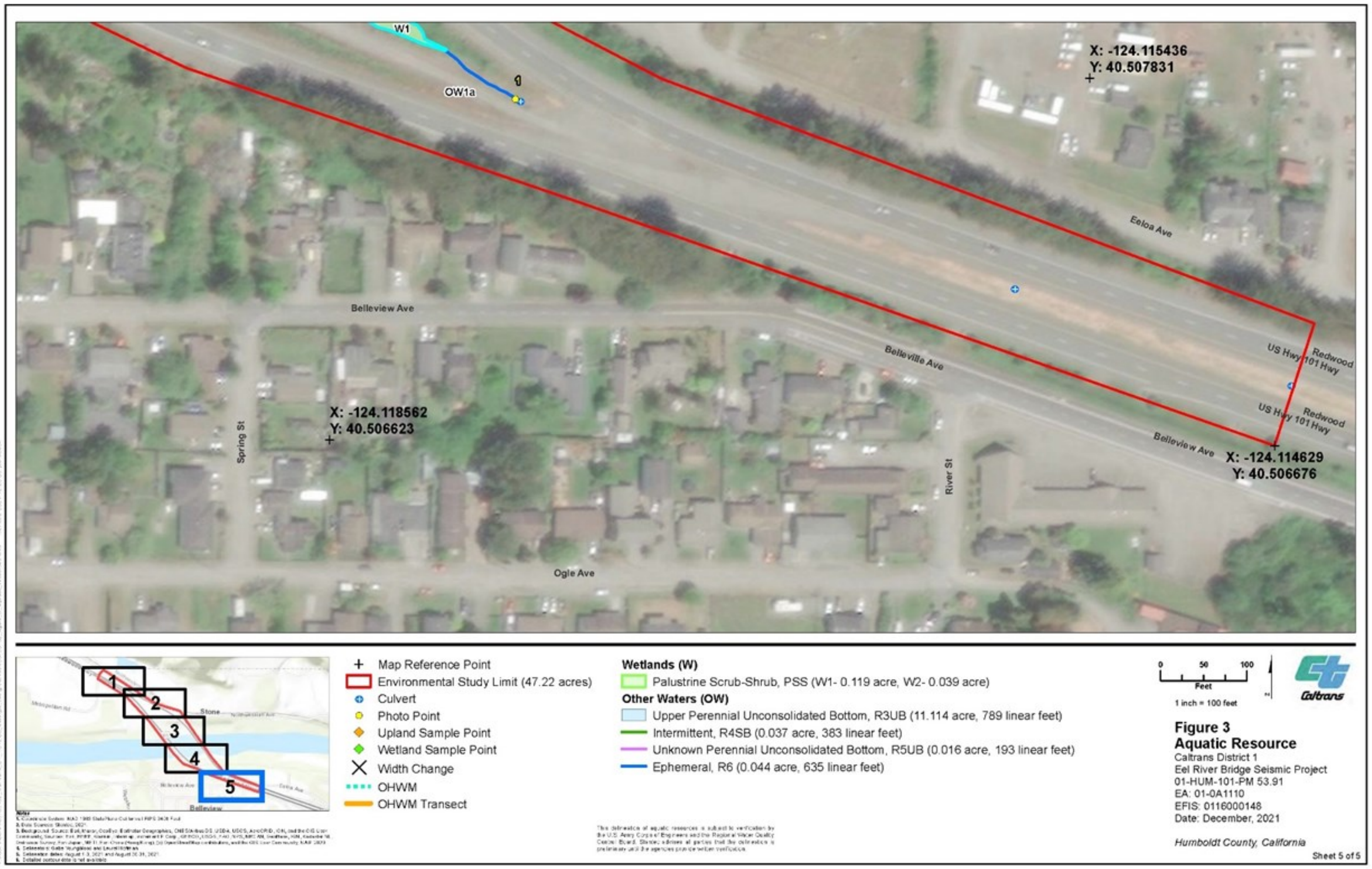

Figure 2. Mapped Aquatic Resources with Environmental Study Limits (Caltrans 2022).

PROPOSED ON-SITE OFFSETS/MITIGATION

The following on-site activities proposed to offset project impacts include revegetation of riparian habitats and restoration of aquatic jurisdictional features at the project site. A detailed description of the on-site Revegetation Plan will be available once the area of replanting is determined based on final project design.

On-Site Revegetation – Riparian Habitats

Within the proposed project footprint, all disturbed soil areas would be treated with erosion control consisting of a regionally appropriate seed mixture; seed would be locally sourced where possible. Additionally, Caltrans would implement on-site revegetation with appropriate native California plants in all disturbed soil areas of the project, where feasible; however, several constraints may limit these areas. On-site revegetation is feasible in the Caltrans right of way and where there is safe parking and access to the site during the planting, watering, and maintenance period. Riparian areas temporarily impacted by construction would be restored to pre-existing conditions once construction is complete. As applicable and depending on final design and impacts, riparian areas would be planted with riparian vegetation with the goal to shade any waters and to replace habitat. To offset impacts on-site, 100% of the number of riparian trees cut for construction would be replaced by living, installed, volunteer, and/or resprouting native woody plants.

Revegetation is typically performed under the guidance of Caltrans Revegetation Specialists, and work is performed by the California Conservation Corps, a similar labor force, or an appropriate contractor. Planting commonly occurs one year after construction and is completed during the winter when the soil is wet from rain and the plants are dormant. This timing also allows any erosion-control seed to establish and allows microsite conditions to develop. Planting during dormancy decreases stress on the plants and gives them the best chance of survival. Installed plantings are typically purchased through an outgrow contract of regionally appropriate stock to protect genetic integrity, or off-the-shelf if appropriate sourcing is available. Plants are typically caged to protect from herbivory, watered twice monthly during the first two dry seasons, mulched to suppress weeds and retain water, and weeded to decrease competition from non-native plants. Plant species are selected to replace habitat impacted by construction. Non-native plant species would be controlled in the revegetation areas to allow the plantings to establish. To the greatest extent feasible, Caltrans endeavors to eradicate any newly introduced invasive species ranked as having High ecological impact by the California Invasive Plant Council (Cal-IPC)[1].

In summary, due to the customary project development process, designs are incomplete at this early stage therefore details of onsite revegetation are under development, including type, locations, and total area. Some onsite revegetation activities will include replanting within temporarily disturbed riparian areas. Planting palettes and location details for proposed onsite revegetation will be specified in the onsite Revegetation Plan which will be submitted along with permit applications for agency review.

On-Site Waters of the U.S./State (Non-wetland waters) Restoration

As a result of project activities, impacts to non-wetland waters and wetland habitats would be both temporary and permanent and offset to the fullest extent possible on-site. Wetland and non-wetland waters areas temporarily impacted by construction would be restored to pre-existing conditions once construction is complete. If required, wetland areas would be planted/seeded with regionally appropriate native species. Caltrans has identified and provided information below for a viable option to compensate for these future impacts if deemed necessary.

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[1] Cal-IPC (http://www.cal-ipc.org/): The Cal-IPC Inventory categorizes non-native invasive plants that threaten the state's wildlands. Categorization is based on the assessment of the ecological impacts of each species. The Inventory categorizes plants as High, Moderate, or Limited, reflecting the level of each species' negative ecological impact in California:

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

PROPOSED OFFSITE MITIGATION

Caltrans proposes to meet all compensatory mitigation requirements for project impacts to wetlands through the use of state wetland credits as outlined in the *Cooperative Agreement for the HUM-36-Fen Parcel* (2021) (hereinafter referred to as "Fen Parcel") (APN 210-033-006).

State Wetlands Credits - Fen Parcel

To compensate for impacts to state wetlands at the project site, Caltrans proposes to utilize fen credits at the Fen Parcel located along State Route (SR) 36, between the towns of Bridgeville and Dinsmore, within the Larabee Valley 7.5 minute U.S. Geological Survey quadrangle. The parcel is located in the Lower Eel River HUC 8 Watershed (18010105) and Lower Van Duzen River HUC 10 Watershed (1801010509). The Fen Parcel comprises 114-acres of upland forest surrounding and encompassing a ~5.11-acre sensitive fen. The Fen Parcel adjoins a 155.3-acre CDFW parcel (Robey/Burke Peatland, APN 210-033-002) that contains the majority of the fen (Figure 3). Acquisition of the Fen Parcel was completed in 2022 to add further protections from land development activities that highly threatened the fen's sensitive resources.

The Robey/Burke Peatland was acquired in 2017 by the Central Federal Lands Highway Division of the Federal Highway Administration (FHWA), in cooperation with Caltrans, as preservation and compensatory mitigation for proposed impacts to federal and state waters associated with a California SR 36 project (CDFW 2017). Similar to this acquisition, Caltrans once again worked with CDFW and NCRWQCB to acquire the 114-acre parcel for preservation and compensatory mitigation for eight programmed projects occurring in the Lower and South Fork Eel River watersheds.

On August 26, 2019, Caltrans issued a proposal letter to CDFW and NCRWQCB that the Fen Parcel to be purchased in CDFW's name as a conservation strategy would satisfy wetland mitigation needs associated with multiple potential transportation projects located along SR 36 and US 101, along the Lower Eel River Watershed, including the Van Duzen Watershed and South Fork Eel Watershed. This mitigation would be used to mitigate for impacts to eight future Caltrans projects including:

a. <u>01-0C500</u>: Bridge Rail Replacement-3 Bridges, HUM 36, Hely Creek, Bridge No. 4-92; Larabee Creek, Bridge No. 4-102; and Butte Creek Bridge No. 4-116, with an estimated impact of 0.20 acre to wetlands;

b. 01-0F160: Carlotta Curve Improvement, HUM-36, PMs 10.5-10.8, with an estimated impact of 0.25 acre to wetlands;

c. **01-0A111: Eel River Bridge Seismic Retrofit, Bridge No. 04-0016R, HUM 101 PM M53.9, with an estimated impact of 1.0 acre to wetlands;**

d. Caltrans ID 20286: HUM-36, PMs 1-44.8, 35 culverts, with an estimated impact of 1.25 acre to wetlands;

e. 01-0H640: Hum 101 Drainage South, HUM 101 PMs 0-54, 62 culverts with an estimated impact of 1.25 acre to wetlands;

f. 01-0J890: Carlotta Shoulder Widening, HUM 36 PMs 3-6, with an estimated impact of 0.5 acre to wetlands;

g. 01-0E010: Alton Shoulder Widening Project, HUM 36 PMs 0.1-1.65, with an estimated impact of 0.5 acre to wetlands; and

h. 01-0H241: HUM 254 Culverts, PMs 0.8-21, ten culverts with an estimated impact of 0.25 acres to wetlands.

CDFW issued a concurrence memorandum dated September 19, 2019, agreeing that the purchase of the Fen Parcel would mitigate for impacts to wetlands for the identified projects. Furthermore, Caltrans can return to the Fen Parcel at a later date and enter into a future cooperative agreement with CDFW to complete additional activities for transportation-related mitigation. Similarly, RWQCB issued a concurrence letter dated October 7, 2019, also agreeing with Caltrans' proposal for wetland compensatory mitigation for the identified projects. A Cooperative Agreement was completed December 14, 2021, to purchase the Fen Parcel and provide additional endowment funds for the long-term management of the site. In April 2022, CDFW officially acquired the Fen Parcel and endowment funds were later transferred to an interest bearing account managed by the National Fish and Wildlife Foundation (NFWF). The estimated impacts to state wetlands for the identified projects equal approximately 5.20-acres, though this may fluctuate as project designs are furthered refined. As stated in the Fen Parcel Cooperative Agreement, Caltrans, in coordination with the NCRWQCB and CDFW, may, as funds are programmed and allocated for these possible transportation projects, shift the wetland compensation values between each of the identified projects on the list, as long as the total does not exceed 5.20-acres of wetlands impact.

Figure 3. CDFW owned parcels associated with sensitive fen habitats along SR 36. APN 210-033-002 was purchased and transferred to CDFW in 2017 as compensatory mitigation for FHWA projects. APN 210-033-006 was purchased and transferred to CDFW in 2022 as compensatory mitigation for wetland impacts as a result of eight Caltrans projects.

REFERENCES

California Department of Fish and Wildlife (CDFW). 2017. Burke/Robey Peatland McClellan Mountain, Humboldt County, CA. Land Management Plan. Eureka, California.

California Department of Transportation (Caltrans). 2022a. *Eel River Bridge Seismic Retrofit Project Natural Environment Study.* Prepared by Jeff Wright, Environmental Scientist. October 2022.

California Invasive Plant Council (Cal-IPC). 2022. *Cal-IPC Inventory.* Accessed on October 4, 2022, at https://www.cal-ipc.org/plants/inventory/

CDFW, North Coast Regional Water Quality Control Board (NCRWQCB), California Department of Transportation (Caltrans), National Fish and Wildlife Foundation (NFWF). 2021. Cooperative Agreement No. 01-0404 HUM-36 Fen Parcel.

Appendix G. Public Comments

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Public Comments

The following letters and comments were received during the CEQA public circulation period for the draft environmental document (initial study with proposed mitigated negative declaration), that was circulated from October 28, 2022, to November 30, 2022. Caltrans District 1 staff hosted a virtual public meeting on Wednesday, November 9, 2022, to share information and answer questions about the Eel River Bridge Seismic Retrofit Project.

Written comments were received from public persons and public agencies, including the California Department of Fish and Wildlife, California Highway Patrol, and the California State Lands Commission. Caltrans' responses to public comments are included below.

November 16, 2022 – Email Comment from Jolie Harvey

"Hi Zachary,

I just finished watching the Caltrans presentation on the Rio Dell bridge retrofit proposal. I live in Rio Dell and have concerns about the noise and pollution that will be created from this project. In addition, why is there a proposal to mitigate wetlands off HWY 36 when this bridge spans the Eel River. Additionally, I have concerns about the overall health of the Eel River, especially for salmon populations. Specifically, in this stretch of the river. Can we focus mitigation efforts on getting rid of those dams in the main stem. Rio Dell residents depend on the Eel River for fresh water. How will construction impact our water supply? I'll be sad to see the green bridge go, but the new design looks nice. Especially the increased pedestrian portion. I think a native Wiyot design would look nice compared to salmon. Lastly, the south bridge was mentioned but nobody really talked about what was going to happen to it. Is the two-year construction timeline for both bridges or just the north bridge? Oh, and one last comment. I'm most excited about the north bridge approach correction. I support that 100%.

Thanks for reading.

Jolie Harvey"

Response: Thank you for your comments. During construction, noise may be generated from the contractors' equipment and vehicles. Caltrans requires the Contractor to conform to the provisions of 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.".

For information on measures to protect natural resources, see section 1.4. The mitigation proposed for potential wetland impacts is located in the watersheds of both the Lower Eel River and the Van Duzen River, a tributary to the Lower Eel. This mitigation measure helps protect very sensitive fen habitat. Caltrans worked closely with CDFW and NCRWQCB to develop this conservation strategy. Significant impacts to salmonids are not anticipated and therefore no CEQA mitigation is required.

Construction would not impact water supply for the City of Rio Dell, or any other users, but there will be the need to relocate water lines that may temporarily affect some users. Finally, only the northbound US 101 bridge (Br. #04-0016R) will be retrofitted and partially replaced. The southbound bridge will serve as a detour for northbound traffic, with one lane in each direction, during construction on the northbound bridge.

November 17, 2022 – Email Comment from Anna Trussler

“Hello,

I feel disturbed to know that my only route to get to work could collapse in an earthquake and now that we know this is needed, the project won’t even begin for 3 more years. Shouldn’t this be a higher priority?”

Response:

Thank you for your comment and interest in the project. The bridge is routinely inspected and monitored and is safe to use. The bridge is 80 years old and needs to be brought up to current Caltrans bridge standards.

November 21, 2022 – Email Comment from Jackson Hurst

“Name - Jackson Hurst

Comment - I have reviewed the IS/MND Document for Caltrans Eel River Bridge Seismic Retrofit Project and I support the build alternative because the build alternative will improve the U.S. 101 Bridge over the Eel River in the case of a major earthquake.”

Response:

Thank you for your comment.

State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: November 28, 2022

To: Zachary Larson
Environmental Scientist
California Department of Transportation
North Region Environmental
1656 Union Street
Eureka, CA 95501
Zachary.Larson@dot.ca.gov

From: Tina Bartlett, Regional Manager
Northern Region, California Department of Fish and Wildlife

Subject: **Eel River Bridge Seismic Retrofit Project (SCH# 2022100650)**

On October 28, 2022, the California Department of Fish and Wildlife (CDFW) received an Initial Study with Proposed Mitigated Negative Declaration (IS/MND) from the California Department of Transportation (Caltrans; Lead Agency) for the Eel River Bridge Seismic Retrofit Project (Project), Humboldt County, California. CDFW understands that the Lead Agency will accept comments on the Project through November 28, 2022.

As a Trustee Agency for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary to sustain their populations. As a Responsible Agency, CDFW administers the California Endangered Species Act (CESA) and other provisions of the Fish and Game Code (FGC) that conserve the State's fish and wildlife public trust resources. CDFW offers the following comments and recommendations in our role as Trustee and Responsible Agency pursuant to California Environmental Quality Act (CEQA; California Public Resource Code §21000 *et seq*.). CDFW participates in the regulatory process in its roles as Trustee and Responsible Agency to minimize Project impacts and avoid potential significant environmental impacts by recommending avoidance and minimization measures. These comments are intended to reduce the Projects impacts on public trust resources.

Project Description

As stated in the IS/MND, the Lead Agency proposes to partially replace and seismically retrofit the northbound Eel River Bridge of U.S. Highway 101 from post miles R53.7 to M54.2 in Humboldt County, California, about 250 miles north of San Francisco and 25 miles south of Eureka (lat/long 40.5096, -124.1199). The Project would replace Spans 1 through 4 of the northbound Eel River Bridge with a cast-in-place prestressed box girder bridge. The remaining Spans 5 through 8 would be seismically retrofitted. Additional work would include constructing a retaining wall to realign the northbound bridge approach. The Project would require temporary access road construction, on-site staging areas, vegetation and tree removal, pile driving and drilling, cofferdams, and trestles. Access to the river bar below the bridge would likely be from the northern side of the river; however, it may be necessary to construct temporary access roads at both ends of the bridge. Once all work is completed, temporary access roads will be removed and the embankments will be restored and revegetated. All substructure work will be performed below the bridge deck from temporary trestles and temporary access roads. A permanent relocation of existing utilities will be required and a realignment of the roadway will be performed at Abutment 1.

Environmental Setting and Special Status Species

The Eel River is an important fish-bearing, major river system that provides spawning and rearing habitat for a variety of salmonids as well as habitat for other sensitive aquatic and terrestrial species including Southern Oregon / Northern California evolutionarily significant unit of coho salmon (*Oncorhynchus kisutch*; State Threatened), California Coast fall chinook salmon (*Oncorhynchus tshawytscha*; Federally Threatened [FT]), winter and summer runs of Northern California distinct population segment (DPS) of steelhead (*O. mykiss*; Species of Special Concern [SSC], State Endangered [SE] respectively), coastal cutthroat trout (*O. clarki clarki*; SSC), green sturgeon Southern DPS (*Acipenser medirostris*; FT), Pacific lamprey (*Entosphenus tridentatus*; SSC), Western brook lamprey (*Lampetra richardsoni*; SSC), Western pond turtle (*Emys marmorata*; SSC), foothill yellow-legged frog North Coast Clade (*Rana boylii*; SSC), northern red-legged frog (*Rana aurora*; SSC), obscure bumble bee (*Bombus caliginosus*; S1-Critically Imperiled /S2-Imperiled), Western bumble bee (*Bombus occidentalis*; S1, Candidate State Endangered), yellow warbler (*Setophaga petechia*; SSC), osprey (*Pandion haliaetus*; Watch List), bald eagle (*Haliaeetus leucocephalus*; SE), pallid bat (*Antrozous pallidus*; SSC), Townsend's big-eared bat (*Corynorhinus townsendii*; SSC), Western red bat (*Lasiurus blossevillii*; SSC), and other terrestrial and aquatic species.

CDFW Consultation History

CDFW provided Project specific consultation in May 2021, and October 2022. CDFW appreciates the level of communication and coordination by Caltrans staff.

CDFW Permitting

The proposed Project will have substantial impacts to the bed, bank and channel of the Eel River and Caltrans should notify CDFW for a Lake or Streambed Alteration (LSA)

Agreement and Caltrans may need incidental take[1] authorization for summer steelhead, coho salmon, and Western bumble bee pursuant to CESA. CDFW looks forward to continuing to coordinate with Caltrans to ensure that mitigation approaches will be compatible with state permitting requirements, including further coordination on mitigation approaches for impacts to onsite habitat.

CDFW Comments on the IS/MND:

1. **Seasonal Work Limitations**

   The IS/MND states in the Construction Scenario section it is presumed that a construction season for work below ordinary high water will be from June 15 to October 15 of any year. It is also presumed that bridge work can proceed during the off-season if work is performed above the banks of the river channel and outside of waters and riparian vegetation (IS/MND page 6; 26/319). The IS/MND also states construction activities performed above the ordinary high water mark of a watercourse that could potentially directly impact surface waters (i.e., soil disturbance that could lead to turbidity) would be performed during the dry season, typically between June through October, or as weather permits per the authorized contractor-prepared Storm Water Pollution Prevention Plan, Water Pollution Control Program, and/or Project permit requirements (IS/MND page 21, 41/319).

   CDFW recommends Caltrans prepare a more detailed seasonal work plan for submittal in the Project's pending LSA Notification if ground disturbing activities or other Project elements are proposed between the Eel River top of bank between October 16 and June 14 of any year (Recommendation 1). It would be helpful to have Project figures containing percent slope as well as contour lines for relevant river flow scenarios (e.g., ordinary high water, 2-year, 10-year flow, 50-year flow and 100-year flood elevations).

2. **Utility Relocation**

   The IS/MND states that utilities (water and gas lines) on the bridge will be relocated in Caltrans' right-of-way by directional boring under the Eel River (IS/MND page 8, 28/319).

   CDFW recommends more detail on the directional drilling element of the Project be included in the pending LSA Notification, including seasonal/weather work restrictions, enter/exit locations, minimum depth of directional drilling under the Eel River streambed, maximum drilling fluid pressure thresholds to prevent frac-outs, and a frac-out contingency plan (Recommendation 2).

[1] Take is defined as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (Fish and Game Code 86).

3. Bumble Bee Surveys

The IS/MND discloses there is suitable habitat for two special status bumble bee species, obscure bumble bee and Western bumble bee (IS/MND Table 6). The IS/MND also states there are historical records of these bumble bee species near the Project; however, no species-specific surveys were conducted for bumble bees (IS/MND page 100, 120/319).

The Western bumble bee is a candidate for CESA listing and take is now prohibited unless an incidental take permit authorizes the take. Given there is potentially suitable habitat in the Project area, a seasonally appropriate survey for the Western bumble bee is needed to better evaluate potential presence within the Project area as well as potential Project impacts. Therefore, CDFW recommends the IS/MND contain a project condition for developing a bumble bee survey plan and implementation, as well as feasible mitigation (including avoidance and minimization) if impacts may occur (Recommendation 3). Survey methods may utilize elements of existing protocols, such as the Bumble Bee Atlas Program (Xerces, 2022), if it can be demonstrated the Project's bumble bee survey methods are adequate to determine potential presence in the Project's environmental study area as well as potential Project impacts.

4. **Sensitive Natural Communities and Riparian Habitat**

The IS/MND states the proposed Project will result in impacts to several Natural Communities (NC). NCs are vegetation types categorized by CDFW's Vegetation Classification and Mapping Program (VegCAMP) using the National Vegetation Classification Standard (CDFW, 2022a). NCs have been part of the Natural Heritage conservation triad, along with plant and animal species since the 1979 inception of the California Natural Diversity Data Base (CDFW, 2022b). VegCAMP evaluates NCs for their conservation status by using NatureServe's Heritage Methodology (Nature Serve, 2022), the same system used to assign global and state rarity ranks for plant and animal species in CNDDB. NCs with a State Rank of S1-Critically Imperiled though S3-Vulnerable have been determined by CDFW to be Sensitive Natural Communities (SNC) (CDFW, 2022a; CDFW, 2022c). Most SNCs in California occur at the association level of classification. Adverse effects on SNCs, in addition to riparian habitat, should be analyzed in CEQA documents (CEQA Guideline Environmental Checklist IV(b)).

In addition to the 0.86 acres (ac) of impacts to SNCs disclosed in the IS/MND (0.54-ac black cottonwood forest and woodland [*Populus trichocarpa*], 0.32-ac Sitka willow thickets [*Salix sitchensis*]), the Project's Natural Environment Study (NES) discusses several other NCs within the study area but concluded only four of 12 NCs are SNCs (Caltrans, 2022 [NES page 114]). After CDFW review of the IS/MND, NES, and a site visit, CDFW determined the red alder forest (*Alnus* *rubra*), salal-berry brambles (*Gaultheria shallon*, *Rubus* spp.), and arroyo willow thickets (*Salix lasiolepis*) alliances have S1-3 state ranks or contain associations designated as SNCs by VegCAMP. These NCs comprise 7.86 ac within the Project Environmental Study Limit but were not categorized as SNCs and were not addressed in the IS/MND. Additionally, the IS/MND presents adverse effects on all SNCs as temporary (or temporal) impacts; however, the temporal loss of habitat during the three years of construction may add to the significance of these impacts. Furthermore, the IS/MND discloses many of the trees within SNCs impact areas exceed 12-inches in diameter with some as larger as 34-inches diameter (MND table 11).

For these reasons, there may be sufficient evidence to support that impacts to SNCs by the Project are potentially significant. If Caltrans re-evaluates these NCs and SNCs and concludes there are potentially significant impacts, CDFW typically recommends that impacts to SNCs and mature riparian habitat that require greater than one year to re-establish to baseline conditions be mitigated at a 3:1 or greater ratio to account for temporal losses. Mitigation ratios should typically occur on a per unit area basis, such as three acres of mitigation for each acre of impact.

Because of the amount and type of habitat that will be impacted, and the biological resources onsite, CDFW disagrees with the assessment that Project impacts to Sensitive Natural Communities are less than significant. The impacts as described would create a “substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service,” as described in the CEQA Guidelines Appendix G, and should therefore be considered a potentially significant impact.

Therefore, CDFW recommends a re-evaluation of impacts to SNCs and riparian habitat (Recommendation 4). Impacts that cannot be avoided and cannot be restored to baseline conditions within one year should be mitigated at a 3:1 ratio per unit area. An IS/MND mitigation measure should, at minimum, commit to performance standards such as revegetation ratios and success criteria, and should provide location(s) of off-site revegetation areas, including information regarding land ownership and future proposed management plans.

5. Removal of Concrete in River Channel

CDFW observed large areas of what appears to be a concrete apron on top of the river gravels/cobbles where the Project proposes to retrofit bridge footings. CDFW assumes this legacy construction material is associated with previous infrastructure configurations. If so, prior failure to remove debris may be inconsistent with FGC sections 5650 (pollution) and 5652 (refuse, waste, debris within 150-feet of Waters of the State). This concrete is adversely impacting riverine processes by artificially stabilizing and consolidating river gravels and cobbles and does not appear to serve a current purpose.

CDFW recommends the Project description be revised to include characterization and removal of this concrete, rebar, and other discarded materials (Recommendation 5).

6. Mitigation, Monitoring, and Reporting

When preparing an IS/MND, the Lead Agency must include feasible mitigation measures to reduce impacts to a less than significant level (CEQA section 21002), with sufficient details and performance standards to avoid improperly deferring mitigation until some future time (CEQA Guidelines section 15126.4 (a)(1)(B)). To ensure the mitigation measures and Project revisions in the IS/MND are implemented, the Lead Agency shall adopt a mitigation monitoring or reporting program/plan (MMRP; CEQA Guidelines section 15097). Monitoring ensures Project compliance is checked on a regular basis to evaluate the measurable success of mitigation measures. Reporting on monitoring will ensure compliance with mitigation requirements. An adequate MMRP should, at a minimum, describe (1) roles and responsibilities for various aspects of monitoring; (2) timing/implementation; (3) reporting and support responsibilities; (4) other responsibilities of the Project proponent; (5) general standards for determining Project compliance with the mitigation measures or revisions and related conditions of approval; and (6) enforcement procedures for noncompliance or adaptive management.

The IS/MND contains a brief description of mitigation measures (IS/MND page 152, 172/319), with more detail in the Draft Mitigation Plan Summary (IS/MND Appendix F, 302/319). However, the Draft Mitigation Plan Summary should be revised to include additional, sufficient details for MMRP standards as well as additional mitigation measures recommended by CDFW in this letter (Recommendation 7).

Proposed mitigation for impacts to salmonids includes partial funding for either Sacramento pikeminnow (*Ptychocheilus grandis*) suppression or a fish passage project on a tributary to Chadd Creek. Although CDFW is interested in strategies for suppression of invasive Sacramento pikeminnow, concepts and feasibility for proposed release of Trojan Y chromosome Sacramento pikeminnow into the Eel River have not yet been fully vetted by CDFW and is not a good mitigation fit for this Project. The Chadd Creek fish passage mitigation is likely a better fit for Project mitigation, but sufficient detail is not provided in the IS/MND (CEQA Guidelines section 15364). More information on Chadd Creek fish passage mitigation is needed, including precise location, existing conditions, benefits to salmonid species (e.g., number of miles of new fish access), performance criteria, roles and responsibilities, and others. This additional information should be summarized in an MMRP.

Lastly, the IS/MND contains several “Standard Measures and Best Management Practices” that are stated to be prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring for a project (IS/MND page 16, 36/319). The IS/MND states these measures and practices are not considered “mitigation” pursuant to CEQA; rather, they are included as part of the Project description. However, CDFW has determined several of these measures do require site specific details for the Project. Additionally, the location/biological context of the Eel River (a major river system) and the impacts that are being avoided or minimized are potentially significant. Therefore, CDFW recommends the Lead Agency re-evaluate the Project’s Standard Measures and Best Management Practices for inclusion as formal CEQA mitigation measures and incorporation into an MMRP (Recommendation 7). Examples include bird and bat exclusion, hydroacoustic monitoring, aquatic species relocation, river diversion around the work site, and others.

Summary of Recommendations

1. CDFW recommends the Project prepare a more detailed seasonal work plan for submittal in the Project’s pending LSA Notification if ground disturbing activities or other Project elements are proposed between the Eel River top of bank between Oct 16 and June 14 of any year. It would be helpful to have Project figures containing percent slope as well as contour lines for relevant river flow scenarios (e.g., ordinary high water, 2-year, 10-year flow, 50-year flow and 100-year flood elevations).

2. CDFW recommends more detail on the directional drilling element of the Project be included in the pending LSA Notification, including seasonal/weather work restrictions, enter/exit locations, minimum depth of directional drilling under the Eel River, maximum drilling fluid pressure thresholds to prevent frac-outs, and a frac-out contingency plan.

3. CDFW recommends the IS/MND contain a mitigation measure for development of a bumble bee survey plan and implementation, as well as feasible mitigation (including avoidance and minimization) if impacts may occur. Survey methods may utilize elements of existing protocols, such as the Bumble Bee Atlas Program, if it can be demonstrated the Project’s bumble bee survey methods are

adequate to determine potential presence in the Project's environmental study area as well as potential Project impacts.

4. CDFW recommends a re-evaluation of impacts to SNCs and riparian habitat. If Caltrans concludes impacts are potentially significant, cannot be avoided, and cannot be restored to baseline conditions within one year, these impacts should be mitigated at a 3:1 ratio per unit area. An IS/MND mitigation measure should, at minimum, commit to performance standards such as revegetation ratios and success criteria, and should provide location(s) of off-site revegetation areas, including information regarding land ownership and future proposed management plans.

5. CDFW recommends the Project description be revised to include characterization and removal of legacy concrete, rebar, and other discarded materials within the riverbed of the Project area.

6. CDFW recommends the Draft Mitigation Plan Summary be revised to include additional, sufficient details for MMRP standards as well as additional mitigation measures recommended by CDFW in this letter.

7. CDFW recommends the Lead Agency re-evaluate the Project's Standard Measures and Best Management Practices for inclusion as formal CEQA mitigation measures and incorporation into an MMRP. Examples include bird and bat exclusion, hydroacoustic monitoring, aquatic species relocation, river diversion around the work site, and others.

Thank you for the opportunity to comment on this draft IS/MND. CDFW staff are available to meet with you to consult with or address the contents of this letter in greater depth. If you have questions on this matter or would like to discuss these recommendations, please contact Senior Environmental Scientist Specialist Greg O'Connell at Gregory.OConnell@Wildlife.ca.gov.

Sincerely,

DocuSigned by:
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A3FB0F8E51414D9...

Jeffrey Stoddard for
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Ec's on Page 9

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01-0A111 Eel River Bridge Seismic Retrofit Project Responses to Comments from the California Department of Fish and Wildlife Letter Dated November 28, 2022

1. The California Department of Fish and Wildlife (CDFW) recommends the Project prepare a more detailed seasonal work plan for submittal in the Project's pending Lake and Streambed Alteration (LSA) Notification if ground disturbing activities or other Project elements are proposed between the Eel River top of bank between Oct 16 and June 14 of any year. It would be helpful to have Project figures containing percent slope as well as contour lines for relevant river flow scenarios (e.g., ordinary high water, 2-year, 10-year flow, 50-year flow and 100-year flood elevations).

Caltrans Response: The Eel River Bridge Seismic Retrofit Project (Project) is approaching the final design phase. A potential seasonal work plan would be included with the Project's LSA Notification to CDFW. This plan would be based on the final design plans and would describe and delineate expected construction activities that may occur between the north and south banks of the Eel River top-of-bank between October 16 and June 14. Potential work areas and disturbed soil areas outside of these limits would also be delineated. Project figures provided in the LSA Notification would contain the ordinary high-water line and 100-year flood Elevations. Additional flow scenarios would be mapped per LSA Agreement requirements.

2. CDFW recommends more detail on the directional drilling element of the Project be included in the pending LSA Notification, including seasonal/weather work restrictions, enter/exit locations, minimum depth of directional drilling under the Eel River, maximum drilling fluid pressure thresholds to prevent frac-outs, and a frac-out contingency plan.

Caltrans Response: The LSA Notification for the proposed Project is anticipated to be submitted in Fall 2024 and would include final plans for the relocation of high-pressure gas line that requires directional drilling under the Eel River from an upland location in the highway median on the north bank of the Eel River to an upland location in the highway median on the south bank. Drilling and utility relocation plans would include boring pit locations and dimensions, minimum depth of directional drilling under the Eel River streambed, drilling fluid pressure thresholds to prevent the release of drilling fluids into the surface environment, and a contingency plan for such events.

3. CDFW recommends the IS/MND contain a mitigation measure for development of a bumble bee survey plan and implementation, as well as feasible mitigation (including avoidance and minimization) if impacts may occur. Survey methods may utilize elements of existing protocols, such as the Bumble Bee Atlas Program, if it can be demonstrated the Project's bumble bee survey methods are adequate to determine potential presence in the Project's environmental study area as well as potential Project impacts.

Caltrans Response: Caltrans is currently developing seasonably appropriate, obscure bumble bee and western bumble bee survey methods that may include elements of existing survey protocols to evaluate potential bumble bee presence for site specific projects containing potentially suitable habitat. Although potentially suitable bumble bee habitat may exist in friable soils near the margins of the northwestern environmental survey limits on agricultural land, no ground-disturbing activities are anticipated in this habitat. Only marginal bumble bee habitat is potentially present throughout the remaining portion of the ESL and consists of compacted soils in the medians and right of way, brambles, and dense canopy cover. Caltrans will develop bumble bee survey plan and feasible protection measures if needed. Caltrans does *not consider development of a bumble bee survey plan to be a mitigation measure under CEQA required for the proposed Project.*

4. CDFW recommends a re-evaluation of impacts to Sensitive Natural Communities (SNC) and riparian habitat. If Caltrans concludes impacts are potentially significant, cannot be avoided, and cannot be restored to baseline conditions within one year, these impacts should be mitigated at a 3:1 ratio per unit area. An IS/MND mitigation measure should, at minimum, commit to performance standards such as revegetation ratios and success criteria, and should provide location(s) of off-site revegetation areas, including information regarding land ownership and future proposed management plans.

Caltrans Response: As the CEQA Lead Agency, Caltrans has the principal responsibility for analysis and CEQA determinations. The determination Caltrans made for CEQA Checklist section 2.4f that project impacts to SNCs would be less than significant was based on professional biologists' quantitative and qualitative analyses of permanent and temporary impacts to natural communities and tree removal. The analyses concluded these activities would not adversely affect the overall quality, characteristics, or structure of the stands of SNCs in the study area or beyond. These analyses were further refined according to the current project scope and concluded that 0.56 acres, instead of 0.86 acres, of SNCs would be temporarily impacted by the project. As currently scoped, revised project impacts include the removal of a total of up to 8 trees (2 red alder and 6 black cottonwood trees), none of which are over 16 inches in diameter at breast height. Additionally, the tree-limb trimming of three (3) red alder trees would likely occur. A draft Revegetation Plan would be submitted with the CDFW Lake and Streambed Alteration Notification package. This Revegetation Plan would include a plant palette, establishment period, watering regimen, monitoring requirements, and pest control measures. The Revegetation Plan would address measures for riparian areas temporarily impacted by the project.

5. CDFW recommends the Project description be revised to include characterization and removal of legacy concrete, rebar, and other discarded materials within the riverbed of the Project area.

Caltrans Response: Approximately 1000 feet north of the south end of the bridge, concrete and steel are partially visible in the sands and gravels of the riverbed. It is believed that this man-made debris was unintentionally deposited during the flood events of either 1964, 1985, or both. The concrete that is visible is most likely Pier 6 from the original 1941 bridge, or a deck slab from the 1965 emergency repair to the bridge. From the as-built plans, Pier 6 measured approximately 46 feet tall by 50 feet wide by 10 feet thick. If it is a deck slab, it could be 36 feet wide by 110 feet long by 1 foot thick.

The steel that is visible downstream appears to be one of the framed steel support systems built to support the deck slabs in 1965 as part of the emergency repair. From the as-builts, these steel frames consist of 4 steel columns and 2 cross braces that are 14 inches wide by 40 feet long and weigh 73 pounds per foot.

Given that the submerged bridge elements are only partially visible, an estimate of their size from the as-built plans is the best information available and may not present the whole picture. For example, it cannot be determined if the concrete debris consists of more than one layer, which is possible as the bridge failed twice at this location during flooding.

To perform the planned retrofit work of the north portion of the bridge, it is anticipated a temporary trestle measuring approximately 20 feet to 30 feet wide could be installed on both the upstream and *downstream sides of the existing bridge. Caltrans cannot direct the contractor in this determination. It would be the contractor's job to decide the best way to develop access and perform the planned contract work, as allowed under the Project's environmental document and agency approvals, such as the LSA Agreement. Caltrans will not know the specific plan for access until the Project is awarded and trestle plans are submitted by the contractor for approval. If the Contractor proposes that the only viable way to perform the planned work is to build a trestle on both upstream and downstream sides, and that removal of the concrete must take place beforehand, a removal plan would be submitted for Caltrans and regulatory agency approval. The steel framed system lying further downstream would not affect the planned work or any access to it.*

Removal of the concrete and steel debris, beyond minor work required for worker safety such as removal of exposed rebar in the work area, has been deemed infeasible under the proposed Project due to the added cost, potentially extensive environmental impacts, and time required for clearances and permits.

Caltrans has agreed to survey, photograph, and characterize the concrete and steel debris within the ESL to the greatest extent feasible by December 31, 2023. Caltrans will share its findings and continue to cooperate with CDFW.

6. CDFW recommends the Draft Mitigation Plan Summary be revised to include additional, sufficient details for Mitigation Monitoring and Reporting Program (MMRP) standards as well as additional mitigation measures recommended by CDFW in this letter.

Caltrans Response: Given mitigation and monitoring plans are generally approved by administering agencies during the permitting phase of a project (e.g., CDFW LSA Agreement), Caltrans typically prepares detailed project mitigation plans during the final design phase of project development. Mitigation and monitoring measures would be approved by CDFW before implementation.

7. CDFW recommends the Lead Agency re-evaluate the Project's Standard Measures and Best Management Practices for inclusion as formal CEQA mitigation measures and incorporation into an MMRP. Examples include bird and bat exclusion, hydroacoustic monitoring, aquatic species relocation, river diversion around the work site, and others.

Caltrans Response: Under CEQA, "mitigation" is defined as avoiding, minimizing, rectifying, reducing/ eliminating, and compensating for an impact. In contrast, Standard Measures and Best Management Practices (BMPs) are prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring for a project. They are measures that typically result from laws, permits, agreements, guidelines, and resource management plans and contain refinements in planning policies and implementing actions. These practices predate the project's proposal and apply to all similar projects. For this reason, the measures and practices are not considered "mitigation" under CEQA; rather, they are included as part of the project description in environmental documents and are considered prior to CEQA determinations being made.

Caltrans develops an Environmental Commitments Record (ECR) for each project and is essentially a MMRP. The purpose of the ECR is to ensure that Caltrans meets its environmental commitments by recording each environmental mitigation, compensation, and enhancement commitment made for each individual project specifying how each commitment will be met and documenting the completion of each commitment.

Contract specifications and provisions are work items that must be completed by the contractor to fulfill the contract requirements. These specifications and provisions, including environmental commitments required in approvals (e.g., LSAA), are binding and incorporated into the plan and addressed in the construction contract prior to being awarded.

CALIFORNIA STATE LANDS COMMISSION
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Established in 1938

November 30, 2022

File Ref: SCH #2022100650

Caltrans, District 1
Zachary Larson
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Eureka, CA 95501

VIA ELECTRONIC MAIL ONLY *zarchary.larson@dot.ca.gov*

Subject: Initial Study/Mitigated Negative Declaration for Eel River Bridge Seismic Retrofit, Humboldt County

Dear Zachary Larson:

The California State Lands Commission (Commission) staff has reviewed the Initial Study/Mitigated Negative Declaration (IS/MND) for the Eel River Bridge Seismic Retrofit (Project), which is being prepared by the California Department of Transportation, District 1 (Caltrans). Caltrans, as the public agency proposing to carry out the Project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The Commission is a trustee agency for projects that could directly or indirectly affect State sovereign land and their accompanying Public Trust resources or uses. Additionally, because the Project involves work on State sovereign land, the Commission will act as a responsible agency.

Commission Jurisdiction and Public Trust Lands

The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust Doctrine.

The existing Eel River Bridge No. 04-0016R, also referred to as the Paul Mudgett Memorial Bridge, extends across the bed of the Eel River, which at this location is natural, subject to artificial conditions (gravel extraction activities), navigable, non-tidal sovereign land. On March 1, 1966, the Commission authorized a lease (Lease No. PRC 3445.9) to the Department of Transportation for the continued use and maintenance of the Paul Mudgett Memorial bridge. The lease is for the life of the bridge plus one year, beginning March 1, 1966. Pursuant to the terms of the lease, prior review and approval is required for repairs and improvements. The Lessee will need to submit an application to the Commission for review. The application is available on our website at OSCAR.slc.ca.gov.

The Project also appears to include the relocation of utilities, which must be brought under lease if located on State sovereign land. For the Commission, to authorize the installation of utilities on sovereign land the potential environmental impacts of such work must be fully analyzed to inform the Commission's decision.

Promotion of public access to and use of California's navigable waters is a mandate of the California Constitution (Article 10, Section 4), a condition of statehood in the Act of Admission (Vol. 9, Statutes at Large, page 452), and a responsibility of State agencies pursuant to the Public Trust Doctrine. In this case, the Legislature has provided for a process to be followed regarding promoting access at bridge sites in the California Streets and Highways Code section 84.5. During the design hearing process, Caltrans is required to prepare a report on the feasibility of providing public access to the waterway, for recreational purposes, and determine if such public access will be provided.

Project Description

Caltrans proposes to seismically retrofit the Eel River Bridge to meet the agency's objectives and needs for repair of the seismic deficiencies of the bridge and improve its structural integrity to withstand a seismic event.

From the Project Description, Commission staff understands that the following Project components have potential to affect State sovereign land:

- Relocating underground utilities (PG&E high pressure gas line and City of Rio Dell water line)
- Remove existing through-truss bridge
- At Pier 5, construct new pier, seismic joint, and base isolation bearing
- Construct new Pre-stressed, Cast-In-Place Box Girder Bridge
- Retrofit footings as Piers 6, 7, and 8
- Retrofit Abutment 9
- Place 1-inch polyester overlay from Abutment 1 to Abutment 9
- Remove northbound approach roadway section

- Construct retaining wall
- Install drainage inlet and rock slope protection (RSP) dissipator
- Construct realigned northbound roadway approach to Abutment 1

Environmental Review

Commission staff requests that Caltrans consider the following comments on the Project's IS/MND, to ensure that impacts to State sovereign lands are adequately analyzed for the Commission's use of the IS/MND when considering a future lease application for the Project.

General Comments

1. Project Description: Commission staff was unclear which components of the Project would be under the Commission's jurisdiction. When submitting an application with the Commission for the Project, please ensure that engineering plans identify the ordinary low water mark of the Eel River for all components of the Project, including temporary roads and other falsework necessary to complete the Project.

2. Mitigation Measures: Mitigation measures were not discussed in the IS/MND. In addition, there was no discussion of how mitigation measures and best management practices would reduce impacts to less than significant. Mitigation measures as well as a Mitigation Monitoring Program (MMP) adopted by Caltrans will be necessary to complete an application with the Commission before construction on the Project can start.

Biological Resources

3. Impacts to Pacific Salmon Evolutionarily Significant Units and Essential Fish Habitat: In Section 2.4, Biological Resources, the determination under Federal Endangered Species Act of "may affect, is likely to adversely affect" for Chinook Salmon – California Coastal Evolutionarily Significant Units (ESU), Coho Salmon – Southern Oregon/Northern California Coast ESU, Steelhead – Northern California Distinct Population Segments (DPS), Steelhead – Summer-run DPS, and Pacific Salmon Essential Fish Habitat would require consultation with the National Marine Fisheries Service (NMFS). A copy of the Biological Assessment as well as the Biological Opinion issued by NMFS will be required to complete an application with the Commission.

Cultural Resources

4. Title to Resources within Commission Jurisdiction: The IS/MND should state that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is

vested in the State and under the jurisdiction of the Commission (Pub. Resources Code, § 6313). Commission staff requests that Caltrans consult with Staff Attorney Jamie Garrett should any cultural resources on state lands be discovered during construction of the Project.

Staff requests that the following statement be included in the IS/MND's MMP: "The final disposition of archaeological, historical, and paleontological resources recovered on State land under the jurisdiction of the California State Lands Commission must be approved by the Commission."

Recreation

5. Public Access: The IS/MND should include a section describing the potential for the Project to affect recreational uses and public access to the Eel River. The IS/MND should discuss the recreational uses and access points in the Project vicinity, whether and to what extent these uses would be facilitated or disrupted by the Project, and what, if any, measures could be implemented to reduce potential negative impacts. This discussion should also identify measures Caltrans will put in place to ensure public safety for recreational activities. Measures could include a public notice and Project area signage provided in advance of the Project, notifying the public of any disruptions or creation of alternate access points or use areas.

Staff appreciates the opportunity to comment on the IS/MND for the Project. As a responsible agency, the Commission will rely on the adopted MND for issuance of a new lease as specified above (see Section "Commission Jurisdiction and Public Trust Lands"). We request that you consider our comments before adopting the MND.

Please send electronic copies of the adopted MND, MMP, Notice of Determination, and approving resolution when they become available. Please note that federal and state laws require all government entities to improve accessibility of information technology and content by complying with established accessibility requirements. (29 U.S.C. § 794d; 36 C.F.R. § 1194.1 et seq.; Gov. Code, § 7405.) California State law prohibits State agencies from publishing on their websites content that does not comply with accessibility requirements. (Gov. Code, § 115467.) Therefore, any documents submitted to Commission staff during the processing of a lease or permit, including all CEQA documentation, must meet accessibility requirements for Commission use of the documents and issuance of a lease.

Please refer questions concerning environmental review to Christine Day, Environmental Scientist, at Christine.Day@slc.ca.gov or (916) 562-0027. For questions concerning archaeological or historic resources under Commission jurisdiction, please contact Jamie Garrett, Staff Attorney, at

Jamie.Garrett@slc.ca.gov or (916) 574-0398. For questions concerning Commission leasing jurisdiction, please contact Ninette Lee, Public Land Manager, at Ninette.Lee@slc.ca.gov or (916) 574-1869.

Sincerely,

Nicole Dobroski

Nicole Dobroski, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
C. Day, Commission
N. Lee, Commission
J. Garrett, Commission

01-0A111 Eel River Bridge Seismic Retrofit Draft Responses to Comments from the California State Lands Commission Letter Dated November 30, 2022

General Comments from SLC

1. Project Description: Commission staff was unclear which components of the Project would be under the Commission's jurisdiction. When submitting an application with the Commission for the Project, please ensure that engineering plans identify the ordinary low water mark of the Eel River for all components of the Project, including temporary roads and other falsework necessary to complete the Project.

Caltrans Response: Caltrans will apply for a temporary construction easement with the Commission. The application will include a map with ordinary low water mark identified pursuant to Streets and Highways Code Section 101.5.

2. Mitigation Measures: Mitigation measures were not discussed in the IS/MND. In addition, there was no discussion of how mitigation measures and best management practices would reduce impacts to less than significant. Mitigation measures as well as a Mitigation Monitoring Program (MMP) adopted by Caltrans will be necessary to complete an application with the Commission before construction on the Project can start.

Caltrans Response: Under CEQA, "mitigation" is defined as avoiding, minimizing, rectifying, reducing/ eliminating, and compensating for an impact. In contrast, Standard Measures and Best Management Practices (BMPs) are prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring for a project. They are measures that typically result from laws, permits, agreements, guidelines, and resource management plans. For this reason, the measures and practices are not considered "mitigation" under CEQA; rather, they are included as part of the project description in environmental documents and are considered prior to CEQA determinations being made. Given they are not "mitigation" and are included as part of the project description, were not included within the avoidance, minimization, and mitigation sections of an environmental document. Standard Measures and Best Management Practices were discussed in the Draft Initial Study under the project description, Section 1.4. Mitigation measures were also discussed in section 2.4(f) and in Appendix F. A Final Mitigation Summary and MMRP or equivalent would be provided to the State Lands Commission with the application prior to the construction phase of the proposed Project.

Biological Resources

3. Impacts to Pacific Salmon Evolutionarily Significant Units and Essential Fish Habitat: In Section 2.4, Biological Resources, the determination under Federal Endangered Species Act of "may affect, is likely to adversely affect" for Chinook Salmon – California Coastal Evolutionarily Significant Units (ESU), Coho Salmon – Southern Oregon/Northern California Coast ESU, Steelhead – Northern California Distinct Population Segments (DPS), Steelhead – Summer-run DPS, and Pacific Salmon Essential Fish Habitat would require consultation with the National Marine Fisheries Service (NMFS). A copy of the Biological Assessment (BA) as well as the Biological Opinion (BO) issued by NMFS will be required to complete an application with the Commission.

Caltrans Response: The Caltrans BA and NMFS BO would be included in the application with the Commission. During Technical Assistance with NMFS, it was determined that the proposed project may affect, is not likely to adversely affect coho salmon – Southern Oregon/Northern California Coast ESU. Additionally, Caltrans determined the project would have "Less Than a Significant Impact" on summer-run steelhead listed under the California Endangered Species Act. The impact determinations under CEQA for these two CESA listed species has been correspondingly reduced to Less than Significant and the project would have no "Take" of coho salmon or summer-run steelhead.

Cultural Resources

4. Title to Resources within Commission Jurisdiction: The IS/MND should state that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the Commission (Pub. Resources Code, § 6313). Commission staff requests that Caltrans consult with Staff Attorney Jamie Garrett should any cultural resources on state lands be discovered during construction of the Project.

Staff requests that the following statement be included in the IS/MND's MMP: "The final disposition of archaeological, historical, and paleontological resources recovered on State land under the jurisdiction of the California State Lands Commission must be approved by the Commission."

Caltrans Response: The following statement has been included in the Final Environmental Document. "The final disposition of archaeological, historical, and paleontological resources recovered on State land under the jurisdiction of the California State Lands Commission must be approved by the Commission."

Recreation

5. Public Access: The IS/MND should include a section describing the potential for the Project to affect recreational uses and public access to the Eel River. The IS/MND should discuss the recreational uses and access points in the Project vicinity, whether and to what extent these uses would be facilitated or disrupted by the Project, and what, if any, measures could be implemented to reduce potential negative impacts. This discussion should also identify measures Caltrans will put in place to ensure public safety for recreational activities. Measures could include a public notice and Project area signage provided in advance of the Project, notifying the public of any disruptions or creation of alternate access points or use areas.

Caltrans Response: There are no boat ramps within the project limits, however, recreational use of the river is anticipated. The contractor will be required to maintain a passable portage described in the following construction contract specification:

-4.01C: For bridges, embankments, falsework, or other temporary work constructed within the limits of the usable channel of South Fork Eel River, provide 1 opening for the passage of small boats. The opening must have a horizontal clearance of at least 20 feet measured normal to the direction of flow and a vertical clearance of at least 8 feet measured from the normal water elevation. Mark the opening and the approach channels under 14 CA Code of Regs § 7000 et seq.

Additional SLC Comments

Please send electronic copies of the adopted MND, MMP, Notice of Determination, and approving resolution when they become available. Please note that federal and state laws require all government entities to improve accessibility of information technology and content by complying with established accessibility requirements. (29 U.S.C. § 794d; 36 C.F.R. § 1194.1 et seq.; Gov. Code, § 7405.) California State law prohibits State agencies from publishing on their websites content that does not comply with accessibility requirements. (Gov. Code, § 115467.) Therefore, any documents submitted to Commission staff during the processing of a lease or permit, including all CEQA documentation, must meet accessibility requirements for Commission use of the documents and issuance of a lease.

Caltrans Response: The comment has been noted. Documents would be sent to SLC when available.

From:	Parker, Gabriel@CHP
To:	Brady, Marie A@DOT; OPR State Clearinghouse
Cc:	CHP-10AAdesk; Lange, Kristen@CHP; Morris, Shawn@CHP; McCanless, Tamera@CHP; CHP-EIR
Subject:	RE: Environmental Document Review – SCH # 2022100650 – Due to Lead Agency by 11/28/2022
Date:	Friday, November 11, 2022 2:30:50 PM
Attachments:	image001.png

Good afternoon,

After reviewing the Eel River Bridge Seismic Retrofit environmental documents, the lead agency (CalTrans) expects to detour traffic from the northbound lanes of US 101 to the southbound lanes of US 101 which will cause moderate impact to CHP operations. Both the Garberville CHP and Humboldt CHP Areas traverse through the project location on a daily basis during routine patrol and travel to and from medical and custodial facilities in Eureka. With mitigation measures in place in the form of a detour, travel through the area will flow with a slower pace. Although traffic typically remains light in the area throughout the day, this project would have less impact if the involved construction occurred during the hours of darkness. It is expected that onsite traffic safety signage and warnings will be implemented with CalTrans being the lead agency. The Humboldt CHP Area recommends safety messages and advisories be disseminated to the media platforms by CalTrans throughout Humboldt County prior to the construction date.

As the project timeframe approaches, the Humboldt CHP Area request notification of any changes in the expected impact from the lead agency (DOT) and advisement if reimbursable contracts with CHP will be needed.

Thank you,

Sergeant Gabriel Parker
California Highway Patrol
Humboldt Area
255 East Samoa Blvd.
Arcata, CA 95521
Phone:(707) 822-5981
Email: gparker@chp.ca.gov

From: CHP-EIR <EIR@chp.ca.gov>
Sent: Thursday, November 10, 2022 3:47 PM
To: Parker, Gabriel@CHP <GParker@chp.ca.gov>; Morris, Shawn@CHP <SMorris@chp.ca.gov>

Cc: CHP-10AAdesk <10AAdesk@chp.ca.gov>; Lange, Kristen@CHP <Kristen.Lange@chp.ca.gov>
Subject: Environmental Document Review – SCH # 2022100650 – Due to Lead Agency by 11/28/2022

Good afternoon,

Special Projects Section (SPS) recently received the referenced Notice of Environmental Impact document from the State Clearinghouse (SCH) outlined in the following Web site:

Eel River Bridge Seismic Retrofit (ca.gov)

Due to the project's geographical proximity, please use the attached checklist to assess its potential impact to local operations and public safety. **If impact is determined**, responses should be e-mailed directly to the Lead Agency with cc to SCH and myself. **If there is no impact**, please do not include SCH or the Lead Agency in your response.

For more information on the EIR review process, please check out: Commanders EIR Training.pdf.

Please feel free to e-mail me if you have any questions.

Thank you,

Kristen Lange, Staff Services Analyst
Special Projects Section, Transportation Planning Unit
CHP Headquarters
601 N. 7th Street
Sacramento, CA 95811
Office: (916) 843-3370
Direct: (916) 843-3386

Appendix H. Environmental Commitments Record

DIST-CO-RTE: 01 - HUM - 101 **PM/PM:** R53.7/M54.2

Environmental Commitments Record (ECR)

Project Description: EEL RIVER BRIDGE SEISMIC RETROFIT

EA/Project ID: 01-0A111_ / 0116000148

Date (Last modification): 5/15/2023

Environmental Planner: Zachary Larson **Phone:** 707-382-1849

Construction Liaison: **Phone:**

Resident Engineer: **Phone:**

PERMITS

Permit	Agency	Application Submitted	Permit Received	Permit Expiration	Permit Requirements Completed by	Permit Requirements Completed on	Comments
1600	California Department of Fish & Wildlife						
1600 Geotech	California Department of Fish & Wildlife	4/29/22	8/29/22				
401	Regional Water Quality Control Board						
401 Pre-Certified	Regional Water Quality Control Board	6/7/22	9/1/22	9/1/27			
404 Nationwide	US Army Corps of Engineers						
404 Nationwide Verification	US Army Corps of Engineers	5/2/22	6/13/22				
BO (NMFS)	National Marine Fisheries Service	4/24/23					
Programmatic BO	National Marine Fisheries Service	10/5/21	10/5/21				

ENVIRONMENTAL COMMITMENTS

PS&E/BEFORE RTL

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Biology	Complete Section 7 Consultation with the National Marine Fisheries Service.	BO	n/a	Biologist	Complete Section 7 Consultation with the National Marine Fisheries Service.					

Environmental Commitments Record for EEL RIVER BRIDGE SEISMIC

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Biology	Prepare LSA Notification (1600 Agreement)/application.	1600 Agreement	n/a	Biologist	Submit LSA Notification through EPIMS.					
Hazardous Waste	If bridge rails are removed use SSP 14.11.16 ASBESTOS CONTAINING CONSTRUCTION MATERIALS IN BRIDGES.	ISA	SSP	OE/RE	Follow SSP 14.11.16 ASBESTOS CONTAINING CONSTRUCTION MATERIALS IN BRIDGES. include ASBESTOS COMPLIANCE PLAN as a contract item for disturbance/handling of barrier rail shims if bridge rails are to be removed.					
Hazardous Waste	If rail shims removed include Asbestos compliance plan as contract item SSP 14-11.16 Copy above..	ISA	SSP	OE	Use SSP 14-11.16 ASBESTOS					
Hazardous Waste	Lead Compliance Plan	ISA	SSP	OE/RE	Include LEAD COMPLIANCE PLAN as contract item.					
Hazardous Waste	SSP 14-11.14 TREATED WOOD WASTE Management (guard rail and sign post removal).	ISA	SSP	OE/RE	include SSP 14-11.14 in construction contract. Include Treated Wood Waste Disposal Item. Contact D1 Office of Env. Engineering for SSPs.					
Hazardous Waste	SSP 14-9.02 ASBESTOS NESHAP NOTIFICATION for the North Coast Unified Air Quality Management District (NCUAQMD)	ISA	SSP	OE/RE	Include SSP 14-9.02 ASBESTOS NESHAP NOTIFICATION in the specification package.					
Visual Resources	1.Replant trees and vegetation wherever removed for construction activities with regionally appropriate species 2. Include aesthetic treatment to concrete barrier rail to add interest, to break up the solid face of both the inside and outside facing barrier rail, and to reflect local values 3. Plant trees to screen retaining wall 4. Stain retaining wall a brown color to minimize contrast 5. Use construction mats on access roads to minimize soil compaction and impacts to vegetation and tree roots	Env Doc	n/a	Landscape Architecture, Design	Incorporate the bid items and SSP's associated with the visual recommendations into the PS&E package					
Water Quality	Evaluate implementation of post-construction stormwater	WQAR	n/a	NPDES						

Category	Task and Brief Description	Source	Included in PS&E	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed	Remarks	Mitigation for significant impacts under
	treatment controls			Coordinator						
Other	Boat Passage: Section 12-4.01C. Use for providing passage of small boats if not provided for by a PLAC. Within the limits of the usable channel of Eel River, provide 1 opening for the passage of small boats.	Env Doc	NSSP	OE, RE	The opening must have a horizontal clearance of at least 20 feet measured normal to the direction of flow and a vertical clearance of at least 8 feet measured from the normal water elevation. Mark the opening and the approach channels under 14 CA Code of Regs § 7000 et seq					

PRE-CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Biology	Pre-construction surveys for active raptor nests within one quarter mile would be conducted by a qualified biologist within one week prior to the initiation of construction activities. If any active raptor nests are identified, implement conservation measures determined by biologist.	Env Doc	SSP	Biologist	SSP 14-6.03A Species Protection					
Biology	The contractor would be required to prepare and submit a Construction Site Dewatering /Diversion Plan to Caltrans for approval prior to any dewatering.	Env Doc	SSP	Biologist	Std Spec Job Site Management 13-4.01C Submittals					
Hazardous Waste	Lead Compliance Plan as Cotract Item: Prior to any disturbance/ removal of earthwork, paint or thermoplastic contractor would be required to submit a Lead Compliance Plan. 7-1.02K(6)(j)(ii)	ISA	Std. Spec	RE	Lead Compliance Plan as contract item. 7-1.02K(6)(j)(ii)					
Hazardous Waste	Prior to demolition activities use SSP 14-9.02 ASBESTOS NESHAP NOTIFICATION for the North Coast Unified Air Quality Management District (NCUAQMD)	ISA	SSP	RE	Use SSP 14-9.02 ASBESTOS NESHAP NOTIFICATION					

CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Air Quality	Use Standard Special Provision (SSP) 14-9.03.Dust Control	Env Doc	SSP	OE, RE						

Environmental Commitments Record for EEL RIVER BRIDGE SEISMIC

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Biology	A qualified biologist would monitor in-stream construction activities during all activities that could potentially impact sensitive biological receptors. The biological monitor would be present during activities such as installation and removal of dewatering or diversion systems bridge demolition, hoe-ramming, drilling for bridge foundations, and concrete pours to ensure adherence to all environmental permit conditions.	Env Doc	SSP	RE, Biologist	SSP 14-6.03D Contractor Supplied Biologist					
Biology	All equipment would be thoroughly cleaned of all dirt and vegetation prior to entering the Environmental Study Limits (ESL) to prevent importing invasive non-native species. Project personnel would adhere to the latest version of the Northern Region California Department of Fish and Wildlife Aquatic Invasive Species Cleaning/Decontamination Protocol for all field gear and equipment in contact with water.	Env Doc	SSP	RE	SSP 14-6.05 Invasive Species Control					
Biology	An Aquatic Species Relocation Plan would be prepared by the Contractor and include provisions for pre-construction surveys and the appropriate methods or protocols to relocate any species found. This Plan may be included as part of the Construction Site Dewatering and Diversion Plan. Any electrofishing for salmonids would comply with Guidelines for Electrofishing Waters Containing Salmonids listed under the Endangered Species Act (NMFS 2000) and performed by only qualified individuals with appropriate training and experience in electrofishing techniques.	Env Doc	n/a	RE						
Biology	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. Construction activities performed outside of the bed, bank, or channel of a watercourse that could potentially directly impact surface waters (i.e., soil disturbance that could lead to turbidity) would be performed during the dry season, typically between June through October, or as weather permits per the approved contractor-prepared Water Pollution Control Plan (WPCP)/Storm Water Pollution Prevention Plan (SWPPP) and/or project permit requirements.	Env Doc	SSP	RE	SSP 14-063A Species Protection					
Biology	Prior to the start of work, Temporary High Visibility Fencing (THVF) and/or flagging would be installed around sensitive natural communities, environmentally sensitive habitat areas, rare plant occurrences, intermittent streams, wetlands and other waters, where appropriate. No work would occur within fenced/flagged areas.	Env Doc	SSP	RE	SSP 14-1.02 Environmentally Sensitive Area (ESA)					
Biology	To prevent attracting corvids (birds of the Corvidae family	NES	Std. Spec	RE	Std. Spec 14-10.01					

Environmental Commitments Record for EEL RIVER BRIDGE SEISMIC

Category	Task and Brief Description	Source	Included in PS&E	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed	Remarks	Mitigation for significant impacts under
	which include jays, crows, and ravens), no trash or foodstuffs would be left or stored on-site. All trash would be deposited in a secure container daily and disposed of at an approved waste facility at least once a week. Also, on-site workers would not attempt to attract or feed any wildlife.				Solid Waste Disposal and Recycling General					
Biology	To protect migratory and nongame birds, their occupied nests and eggs, vegetation removal would be restricted to September 16 through January 31, outside of the bird breeding season, or, if vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist within one week prior to vegetation removal. If an active nest were located, the biologist would coordinate with the CDFW to establish appropriate species-specific buffer(s) and any monitoring requirements.	Env Doc	SSP	RE, Biologist	SSP 14-6.03A Species Protection. Migratory bird surveys if vegetation removal will occur during the bird breeding season.					
Cultural Resources	If cultural materials are discovered during construction, work activity within a 60-foot radius of the discovery will be stopped and the area secured until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer (SHPO).	Std. Spec		RE						
Cultural Resources	If human remains and related items are discovered on private or State land, they would be treated in accordance with State Health and Safety Code § 7050.5. Further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted.	Std. Spec		RE						
Hazardous Waste	Disturbance of Bridge Paint Systems: Use SSP 14-11.13 DISTURBANCE OF EXISTING PAINT SYSTEMS ON BRIDGES.	ISA	SSP	OE/RE	Follow SSP 14-11.13 DISTURBANCE OF EXISTING PAINT SYSTEMS ON BRIDGES					
Hazardous Waste	If bridge rails are removed use SSP 14.11.16 ASBESTOS CONTAINING CONSTRUCTION MATERIALS IN BRIDGES.	ISA	SSP	RE	Follow SSP 14.11.16 ASBESTOS CONTAINING CONSTRUCTION MATERIALS IN BRIDGES. include ASBESTOS COMPLIANCE PLAN as a contract item for disturbance/handling of barrier rail shims if bridge rails are to be					

					removed.					
Hazardous Waste	Soil disturbance/removal, SSP 7.1.02K(6)(j)(iii) EARTH MATERIAL CONTAINING LEAD.	ISA	SSP	OE/RE	Follow SSP 7-1.02K(6)(j)(iii)					
Hazardous Waste	SSP 36-4 CONTAINING LEAD FROM PAINT AND THERMOPLASTIC	ISA	SSP	RE	Follow SSP 36-4					
Hazardous Waste	SSP 84-9.03 REMOVE TRAFFIC STRIPES AND PAVEMENT MARKINGS CONTAINING LEAD	ISA	SSP	RE	Follow SSP 84-9.03					
Noise	SSP 14-8.2 Noise Control	SSP	Yes	RE	Do not exceed 86dBA LMax at 50 feet from Job site activities from 9 p.p. to 6 a.m.					

POST-CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Permits	After construction is completed, a revegetation plan would be implemented. All disturbed areas would be revegetated with native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions. Invasive species removal and other on-site enhancement activities would be incorporated to offset impacts to waters. Monitoring and maintenance of native plant re-establishment and non-native colonization would be implemented.	401 Permit	n/a	Reveg	Develop and implement an on-site Revegetation Plan as required by project permits.					
Permits	If necessary, offsite mitigation for wetlands via the use of state wetland credits as outlined in the Fen Parcel Cooperative Agreement agreed upon by NCRWQCB, CDFW, and Caltrans on 12/14/2021. According to Recital 2.c. of the Cooperative Agreement, Caltrans may apply credits for 01-0A111, Eel River Bridge Seismic Retrofit, Bridge No. 04-0016R, HUM 101 PM M53.9, with an estimated impact of 1.0 acre to wetlands. Permanent impacts to Waters of the State (wetlands) from project activities are 0.000 acre, significantly less than the estimated 1.0 acre of impacts listed in the Fen Parcel Cooperative Agreement.	Env Doc	n/a	RE	Develop and implement off-site mitigation as required by agency permits and described in the cooperative agreement					
Permits	Riparian vegetation impacts from geotechnical drilling access would be addressed after bridge construction. Approx three 12 dbh cottonwoods would be removed for access for geotechnical survey. Replacement of the trees will be addressed after bridge construction in the main	401 Permit	n/a	RE/Reveg						

projects reveg plan.

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