

PUDDING CREEK BRIDGE WIDENING AND BRIDGE RAIL UPGRADE PROJECT

**MENDOCINO COUNTY, CALIFORNIA
DISTRICT 1 – MEN – 1 (Post Mile 62.12)
EA 01-43480 / 0100000672**

INITIAL STUDY
with Proposed Negative Declaration



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



June 2020



General Information about this Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study with proposed Negative Declaration (IS/ND) which examines the potential environmental effects of a proposed project on State Route 1 in Mendocino County. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this document.
- Additional copies of this document and related technical studies are available for review on weekdays between 8:00 a.m. to 5:00 p.m. at the Caltrans District Office at 1656 Union Street, Eureka, CA 95501. Due to COVID-19 concerns, please call (707) 441-5930 beforehand to make arrangements for document review under social distancing protocols.
- This document may also be downloaded at the following website:
 - <https://dot.ca.gov/caltrans-near-me/district-3/d3-programs/d3-environmental/d3-environmental-docs> and click on the Mendocino County link.
- Paper copies of this document and related technical studies are available upon request. Please contact Liza Walker at (707) 441-5930 or by e-mail at puddingcreekbridge@dot.ca.gov.
- Attend the virtual public meeting. Due to restrictions on public gatherings stemming from COVID-19, a virtual public meeting will be held for this project on **Thursday, July 16, 2020 from 5:30 to 7:00 p.m.**
 - To join the virtual meeting using a telephone, dial (408) 418-9388 and use meeting number 146 942 6188.
 - To join the virtual meeting on a computer or smartphone, please visit the Caltrans website above on the day of the meeting.

- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments via U.S. mail to Caltrans by the deadline.
 - Please send comments via U.S. mail to:
California Department of Transportation
Attention: Liza Walker
North Region Environmental–District 1
1656 Union Street
Eureka, CA 95501
 - Send comments via e-mail to: puddingcreekbridge@dot.ca.gov
 - Be sure to send comments by the deadline: **August 7, 2020**

What happens after this?

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

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Bonnie Kuhn, 1656 Union Street, Eureka, CA 95501; (707) 441-4678 Voice, or use the California Relay Service TTY number, 711 or 1-800-735-2929.

**PUDDING CREEK BRIDGE WIDENING AND
BRIDGE RAIL UPGRADE PROJECT**

Bridge widening and bridge rail upgrade on State Route 1
at post mile 62.12 in Mendocino County

**INITIAL STUDY WITH
PROPOSED NEGATIVE DECLARATION**

Submitted Pursuant to: Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

06/05/2020

Date of Approval



Brandon Larsen, Office Chief
North Region Environmental-District 1
California Department of Transportation
CEQA Lead Agency

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

Liza Walker, North Region Environmental-District 1
1656 Union Street, Eureka, CA 95501
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or use the California Relay Service TTY number, 711 or 1-800-735-2929.



Proposed Negative Declaration

Pursuant to: Division 13, California Public Resources Code

SCH Number: Pending

Project Description

The California Department of Transportation (Caltrans) proposes to widen the bridge structure and upgrade the bridge railing of Pudding Creek Bridge on State Route 1 at post mile (PM) 62.12 in Mendocino County.

Determination

This proposed Negative Declaration (ND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an ND for this project. This does not mean that Caltrans' decision regarding the project is final. This ND is subject to change based on comments received by interested agencies and the public.

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

The project would have *no effect* with regard to agriculture and forest resources, air quality, cultural and paleontological resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, transportation/traffic, tribal cultural resources, utilities and service systems, and wildfire.

The project would have *less than significant impacts* with regard to aesthetics, biological resources, greenhouse gas emissions, and noise.

Brandon Larsen, Office Chief
North Region Environmental-District 1
California Department of Transportation

Date



Table of Contents

	Page
Proposed Negative Declaration.....	i
Table of Contents	i
List of Appendices	iii
List of Tables and Figures	iv
List of Abbreviated Terms	v
Chapter 1. Proposed Project	1
1.1. Project History	1
1.2. Project Description	1
1.3. Project Maps.....	7
1.4. Permits and Approvals Needed.....	9
1.5. Standard Measures and Best Management Practices Included in All Alternatives	9
1.6. Discussion of the NEPA Categorical Exclusion.....	16
Chapter 2. CEQA Environmental Checklist	17
Environmental Factors Potentially Affected.....	17
Project Impact Analysis Under CEQA for Initial Study	18
2.1. Aesthetics	21
2.2. Agriculture and Forest Resources	28
2.3. Air Quality	30
2.4. Biological Resources	31
2.5. Cultural Resources	92
2.6. Energy	93
2.7. Geology and Soils	94
2.8. Greenhouse Gas Emissions.....	96
2.9. Hazards and Hazardous Materials	115
2.10. Hydrology and Water Quality	117
2.11. Land Use and Planning	119
2.12. Mineral Resources.....	120

2.13.	Noise.....	121
2.14.	Population and Housing	124
2.15.	Public Services	125
2.16.	Recreation	126
2.17.	Transportation/Traffic	127
2.18.	Tribal Cultural Resources	128
2.19.	Utilities and Service Systems	129
2.20.	Wildfire.....	130
2.21.	Mandatory Findings of Significance	132
2.22.	Cumulative Impacts	133
Chapter 3.	Coordination and Comments	135
	Coordination with Resource Agencies	135
Chapter 4.	List of Preparers.....	141
	California Department of Transportation	141
Chapter 5.	Distribution List.....	143
	Federal and State Agencies	143
	Regional/County/Local Agencies	144
Chapter 6.	References.....	145

List of Appendices

APPENDIX A.	Title VI Policy Statement
APPENDIX B.	Layouts of Proposed Work
APPENDIX C.	USFWS and NMFS Species List
APPENDIX D.	Botanical Survey Results

List of Tables and Figures

	Page
Table 1. Agency Approvals	9
Table 2. Species Associated with Various EFH Types in the Pudding Creek Estuary	52
Table 3. Maximum Greenhouse Gas Emissions from Construction.....	105
Table 4. Agency Coordination and Professional Contacts.....	135

	Page
Figure 1. Project Vicinity	7
Figure 2. Environmental Study Limits with Biological Study Area and Butterfly Survey Buffer	8
Figure 3. Extent of Various Noise Impact Thresholds During Impact Hammer Activity at Pudding Creek Bridge	76
Figure 4. U.S. 2016 Greenhouse Gas Emissions	101
Figure 5. California 2017 GHG Emissions (Source CARB 2019a).....	102
Figure 6. Change in California GDP, Population, and GHG Emissions Since 2000 ...	103
Figure 7. California Climate Strategy.....	106
Figure 8. Noise Levels of Common Activities	122

List of Abbreviated Terms

Abbreviation	Description
AB	Assembly Bill
ARB	Air Resources Board
AASHTO	American Association of State Highway and Transportation Officials
BMPs	Best Management Practices
BO	Biological Opinion
BSA	Biological Study Area
BSSB	Behren's Silverspot Butterfly
CAFE	Corporate Average Fuel Economy
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CC	California Coastal
CCC	California Coastal Commission
CCR	California Code of Regulations
CCT	California Coastal Trail
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH ₄	Methane
CIA	Cumulative Impact Analysis
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CSP	Corrugated Steel Pipe
CTP	California Transportation Plan
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted decibels
DI	Drainage Inlet
DO	Dissolved Oxygen
DOT	Department of Transportation
DPPIA	Design Pollution Prevention Infiltration Area

Abbreviation	Description
DPS	Distinct Population Segment
eDNA	Environmental DNA
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA	Environmentally Sensitive Area
ESHA	Environmentally Sensitive Habitat Areas
ESL	Environmental Study Limits
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FHWG	Fisheries Hydroacoustic Working Group
FMP	Fishery Management Plan
FR	Federal Register
GHG	greenhouse gas
GRE	geosynthetic reinforced embankment
GWP	global warming potential
H ₂ S	hydrogen sulfide
HFC-23	Fluoroform
HFC-134a	s,s,s,2-tetrafluoroethane
HFC-152a	Difluoroethane
HVF	high-visibility fencing
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
IUCN	International Union for Conservation of Nature
LCFS	low carbon fuel standard
LEDPA	least environmentally damaging practicable alternative
Lmax	Maximum sound intensity during an invent
LSAA	Lake or Streambed Alteration Agreement
MAMU	Marbled murrelet
MBGR	Metal Beam Guardrail
MBTA	Migratory Bird Treaty Act
MCOG	Mendocino Council of Governments
MGS	Midwest Guardrail System
MLD	Most Likely Descendent
MMPA	Marine Mammals Protection Act
MMTC02e	million metric tons of carbon dioxide equivalent
MND	Mitigated Negative Declaration

Abbreviation	Description
MPH	miles per hour
MPO	Metropolitan Planning Organization
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MS4s	Municipal Separate Storm Sewer Systems
N ₂ O	nitrous oxide
NAHC	Native American Heritage Commission
NC	North Coast
ND	Negative Declaration
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRLF	Northern red-legged frog
NSO	Northern spotted owl
OHWM	Ordinary High Water Mark
PAMB	Point Arena Mountain Beaver
PCBR	Pacific Coast Bike Route
PCEs	primary constituent elements
PDT	Project Development Team
PM(s)	post mile(s)
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppt	parts per thousand
PRC	Public Resources Code
RMS	root mean square
ROW	right of way
RSP	rock slope protection
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCS	Sustainable Communities Strategy
SF ₆	sulfur hexafluoride
SEL	sound exposure level
SHS	State Highway System
SLR	Sea-level Rise
SNC	Sensitive Natural Community
SO ₂	sulfur dioxide
SPL	sound pressure levels
SR	State Route
SSC	Species of Special Concern
STRAIN	Structure Replacements and Improvement Needs Report

Abbreviation	Description
SWMP	Storm Water Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TEA	Transportation Enhancement Activities
TMDLs	Total Maximum Daily Loads
TMP	Transportation Management Plan
TWG	Tidewater goby
U.S. or US	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
VMT	Vehicle Miles Traveled
WDRs	Waste Discharge Requirements
WIFL	Little willow flycatcher
WQOs	Water Quality Objectives
WSP	Western snowy plover
YBCU	Yellow-billed cuckoo

Chapter 1. Proposed Project

1.1. Project History

The California Department of Transportation (Caltrans) proposes to widen the bridge structure and upgrade the bridge railing of the Pudding Creek Bridge (Bridge No. 10-0158) on State Route (SR) 1 at post mile (PM) 62.12 in Mendocino County. The existing structure spanning Pudding Creek was built in 1959 and seismically retrofitted in 1998.

Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

1.2. Project Description

The project proposes to widen the Pudding Creek Bridge symmetrically on both sides of the existing structure. The existing bridge is 41 feet wide, including two 12-foot-wide lanes, two 2-foot-wide shoulders, two 6-foot-wide sidewalks, and two "see-through" concrete barrier rails. The bridge would be widened from 41 feet to approximately 57 feet to accommodate two 12-foot-wide lanes, two 8-foot-wide shoulders, and two 6-foot-wide pedestrian walkways with pedestrian rails, and two upgraded vehicle barrier rails. The existing bridge length of approximately 321 feet would not change. Vehicle barrier rail would be upgraded to type ST-75 to meet current design standards. The rail type is "see-through" and galvanized and would be painted or stained. Pedestrian rails would be installed along both walkways at the edge of the bridge deck. New bridge lighting would be installed in the pedestrian rail. The lighting would be low to the ground and illuminate only the sidewalks and roadway. The roadway at the north and south approaches of the bridge would be widened to transition from the roadway to the widened structure. The roadway shoulders within the project limits would be widened to approximately 8 feet. Pavement delineation, such as striping and pavement markers, as well as signage, would be installed. The existing metal beam guardrail (MBGR) that transitions from the bridge would be replaced with a Midwest Guardrail System (MGS) with steel posts.

New 6-foot wide sidewalks would be constructed on both sides of the highway from Pudding Creek Bridge south to Elm Street and north to Pudding Creek Drive. To accommodate roadway widening and sidewalk installation, a 150-foot-long, 2 to 4-foot high retaining wall would be constructed southeast of the bridge between PMs 62.04 and 62.07. The retaining wall would be located at the back of curb along the sidewalk. Wall design aesthetic treatment would be determined in future project phases.

The proposed project would modify existing drainage systems. South of the bridge along the west side of the highway, the sidewalk curb and gutter would convey surface water as gutter flow. There is currently a low point at the northwest end of the bridge with no existing drainage facilities. To facilitate drainage, a drainage inlet (DI) would be placed at the low point (approximately PM 62.18) and a 1-foot-diameter corrugated steel pipe (CSP) would be installed through the abutment wingwall (which would outlet west of the bridge and eventually into Pudding Creek).

There are two existing culverts south of the bridge (located at PMs 62.03 and 62.08) that convey water north towards Pudding Creek and run parallel to the roadway along the east side. The project proposes to replace and relocate the DIs at PMs 62.03 and 62.08. Caltrans Hydraulics recommends replacing the CSP at PM 62.03 with a longer 2-foot-diameter CSP that runs parallel to the roadway between the DI at PM 62.03 and PM 62.08. The project also proposes replacing the CSP at PM 62.08 (southeast corner of MEN 1 and E. Manzanita) with a 2-foot-diameter CSP. The new DI would be connected to the DI at PM 62.08 to capture water before reaching the curb ramp/sidewalk; this may require relocation of an existing utility pole. To capture gutter flow, a new DI would be placed at the edge of shoulder at PM 62.12 on the southwest end of the bridge. A 1-foot-diameter CSP would convey water from the DI to the west of the bridge away from the abutment. The existing drainage scuppers on the bridge would be eliminated. Runoff would be directed off the bridge to permanent treatment BMPs, such as bioswales or a Design Pollution Prevention Infiltration Area (DPPIA) whose location, size, and type would be determined during the final design stage.

Most of the work would occur within the existing Caltrans right of way (ROW) and on SR 1; however, temporary construction easements would be required from six parcels and one fee parcel for stormwater treatment. To allow construction access, placement of work pads, abutment widening and roadway widening, clearing and grubbing of upland and riparian vegetation would be necessary, including small trees, to allow for the swing radius of the crane. Existing vegetation would be preserved as much as possible within the work zone. Vegetated areas beyond the construction zone would be marked on the project plans as environmentally sensitive areas (ESA) and designated with flagging or temporary high visibility fencing (THVF). All areas temporarily disturbed for access would be restored to pre-construction conditions by regrading the site and revegetating with native species upon completion of construction.

Abutment 1 on the south end and Abutment 9 on the north end would be widened approximately 14 feet to match the width of the new bridge and would have additional

wingwalls. New 26-foot-wide precast, prestressed bridge deck spans would be placed onto the widened abutments and existing pier caps. A 15-foot-wide by 40-foot-long temporary access road and a 20-foot-wide by 20-foot-long temporary work pad would be constructed in each quadrant of the bridge adjacent to the abutments. Temporary work pads would be used to stage equipment, depending on which side of the bridge work is occurring. Construction would be phased to conduct work on the east or west side of the structure and then shift work to the opposite side of the structure. These areas would be cleared of vegetation, graded, and temporarily layered with rock. Construction would require the use of a crane, a pile driving hammer, and a hoe ram mounted on an excavator. To prevent runoff of contaminants, the work pad would be enclosed with temporary water pollution control BMPs.

The area around the abutments would be excavated to the bottom of the existing footings. The maximum depth of excavation would be approximately 12 feet. The footing of Abutment 1 extends 6 to 8 feet below the ground surface and is supported by a spread footing. Widening at Abutment 1 would be above the OHWM. The contractor would excavate with a hoe ram and bucket attachment approximately 6 to 8 feet down to the bottom of the existing spread footing. This activity would also be performed at Abutment 9 to prepare for driving piles using a pile driver before pouring concrete for the abutment footings and constructing the portion of the widened abutment and new wingwalls. The hoe ram would be used for a minimum of 2 hours and a maximum of 8 hours for up to 4 days.

The footing of Abutment 9 extends 4 feet below ground surface and is supported by H-piles. H-piles would be used to widen Abutment 9, with four new piles installed at the two outside corners, for a total of 8 new piles. Pile driving would occur approximately 41 feet upslope from OHWM at Abutment 9. It is anticipated that the piles used would be approximately 10 to 14-inches wide and 60 feet long. Piles would be driven to a depth of approximately 55 feet by a diesel impact hammer stationed on the roadway approach fill prism. Piles would require an average of 20 to 30 blows per foot to install in subsurface soils. The blow count at the beginning of each pile driving operation is expected to be significantly lower near the surface because the sandy substrate at the abutments would allow the weight of the driving hammer on the pile to sink the pile by several more feet. As the operation progresses, the blow count per foot would increase as the pile is driven deeper into the soil until the calculated average blow count per foot is reached. It is assumed that under suitable conditions (weather, equipment) up to four piles can be driven per day.

Once pile driving is complete at one side of an abutment, the operation (hammer, work pad) would be transferred to another quadrant. The transfer of equipment would likely occur at night to minimize impact on the traveling public and could take up to one full 8-hour

nightshift. After H-piles are driven at Abutment 9 and Abutment 1 is excavated to the bottom of the existing footing elevations, concrete would be formed and poured to construct abutment footings and wingwalls. Structural concrete would be placed around the widened abutments and the area would be backfilled and graded. The abutment fill slopes at the northeast and northwest corners of Abutment 9 would be constructed using geosynthetic reinforced embankment (GRE) to minimize the footprint for the newly constructed fill slope and to keep the toe of the fill slope above OHWM. Rock slope protection (RSP) would be placed in front of both abutments to discourage illegal camping. No in-water work would be required.

Prior to the start of deck work, containment measures would be installed to prevent any bridge deck materials and construction debris from entering Pudding Creek. The containment system may consist of a platform, net, tarp, or a combination of these items placed under the bridge. Water and vacuum systems would be used to minimize concrete dust. All waste (e.g., concrete, steel, asphalt, etc.) generated during construction would be disposed of at an approved Caltrans disposal site or would become property of the Contractor. Scaffolding would be installed along the outside edge of the structure and attached to the side of the bent cap as fall protection for the workers. The containment measures and scaffolding would be on the bridge deck and would not be placed in the creek.

Bridge deck widening requires removal of the existing sidewalk, bridge rails, asphalt concrete, and other bridge deck components. A crane would place the 32 precast, prestressed girders (16 on each side of the structure) on the widened abutments and existing piers. The crane would be placed on the work pads adjacent to the abutments depending on where work is occurring. Existing joint seals would be replaced and extended. A polyester concrete overlay would be placed on the bridge deck.

Additional bridge work would include relocating a sewer line and installing hangers for the future relocation of a water line, both of which are owned by the City of Fort Bragg. The existing 12-inch force sewer main is located on the west side of the bridge and would be relocated approximately 9.5 feet west to accommodate the widened bridge. Temporary bypass equipment for the sewer main would be provided during relocation as necessary. Sleeve pipe hangers or slides and support hardware would be installed on the east side of the Pudding Creek Bridge to accommodate the future relocation of the existing waterline by the City of Fort Bragg. Typical design elements may include double-walled construction, pipe hangers or slides and support hardware, horizontal and vertical alignments and elbows for above-ground pipes, and buttresses at the start and end of the bridge crossing. Design of the waterline crossing location and construction documents shall be approved by Caltrans.

Anticipated traffic control is reversing traffic control with flagging, reversing traffic control with a temporary signal system, intermittent closure during temporary signal system installation and shoulder closure. The estimated maximum delay during reversing traffic control would be 15 minutes, and 20 minutes during intermittent closures. Bridge work would be completed in two construction seasons. Night work would be limited to up to five nights for operations such as large concrete pours.

Project Objective (Purpose and Need)

The purpose of the project is to bring the Pudding Creek Bridge up to current design standards by widening the existing structure and upgrading the bridge rails. The rails on the structure have been identified as deficient with concrete spalls and exposed and corroded rebar. The structure appears on the list of eligible bridges for rail upgrades and is identified in the Structure Replacements and Improvement Needs Report (STRAIN). The existing shoulder width for the structure is two feet, which does not provide adequate room for disabled vehicles or maneuvers by a vehicle to avoid a collision, adequate shoulder width to accommodate bicycle traffic, or a separated walkway to accommodate pedestrians.

General Plan Description, Zoning, and Surrounding Land Uses

Pudding Creek Bridge is within the city of Fort Bragg. The project would not change the existing land use or zoning designations in the project area.

State Route (SR) 1 is classified as an “arterial” roadway in the City of Fort Bragg Coastal General Plan’s Circulation Element. The Coastal General Plan Circulation Element discusses a need for “better pedestrian access across Fort Bragg’s bridges.” The following goals and policies are related to this project:

Goal C-9: Make it easier and safer for people to walk in Fort Bragg

- Policy C-9.2: Require Sidewalks. Require a sidewalk on both sides of all collector and arterial streets and on at least one side of local streets as a condition of approval for new development.
- Policy C-9.3 Where feasible, incorporate pedestrian facilities into the design and construction of all road improvements.

The Inland General Plan Circulation Element also discusses a need for “better pedestrian access across Fort Bragg’s bridges.” The following goals and policies are related to this project:

Goal C-11: Make it easier and safer for people to walk in Fort Bragg.

- Policy C-11.1 Continuous Sidewalks: Require an uninterrupted pedestrian network of sidewalks, with continuous sidewalks along both sides of streets. New development shall provide sidewalks along project frontages to close gaps in the City's sidewalk network.
- Program C-11.1.1: Consider implementing the following funding sources for the purpose of installing sidewalks in existing developed areas of the City:
 - a) special benefit assessment districts; and/or
 - b) a low-interest revolving loan fund.
- Program C-11.1.2: Work with the Mendocino Council of Governments and Caltrans to construct pedestrian walkways over the Hare Creek and Pudding Creek Bridges. These facilities may qualify for Transportation Enhancement Activities (TEA) funding available through Mendocino Council of Governments (MCOG).
- Policy C-11.2: Where feasible, incorporate pedestrian and bicycle facilities into the design and construction of all road improvements.

Pudding Creek Bridge ESL with BSA and Butterfly Survey Buffer

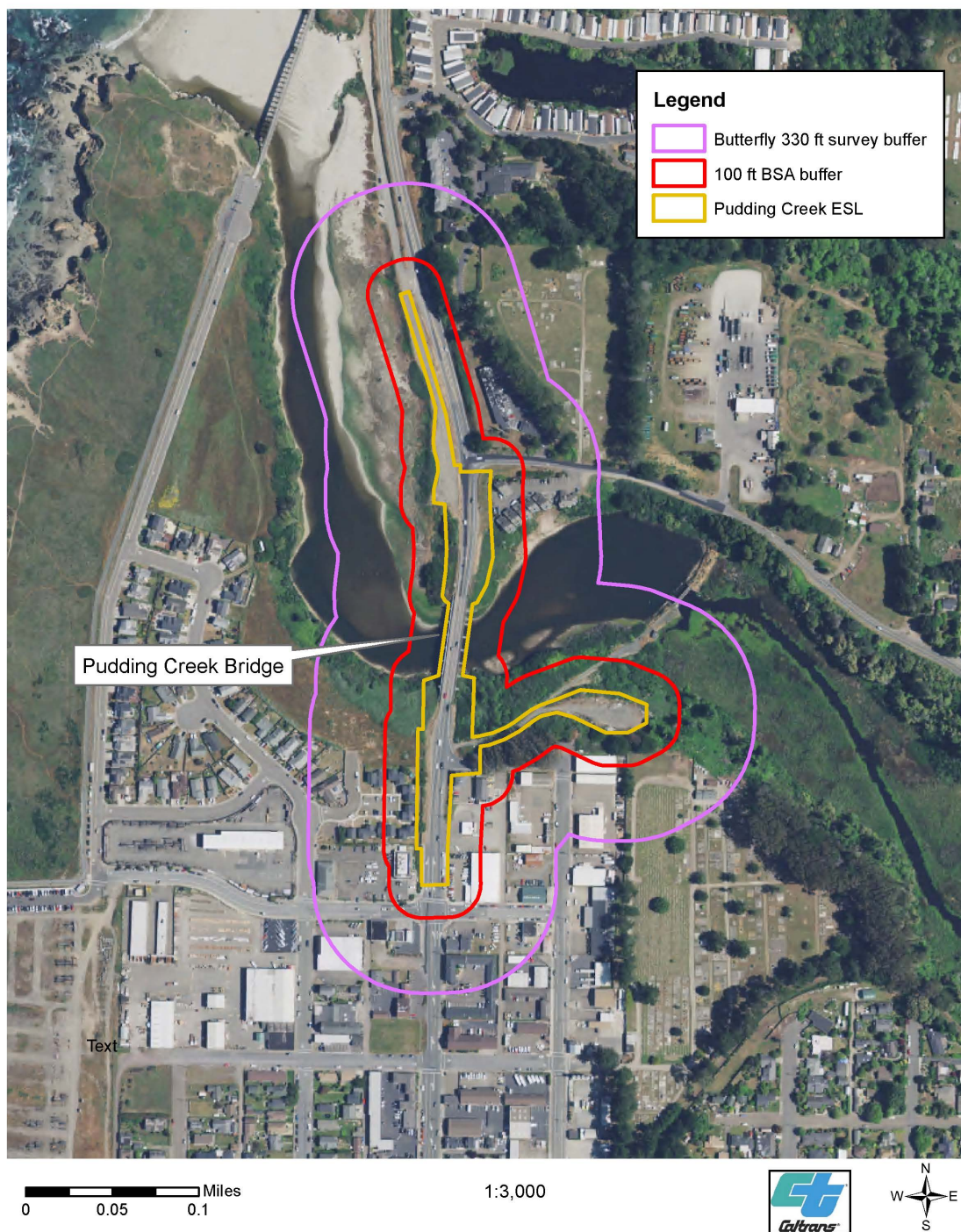


Figure 2. Environmental Study Limits with Biological Study Area and Butterfly Survey Buffer

1.4. Permits and Approvals Needed

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

Table 1. Agency Approvals

Agency	Permit/Approval	Status
North Coast Regional Water Quality Control Board	Report of Waste Discharge	The permit application will be submitted after final environmental document (FED) approval
U.S. Fish and Wildlife Service	Section 7 Consultation for tidewater goby	In process
National Marine Fisheries Service	Section 7 Consultation for coho salmon and steelhead trout	In process
California Coastal Commission	Consolidated Coastal Development Permit	The permit application will be submitted after FED approval

1.5. Standard Measures and Best Management Practices Included in All Alternatives

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 State Route 1 throughout the construction period.

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

Traffic and Transportation

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

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

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

Visual Aesthetics

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

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

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

Cultural Resources

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

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

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

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), which became effective July 1, 2013, and the Construction General Permit (Order 2009-0009-DWQ).

Before any ground-disturbing activities, the contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP) (per the Construction General Permit Order 2009-0009-DWQ) that

includes erosion control measures and construction waste containment measures so that waters of the State are protected during and after project construction.

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

Construction would likely require the following temporary construction site BMPs:

- Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) shall be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Water would be removed by means of dewatering the individual pipe piles or cofferdams.
- Water generated from the dewatering operations would be trucked off-site to an appropriate facility, or treated and used on-site for dust control and/or discharged to an infiltration basin, or used to irrigate agricultural lands.
- Fiber rolls or silt fences would be installed.
- Existing vegetated areas would be maintained to the maximum extent practicable.
- Clearing, grubbing, and excavation would be limited to specific locations, as delineated on the plans, to maximize the preservation of existing vegetation.
- Vegetation reestablishment or other stabilization measures would be implemented on disturbed soil areas, per the Erosion Control 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 *2003 Caltrans Storm Water Management Plan* to meet Water Quality Objectives (WQOs). This plan complies with the requirements of the Caltrans Statewide NPDES Permit (Order 2012-0011-DWQ).

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

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

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.

Geology and Seismic/Topography

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

GS-2: In the unlikely event that fossils were encountered during project excavations, Caltrans Standard Specification 14-7 would be followed. This standard specification states that if unanticipated paleontological resources were discovered at the job site, all work within 60 feet would stop, the area around the fossil would be protected, and the Resident Engineer would be notified.

Wetlands and Other Waters

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

Threatened and Endangered Species

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

TS-2: A qualified contractor-supplied biologist would monitor in-stream construction activities. The biological monitor would be present during bridge demolition, hoe-ramming, drilling for bridge foundations, and concrete pours to ensure adherence to all environmental permit conditions.

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

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

TS-6: Hydroacoustic monitoring would be conducted during any construction activities that could potentially produce impulsive sounds waves. Hoe-ramming or jackhammering associated with bridge demolition may be included. Hydroacoustic monitoring must comply with the terms and conditions of Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) consultations.

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

Plant Species

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

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

Animal Species

AS-1: To protect migratory and nongame birds, their occupied nests and eggs, nesting-prevention measures would be implemented. Vegetation removal would be restricted to the period outside of the bird breeding season (September 16 through January 31) or, if vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist no more than 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. 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.

AS-2: Partially constructed and unoccupied nests within the construction area would be removed and disposed of on a regular basis throughout the breeding season (February 1 to September 15) to prevent their occupation. Nest removal would be repeated weekly under guidance of a qualified biologist to ensure nests are inactive prior to removal.

AS-3: Pre-construction surveys for active raptor nests within one-fourth mile of the project area would be conducted by a qualified contractor-supplied biologist within 15 days prior to the initiation of construction activities. Areas to be surveyed would be limited to those areas subject to increased disturbance because of construction activities (i.e., areas where existing traffic or human activity is greater than or equal to construction-related disturbance need not be surveyed). If any active raptor nests were identified, appropriate conservation measures (as determined by a qualified biologist) would be implemented. These measures may include, but are not limited to, establishing a construction-free buffer zone around the active

nest site, biological monitoring of the active nest site, and delaying construction activities near the active nest site until the young have fledged.

AS-4: Prior to any work within the banks of Pudding Creek within the BSA, the contractor would be required to provide to Caltrans for approval an Aquatic Species Relocation Plan. The plan would also include provisions for a pre-construction survey by a qualified biologist for Northern red-legged frog. Any frogs, tadpoles, and egg masses found during the initial survey would be netted by the biologist and relocated to suitable habitat downstream of the project area prior to conducting project activities within the banks of Pudding Creek within the BSA. The biologist would be present during all phases of in-stream construction to assist with frog relocation efforts as they arise.

Invasive Species

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

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

1.6. 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 (NEPA). When needed for clarity, or as required by CEQA, this document may contain references to federal laws and/or regulations (CEQA, for example, requires consideration of adverse effects on species identified as a candidate, sensitive, or special-status species by the United States 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 checklist on the following pages for additional information.

Potential Impact Area	Impacted: Yes / No
Aesthetics	Yes
Agriculture and Forestry	No
Air Quality	No
Biological Resources	Yes
Cultural Resources	No
Energy	No
Geology/Soils	No
Greenhouse Gas Emissions	Yes
Hazards and Hazardous Materials	No
Hydrology/Water Quality	No
Land Use/Planning	No
Mineral Resources	No
Noise	Yes
Population/Housing	No
Public Services	No
Recreation	No
Transportation/Traffic	No
Tribal Cultural Resources	No
Utilities/Service Systems	No
Wildfire	No
Mandatory Findings of Significance	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 checklist and this document are only related to potential impacts pursuant to CEQA. The questions in the CEQA Checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project as well as standard measures that are applied to all or most Caltrans projects (such as Best Management Practices [BMPs] and measures included in the Standard Plans and Specifications or as Standard Special Provisions) are considered to be an integral part of the project and have been considered prior to any significance determinations documented in the checklist or document.

Project Impact Analysis Under CEQA for Initial Study

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

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

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

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

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

Although the formulation of mitigation measures shall not be deferred until some future time, the specific details of a mitigation measure may be developed after project approval when it is impractical or infeasible to include those details during the project’s environmental review. The lead agency must (1) commit itself to the mitigation, (2) adopt specific performance standards the mitigation 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 process may be identified as mitigation if compliance would result in implementation of measures that would be reasonably expected, based on substantial evidence in the record, to reduce the significant impact to the specified performance standards (14 CCR §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 (CAL. PUB. RES. CODE § 21065.3). They are to focus on *significant* impacts (14 CCR § 15126.2(a)). Impacts that are less than significant need only be briefly described (14 CCR § 15128). All potentially significant effects must be addressed.

2.1. Aesthetics

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Have a substantial adverse effect on a scenic vista?				✓
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?			✓	

“No Impact” determinations made for questions a) and b) in this section are based on the scope, description, and location of the proposed project, as well as the Visual Impact Assessment dated March 26, 2020. See below for further discussion of the “Less Than Significant Impact” determinations made for questions c) and d).

Regulatory Setting

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

Environmental Setting

State Route (SR) 1 traverses much of California's coast, following nearly the full length of the Mendocino County coastline and within the Coastal Zone. State Route 1 is eligible for designation as a State Scenic Highway. The entire SR 1 corridor within the county is considered sensitive regarding visual and scenic resources and is known for enduring views of coastal bluffs and the Pacific Ocean. Under the Scenic Highways Element of the County's General Plan, many visual elements within view of the project are considered scenic resources within the county, including inland hills, valleys and ridges, river views, seascape, small rural communities, urban fringe, historical sites, and natural wildlife and wildlife habitats.

Local communities along the county's coastline have a strong and vibrant artisan culture. As a result, much of the retail along the coast can be described as cottage industry and/or tourist serving. State Route 1 is a popular choice for tourists using both motorized and non-motorized means of travel and is legislatively designated as part of the Pacific Coast Bike Route (PCBR). The PCBR is internationally known and is traveled extensively in the summer months by cyclists from multiple countries. The California Coastal Trail (CCT) follows sections of SR 1 within the county. The CCT runs west and is in the viewshed of Pudding Creek Bridge on Old Haul Road. State Route 1 is considered a Main Street for many of the communities and is the only north-south travel corridor on the coast.

Pudding Creek Bridge is at the northern end of the city of Fort Bragg at PM 62.12. The bridge crosses Pudding Creek. State Route 1 within the project limits is a rural-urban two-lane conventional highway and is functionally classified as a Minor Arterial. The posted speed limit south of the bridge is 35 miles per hour (MPH), and on the bridge going northerly is 45 MPH. The bridge crosses land that is classified as open space with adjacent water recharge areas. Open space in Fort Bragg provides coastal access, recreation uses, scenic and aesthetic resources, and habitat preservation according to City guidelines. The area is densely vegetated with riparian mixed-shrub land cover. Riparian forest can be seen further east in the creek corridor, as well as Pudding Creek Dam, which is located in the midground. The creek is the northeastern boundary of Fort Bragg and can be viewed from the bridge to the east and west. Glass Beach, Pudding Creek Beach, and MacKerricher State Park are found west of the highway and near the project corridor. The Pudding Creek Recreational Area parking area can be found just north of the bridge to access the creek and beach front. High- and low-density housing can be seen on the bluffs in the midground west of the bridge, and hospitality services in the foreground to the east.

The project corridor south of the project area is linear and travels through small city urbanization. State Route 1 is characterized as coastland with intermittent views of the Pacific Ocean between commercial, highway visitor commercial, industrial and residential properties, as determined by the Fort Bragg Coastal and City Land Use Zoning Codes. The central business district is approximately 0.5 mile south of the bridge. There is minimal landscaping along the roadway frontage. North of the project site, SR 1 travels through open and winding coastland, with frequent beach and ocean views. Vegetative cover includes low growing grassland. Rural low-density housing and commercial businesses are spread out along the corridor. The viewshed along SR 1 in the Fort Bragg area changes at Pudding Creek Bridge due to the different landscape and land-use types south and north of the project site—from an urban setting to rural coastline. The Pacific Ocean, coastal bluffs, beachline and a wooden trestle bridge can be seen from the project site to the west.

There is a high volume of vehicles, bicycles, and pedestrians that use Pudding Creek Bridge due to its proximity to the center of Fort Bragg. The project site is just south of MacKerricher State Park, which is a unique dune system and is inhabited by a variety of wildlife. Wildlife is an important visual resource to the area and attracts nature watchers and recreationists. A wooden trestle bridge, part of Old Haul Road, crosses Pudding Creek west of the bridge. The Old Haul Road is a Class I designated bike trail dedicated to non-motorized transportation connecting Fort Bragg to MacKerricher State Park and is highly visible from the project location. The wooden trestle bridge is a visual and historical resource to the area.

Discussion of Environmental Evaluation Question 2.3.—Aesthetics

c) Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings?

Visual resources of the project setting are defined and identified below by assessing *visual character* and *visual quality* in the project corridor. *Resource change* is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after construction of the proposed project.

The visual character of the project site would be altered by the proposed project. While the changes to visual character would remain somewhat compatible with the existing visual character of the corridor, the highway would increase in prominence as a result of the project; therefore, would be considered a *negatively very low* change to character. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator. Visual character

attributes can include form, line, color, texture, dominance, scale, and continuity. These attributes are used to describe, not evaluate, the visual character and are not considered good or bad.

Bridge upgrades would result in wider shoulders, separated pedestrian walkways, new bridge rail, pedestrian railing, bridge lighting, and new guardrail. Wider shoulders and separate pedestrian walkways would increase the scale of the bridge and dominance in the landscape when compared to existing conditions, which are narrow and without a barrier between the traveled way and walkway. Because the bridge is at the northern entrance to the city of Fort Bragg's business corridor, the increased visual prominence of the bridge within the landscape is still continuous within the project corridor.

The proposed bridge vehicle barrier rail is galvanized and "see-through," whereas the existing barrier rail is concrete and "see-through." The change in materials leads to new textures and colors. There are fewer vertical elements and wider openings on the proposed rail, but more horizontal lines. Additionally, each side of the bridge would have a pedestrian rail, which would be a new visual element in the landscape and would increase vertical lines. The bridge rails and pedestrian rails are currently proposed to be a burgundy-brown color, which would be visually harmonious with the nearby wooden trestle bridge. With the bridge rail upgrades and pedestrian rail addition, the new railing would be more dominant in the landscape than the existing rail; however, due to the high see-through and aesthetic quality of both rails, it is anticipated the visual character of the bridge would be enhanced. Guardrail at the ends of the bridge would be upgraded. The new guardrail would be taller by two inches. As there is existing guardrail now and the overall length is short, guardrail upgrades would be compatible with existing conditions.

Bridge lighting recessed into the pedestrian rail is anticipated to enhance visual character of the bridge at night. Lighting would be predominantly visible to viewers on the bridge and would light up the pedestrian walkway as well as highlight the decorative pedestrian rail. Neighbors who have views of the bridge would see a string of low-set lights illuminating the bridge. As there are other lights in the vicinity from residences, adjacent hotels, and businesses, it is not anticipated the new bridge lights would be incompatible with the existing visual character of the surrounding environment.

The project proposes to include sidewalks north and south of the bridge, connecting the bridge walkways to adjacent intersections. This would result in a more continuous visual character of hardscape elements within the project corridor. A 150-foot long, 2 to 4-foot high wall would be required southeast of the bridge between East Manzanita Street and the

driveway before the intersection of SR 1 and East Elm Street to accommodate new sidewalks. Both of these hardscape elements would increase the number of lines and forms within the project corridor, and introduce new textures and potentially colors, depending on the aesthetic treatment determined for the wall. A similar wall is located on the southern end of the City of Fort Bragg, at the SR 20/SR 1 intersection.

Due to bridge widening, a steep fill embankment would be required northwest of the bridge. The existing slope is steep and vegetated, primarily characterized by grasses and low growing shrubs. The proposed fill slope would be approximately the same steepness, but vegetation would be removed, resulting in fewer vegetative forms. Vegetation would also be removed around the bridge abutments due to bridge widening and construction access. This would lead to a change in continuity of the site until re-vegetation matures.

The visual quality of the project site would be somewhat altered by the proposed project but would ultimately *not change* the overall level of quality. Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project before and after the project implementation and measuring average change.

Vividness is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements. The current bridge and project corridor have a *moderately high* level of vividness due to the location of the bridge in relation to the City of Fort Bragg, as well as views of Pudding Creek, beachline, and the wooden trestle bridge. Bridge widening and upgrades would increase the vividness of the bridge as there would be more unique and diverse elements introduced into the landscape, including bridge rails, pedestrian rails, and bridge lighting. The distance between highway travelers and the visual resources would change due to shoulder widening. Foreground views to the east and west for vehicles and bicyclists would be limited due to the walkway and shoulder expansion, but overall coastal and creek views would still be present. Pedestrian views would not change. Something to note is that the addition of having a vehicle barrier between the walkway and traveled way promotes more pedestrian use and may subsequently lead to pedestrians spending more time on, and looking at views from, the bridge. Overall the vividness of the Pudding Creek Bridge project location would be increased from *moderately-high* to *high*.

Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions. The current bridge and project corridor have *moderately-high* levels of intactness. The corridor is characterized by a rural-urban landscape. There are currently no non-typical visually intrusive features in the

viewshed. The wall would decrease the level of intactness, however it is short, and the City has a similar type of wall at the intersection of SR 1/SR 20, so it would not be uncharacteristic of the area. Bridge lighting would be a new visual element. Proposed lighting would be set into the pedestrian rail, shining inwards to illuminate the pedestrian walkway. There is adjacent lighting that can be seen from the bridge due to the proximity of the business district, as well as lighting from nearby residences and hotels. Subsequently, it is not anticipated that bridge lighting would result in a non-typical visual intrusion within the landscape. Overall, the intactness of the Pudding Creek Bridge project location would be decreased from moderately-high to *moderate to moderately-high*.

Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern. The current bridge and project corridor have a *high* level of unity. The roadway is narrow with open coastal, creek, and grassland views, with some urban development. The proposed project would lead to an increase in visual connectivity due to bridge upgrades and sidewalk connection. Unity will somewhat decrease due to vegetation removal until re-vegetation matures. Overall, the unity of the Pudding Creek Bridge project location would be decreased from high to *moderately-high*.

Though vividness, intactness and unity would be altered, the overall visual quality would *not change* as the change of each measure balances out. Visual Character would have a *negatively very low* change. The visual changes that would be caused by the project would be somewhat compatible with the corridor, however as the project would result in a more dominant presence of the highway and structure in a scenic area, the changes in visual character would be considered negative. Subsequently, resource change (changes to visual resources as measured by changes in visual character and visual quality) for the Pudding Creek Bridge project location would be *negatively very low*.

It is anticipated that the overall project would not result in a high negative change to visual quality. The average change in visual quality is a *very low positive* change. Scenic views would be maintained, and bridge upgrades would ultimately enhance the visual quality of the bridge due to more architecturally interesting and context-appropriate railings and additional separated pedestrian walkways. It is anticipated that the project would not result in a high negative change to visual character. The average change in visual character is *negatively very low*. This is primarily due to the increased presence of the highway and structure within the surrounding environment, as well as vegetation removal that would lead to non-typical changes at the project site. Overall, the character of the proposed project would be somewhat compatible with the character of the existing corridor, but changes are anticipated to be seen

collectively as a low decrease in rural character. Subsequently, the average resource change of the Pudding Creek Bridge project location is *negatively very low*.

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

New bridge lighting would be installed in the pedestrian rail at the Pudding Creek location. Proposed lighting would be set into the pedestrian rail, shining inwards on the pedestrian walkway. Bridge lighting recessed into the pedestrian rail is anticipated to enhance visual character of the bridge at night. There is adjacent lighting from the City of Fort Bragg south, as well as lighting from businesses southeast of the bridge. Based on the proposed type and position of the lights within the pedestrian railing, and the position of viewers in relationship to the bridge, the resource change of the bridge would be enhanced and not degrade existing views. Subsequently, it is not anticipated that bridge lighting would result in a non-typical visual intrusion within the landscape.

Mitigation Measures

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

2.2. Agriculture and Forest Resources

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

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
Would the project: b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
Would the project: c) Conflict with existing zoning, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				✓

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
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 and forest resources, including timberland, within or adjacent to the project area.

2.3. Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
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 Traffic Noise, Air Quality, Energy and Greenhouse Gas memo dated December 13, 2019. Potential impacts to air quality are not anticipated because the proposed project would not result in changes to the traffic volume, fleet mix, speed, location of existing facility or any other factor that would cause an increase in emissions. Therefore, the project would not produce substantial operational air quality impacts.

2.4. Biological Resources

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

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

“No Impact” determinations made for questions d), e), and f) in this section are based on the scope, description, and location of the proposed project, as well as the Natural Environment Study dated April 30, 2020. See below for further discussion of the “Less Than Significant Impact” determinations made for questions a), b), and c).

Regulatory Setting

Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. The emphasis of the section should be on the ecological function of the natural communities within the area.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species Section. Wetlands and other waters are also discussed in the section below.

Wetlands and Other Waters

Federal

Waters of the United States (including wetlands) are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce.

The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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

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

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

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

State

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs), and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission may also be involved.

Sections 1600–1607 of the California Fish and Game Code (CFGC) require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

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

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. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section in this document for detailed information regarding these species.

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

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

Animal Species

Many state and federal laws regulate impacts to wildlife. The USFWS, National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries Service [NMFS]), and CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Acts. Species listed or proposed for listing as threatened or endangered are discussed in the following section. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NMFS candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

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

Threatened and Endangered Species

The primary federal law protecting threatened and endangered species is FESA: 16 United States Code (USC) Section 1531, et seq. See also 50 CFR Part 402. This act, and later amendments, provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as Federal Highway Administration (FHWA) (and Caltrans, as assigned), are required to consult with the USFWS and NMFS to ensure they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence, and/or documentation of a no effect finding. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

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

Incidental Take Permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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

Environmental Setting

To comply with the provisions of various state and federal environmental statutes and executive orders, potential impacts to natural resources in the project area were investigated and documented. Field reviews were conducted to identify existing habitat types and natural communities, waters and wetlands, rare species and/or factors indicating the potential for rare species (i.e., presence of suitable habitat).

A Natural Environment Study (NES) was prepared to summarize the studies conducted for the project. Caltrans coordinated with agency personnel from CDFW, USFWS, NMFS, and USACE.

The ESL shown on project plans (Figure 2) includes the area where work is anticipated to occur. Ground disturbance is anticipated within the footprint of the ESL from construction, equipment staging, and access. The Biological Study Area (BSA) encompasses two main buffers around the project's construction limits, including: (1) a 100-foot buffer around the ESL (including staging areas) to evaluate the potential presence of Environmentally Sensitive Habitat Areas (ESHAs) for the Coastal Development Permit (CDP); and (2) a 330-foot buffer around the ESL to evaluate potential impacts to endangered butterflies (Figure 2).

Natural Communities

All upland vegetation types within the Pudding Creek Bridge BSA are demonstrably secure (G5 S5) or apparently secure (G4 S4) globally and statewide. The only Sensitive Natural Community (SNC) present is the Pacific silverweed marsh (G4 S2), a type of estuarine

wetland (E2EM1) with a sandy substrate that is regularly flooded with the tide. In this herbaceous alliance, Pacific silverweed is at least 60% of the relative cover in the herbaceous canopy and can co-occur with bulrush. The herb layer is less than 3 feet tall. Pacific silverweed grows as a mat with runners (stolons) up to 2.5 feet long. This alliance is found in salty and brackish marshes of intermediate salinity. It occurs on both the north and south banks of Pudding Creek immediately below the OHWM. Approximately 0.084 acre occurs within the ESL, and 0.452 acre occurs within the BSA. This community is associated with jurisdictional waters afforded protection under federal and state law. It is part of a broader habitat that constitutes essential fish habitat for Pacific salmon, namely coho, and critical habitat for tidewater goby and salmonids, such as coho salmon and steelhead. This habitat also contributes food resources for a variety of species and serves flood protection and water quality functions.

Wetlands and Other Waters

Two wetlands have been documented within the project BSA. These wetlands have all three wetland parameters and are protected under CCC and USACE jurisdiction. They are associated with the Pacific silverweed marsh (*Argentina egedii* [*Potentilla anserina* ssp. *pacifica*]) Herbaceous Alliance and are considered a SNC and an ESHA. These wetlands, classified as E2EM1 (Estuarine, Intertidal, Emergent, Persistent), are within the OHWM of Pudding Creek. Within the ESL, PC-EW1 (north) is approximately 0.053 acre, and PC-EW2 (south) is approximately 0.031 acre, with a combined total of 0.084 acre. Within the BSA, PC-EW1 (north) is approximately 0.370 acre, and PC-EW2 (south) is approximately 0.082 acre, with a combined total of 0.452 acre.

The landscape within the BSA is highly modified due to the construction of roads and a relatively high level of recreational use within the creek near the bridge. However, the existing conditions would be considered new normal circumstances and all three wetland parameters were met.

There are also multiple patches of riparian habitat within the ESL and BSA, encompassing a total of approximately 0.264 acre in the ESL and 2.068 acres in the BSA, respectively. All are considered ESHAs by the California Coastal Commission.

Arroyo willow-dominated riparian habitat exists within the ESL and BSA as follows:

- On the south bank of Pudding Creek 0.006 acre is within the ESL and 0.084-acre is within the BSA.

- On the east side of SR1 upstream of the bridge near the gravel access road (70 feet north of Manzanita Road and south bank of Pudding Creek Bridge) only 0.258-acre is within the ESL and 1.125-acres within the BSA.
- Other disjunct patches totaling 0.245 acre are present in the BSA surrounding the southeast staging area (0.614 acre) and west of the northwest staging area; however, patches are not present within the ESL.

Plant Species

Botanical survey results, which document the results of seasonally-appropriate floristic surveys carried out for the proposed project, are provided in Appendix D. Although the CNPS inventory indicates several rare plants occur in the project region, none were detected in the project BSA. Discussion of Humboldt County milk-vetch, Howell's spineflower, Menzies' wallflower, Roderick's fritillary, Burke's goldfields, Contra Costa goldfields, Showy Indian clover, and Monterey clover is also provided indicating their FESA and/or CESA listing status and relative sensitivity.

Discussion of Humboldt County Milk-Vetch

Humboldt County milk-vetch (*Astragalus agnicidus*) is a state endangered, coarse, leafy perennial herb that blooms in the summer to early fall. The geographical distribution of this species in California includes the outer North Coast ranges in Mendocino and Humboldt counties (Hickman 1996). It ranges in elevation from 635 to over 2,624 feet (180 to 800 meters). This species is found in disturbed areas, such as along logging roads in broad-leaved upland forest and North Coast coniferous forest, and open soil in woodland (Baldwin 2012). It is documented in several locations in Mendocino County, most of which are along mountain ridges between 1 and 20 miles from the coast.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Humboldt County milk-vetch and other regionally-occurring special status plants. The nearest CNDDDB detection record is approximately 7.9 miles northeast of Pudding Creek Bridge on a ridge situated between Campbell Creek and Smith Creek. The project BSA does not contain suitable habitat for Humboldt County milk-vetch. This species was not observed during floristic surveys.

Discussion of Howell's Spineflower

Howell's spineflower (*Chorizanthe howellii*) is a federally endangered and state threatened terrestrial plant in the buckwheat family. This species is endemic to California, with a range

extending from Fort Bragg north to Ten Mile River in Mendocino County. Howell's spineflower usually flowers May through June, with heads of tiny flowers ranging up to 0.2 inch (0.5 cm) long. Seed dispersal is facilitated by the floral spines, which attach to passing animals. Howell's spineflower is found primarily in coastal dune habitat, preferring vegetation gaps or sparsely vegetated areas free of other competing species, such as European beachgrass. It may also grow in early successional, disturbed areas of coastal prairie associated with coastal bluffs.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Howell's spineflower and other regionally-occurring special status plants. The nearest CNDDDB detection record is approximately 0.15 mile west of Pudding Creek Bridge at Glass Beach Headlands. The project BSA at Pudding Creek Bridge contains marginal dune habitat for Howell's spineflower. This species was not observed during floristic surveys.

Discussion of Menzie's Wallflower

Menzie's wallflower (*Erysimum menziesii* ssp. *menziesii*) is a federally and state endangered terrestrial plant in the mustard family. This species is endemic to California, with a disjunct range with two populations—one on the Monterey Peninsula and one in Mendocino County, from Fort Bragg north to Ten Mile River. Menzie's wallflower usually flowers March through April, with heads of tiny flowers ranging up to 0.2 inch (0.5 cm) long. Its life history is semelparous perennial, meaning that it flowers and produces fruit only once during its life, then dies. Seed dispersal is facilitated by winter storm events that dislodge mature inflorescences and scatter them via wind. Seedling survivorship is very low, with a 98% mortality rate in the first year (Pickart and Sawyer 1998). Menzie's wallflower is found primarily in coastal dune mat habitat. It may also grow in early successional, disturbed areas of coastal prairie associated with coastal bluffs.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Menzie's wallflower and other regionally-occurring special status plants. The nearest CNDDDB detection record is adjacent to the northwest part of the BSA at Pudding Creek Bridge. The project study area contains marginal dune habitat for Menzies' wallflower. This species was not observed during floristic surveys.

Discussion of Roderick's Fritillary

Roderick's fritillary (*Fritillaria roderickii*) is a state endangered terrestrial plant in the lily family. This species is endemic to California, with a range extending from Napa County

north to Mendocino County, and plants are introduced in Mendocino and Sonoma counties. Roderick's fritillary is perennial and usually flowers March through May. The nodding flower extends in a stalk up to 4 inches (10 cm) high from a basal rosette. The flower is 0.7 to 1.6 inches (1.8 to 4 cm) tall, with narrowly oval-shaped, dark brown, greenish purple or yellowish green outer parts of the flower (i.e., perianth) (Hickman 1996). Roderick's fritillary grows best on well-drained clay, clay-loam, and serpentine soils in cismontane woodland and grasslands below 2,050 feet (625 m) elevation with clay parent material.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Roderick's fritillary and other regionally-occurring special status plants. The nearest CNDDDB detection record is approximately 34 miles southeast of the Pudding Creek Bridge project study area in the Philo quadrangle. The project site contains marginal dune habitat for Roderick's fritillary to the west and northwest of the proposed staging area at Pudding Creek. This species was not observed during floristic surveys.

Discussion of Burke's Goldfields

Burke's goldfields (*Lasthenia burkei*) is a federally and state endangered terrestrial plant in the aster family. This species is endemic to California occurring within Napa, Lake, Sonoma, and Mendocino counties. Burke's goldfields usually flowers April through June. Both the inner and outer flowers are yellow, and the fruit of this species is club-shaped and consists of one long bristle and several short bristles on the top. Burke's goldfields is found primarily in vernal pool and wet meadow habitat from 0 to 1,650 feet (0 to 503 meters) elevation. Threats to populations of vernal pool plants are primarily due to habitat fragmentation as a result of differences in climate, substrate, and topography, urbanization and the conversion of land for agriculture. Burke's goldfields is threatened by increased runoff, frequent disking of land, broken vernal pool hardpan, and activities that allow competing plant species to become established.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Burke's goldfields and other regionally-occurring special status plants. The nearest CNDDDB detection record is approximately 48 miles southeast of the project study area at the southern edge of Lake Mendocino in Ukiah. The project BSA does not contain habitat for

Burke's goldfields. This species was not observed within the project study area during floristic surveys.

Discussion of Contra Costa Goldfields

Contra Costa goldfields (*Lasthenia conjugens*) is a federally endangered terrestrial plant in the aster family. This species is endemic to California, occurring within many California central coast counties, including Mendocino County. Contra Costa goldfields usually flowers March through June. The yellow outer flowers are tipped white and the central flowers are yellow. This species grows to approximately 4 to 12 inches (10 to 40 cm) in height. Contra Costa goldfields is found primarily in wet (mesic) vernal pool and meadow habitat, but also mesic woodlands, alkaline playas, and valley and foothill grasslands. This species ranges from 0 to 1,550 feet (0 to 472 meters) in elevation. Threats to populations of vernal pool plants are primarily due to habitat fragmentation as a result of differences in climate, substrate, and topography, urbanization and the conversion of land for agriculture. Contra Costa goldfields is threatened by increased runoff, frequent disking of land, broken vernal pool hardpan, and activities that allow competing plant species to become established.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Contra Costa goldfields and other regionally-occurring special status plants. The nearest CNDDDB detection record is approximately 45 miles south of the project study area near Point Arena. The project BSA does not contain habitat for Contra Costa goldfields. This species was not observed during floristic surveys.

Discussion of Showy Indian Clover

Showy Indian clover (*Trifolium amoenum*) is a federally endangered terrestrial plant in the pea family. This species is endemic to California and has a historical range from Mendocino County south to Sonoma, Marin, Alameda and Santa Clara counties, and east to Napa and Solano counties. It was considered extinct until encountered in Sonoma and Marin counties in the 1990s. Showy Indian clover is an annual herb that usually flowers April through June. Flowers, which are purple with white tips, grow in dense round heads. Showy Indian clover is found primarily in coastal bluff scrub and valley and foothill grasslands, sometimes on serpentinite soil. Threats to populations of Showy Indian clover are mainly due to habitat fragmentation as a result of urbanization and the conversion of land for agriculture.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Showy Indian clover and other regionally-occurring special status plants. The nearest CNDDDB detection record is in northwest Sonoma County, approximately 85 miles

southeast of Pudding Creek Bridge. The project BSA does not contain suitable habitat for Showy Indian clover. This species was not observed during floristic surveys.

Discussion of Monterey Clover

Monterey clover (*Trifolium trichocalyx*) is a federally and state endangered terrestrial plant in the pea family. This species is endemic to California with a disjunct range with two populations—the main one on the Monterey Peninsula and a few scattered recent detections in central and southern Mendocino County. Monterey clover is an annual herb that usually flowers April through June. It has numerous flowers clustered into heads that are suspended by a whorl of specialized leaves. Monterey clover is found primarily in closed-cone pine woodland habitat from 0 to 350 feet (107 meters) in elevation. This species is considered an early successional stage species (Doak et al. 2000). Threats to populations of Monterey clover are mainly due to habitat fragmentation as a result of urbanization and the conversion of land for agriculture.

Seasonally-appropriate floristic surveys were completed within the project area in 2014 and 2019 for Monterey clover and other regionally occurring special status plants. The nearest CNDDDB detection record is approximately 13 miles southeast of Pudding Creek Bridge. The project BSA does not contain suitable habitat for Monterey clover. This species was not observed during floristic surveys.

Animal and Threatened/Endangered Species

Discussion of California Red-legged Frog and Northern Red-legged Frog

The California red-legged frog (*Rana draytonii*) (CRLF) is a federally threatened species, listed on May 23, 1996, under the Federal Endangered Species Act. Revised critical habitat for this species was most recently designated in March of 2010 (75 FR 12816). The range of CRLF extends from near Greenwood Creek in Mendocino County southward along the coast and inland from the vicinity of Shasta County south to northwestern Baja California, Mexico (Fellers 2005).

The Northern red-legged frog (NRLF) (*Rana aurora*) is a state species of special concern (SSC). The current population trend for NRLF is slightly decreasing (IUCN 2019). This species occurs along the California Coast Ranges from Del Norte County south to Mendocino County, usually below 3,936 feet (1,200 meters).

These two species utilize similar foraging, breeding and dispersal habitat. CRLF breeds in lowland and foothill streams or water associated with emergent wetlands or overhanging willows, including livestock ponds (Jennings and Hayes, 1994; Fellers 2005). Aquatic breeding habitat includes permanent water sources such as streams, marshes, and natural and manmade ponds in valley bottoms and foothills (Jennings and Hayes, 1994; Bulger et al., 2003). Non-breeding aquatic habitat consists of shallow freshwater features, such as seasonal streams, small seeps, springs, and ponds.

California red-legged frog may also be found in upland habitats (e.g., annual grasslands or oak woodlands adjacent to aquatic habitat) near or between breeding areas and nonbreeding refugia and along intermittent drainages connecting wetlands, seeps and springs (Bulger et al., 2003). Adults may take refuge during dry periods in rodent burrows, under leaf litter and downed logs, in desiccation cracks, and under rip/rap in upland habitat.

Northern red-legged frog habitat includes humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. They are typically found in or near water but can be wide-ranging and highly terrestrial in damp woods and meadows during the non-breeding season. They require permanent water sources such as ponds and lakes for breeding, which occurs from late November through March. Egg masses are usually attached to herbaceous vegetation in areas with little or no flow (California Herps 2019).

No species-specific surveys were conducted for CRLF or NRLF. The project is over 35 miles north of Greenwood Creek, the farthest northern extent of the known range for CRLF. NRLF has not been observed within the BSA at Pudding Creek. The nearest CNDDB occurrence of NRLF from Pudding Creek Bridge is approximately 1,000 feet north of the BSA and 100 feet east of SR 1. No breeding pond habitat for NRLF has been observed within the BSA; however, the creek corridor may provide suitable foraging and dispersal

Discussion of Migratory Birds

The Migratory Bird Treaty Act of 1918 (16 USC 703-712) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered “take” and unlawful. Take is defined as any attempt to pursue, capture, or possess any migratory bird, (and) any part, nest, or eggs of any such bird.

No species-specific surveys were conducted for migratory birds, but suitable nesting habitat for various migratory bird species is present on the Pudding Creek Bridge and within the surrounding area. No active or remnant bird nests were observed on the bridge structure.

A diverse group of bird species is present and likely nest within adjacent vegetation such as arroyo willow shrubs, blackberry brambles, and more open ruderal or grassland habitat at Pudding Creek Bridge. Insectivores, such as song sparrow, may nest in riparian shrubs along the creek banks.

Discussion of Marbled Murrelet

Marbled murrelet (MAMU) (*Brachyramphus marmoratus*) is a federally threatened (57 FR 45328) and state endangered species with over 3.6 million acres of critical habitat designated in the combined states of Washington, Oregon, and California (76 FR 61599). The MAMU is a small seabird that breeds along the Pacific coast of North America from the Aleutian Archipelago and southern Alaska south to central California. In the Pacific Northwest, they have a unique life history strategy; they feed primarily in nearshore marine waters but fly inland to nest in mature conifers. Nesting habitat is primarily associated with large tracts of old-growth forest, typically within 50 miles from shore, characterized by large trees, a multistoried stand, and moderate to high canopy closure (USFWS 1997). They are commonly absent from stands less than 60 acres in size. Nests are not built, but an egg is laid in a depression of moss or other debris on the limb of a large conifer. During the March to September breeding season, MAMU typically fly along river corridors for their morning and evening nest visits.

No species-specific surveys were conducted for MAMU. The habitat at Pudding Creek is not suitable nesting or foraging habitat for MAMU, as Pudding Creek has no forested habitat. This species requires mature coniferous forest to breed. The nearest documented CNDDB occurrence is in Russian Gulch State Park, approximately 10 miles south of the project BSA.

The nearest designated critical habitat for MAMU is approximately six miles south of the project BSA. Pudding Creek Bridge is mostly open with only a row of eucalyptus trees for wind break to the southeast.

Discussion of Western Snowy Plover, Pacific Coast DPS

The Pacific Coast Distinct Population Segment (DPS) of the Western snowy plover (WSP) (*Charadrius nivosus nivosus*) was federally listed as threatened (58 FR 12864) in May 1993 and is a state SSC. Critical habitat was designated for this DPS in 2005 and finalized on June

19, 2012 (77 FR 36728). 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, but they are also known to nest on gravel bars in lower perennial riverine systems near the coast. Nests typically occur in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent (USFWS 2007).

No species-specific surveys were conducted for WSP. The habitat at Pudding Creek is not suitable nesting habitat for WSP. The habitat above the OHWM at Pudding Creek BSA is densely vegetated with sedge, making it unsuitable for nesting WSP. The CNDDB lists no observations within the nine-quad search. The eBird database lists many detections within 7 miles of Pudding Creek Bridge, primarily on sandy beach and dune habitat at MacKerricher State Park and at the mouth of Ten Mile River. The nearest critical habitat unit for WSP is at MacKerricher State Park (Unit CA-7), approximately 3.5 miles north of Pudding Creek Bridge.

Discussion of Yellow-billed Cuckoo, Western DPS

The Western Distinct Population Segment (DPS) of the yellow-billed cuckoo (YBCU) (*Coccyzus americanus occidentalis*) was federally listed as threatened (79 FR 59992) as of October 3, 2014, and state listed as endangered on March 26, 1988. These birds breed in large blocks of riparian habitats (particularly woodlands with mature cottonwoods and willows). The optimal size and character of habitat patches for the species is generally greater than 200 acres with dense canopy closure (Laymon and Halterman, 1989). Individuals rarely use sites less than 50 acres for nesting, and sites less than 37 acres are considered unsuitable habitat (Laymon and Halterman, 1989). In coastal Northern California, YBCU have occurred during the breeding season intermittently over the past 15 years. Critical habitat for YBCU was proposed by the USFWS in 2014 (79 FR 48547) and revised in 2020 (85 FR 11458). The nearest proposed critical habitat to the project study area at Pudding Creek Bridge is in Unit 63-1 along the northern Sacramento River in Colusa and Tehama counties in California. There is no proposed critical habitat within or adjacent to the project BSAs.

No species-specific surveys were conducted for YBCU. This species is not expected to be present. The habitat within the BSA at Pudding Creek is not suitable nesting habitat for YBCU. Pudding Creek is a broad, open habitat, with dense, uniform thickets of willows and coyote brush and there is not a sufficient canopy of riparian trees. The CNDDB lists no

observations of YBCU within the nine-quad search. The eBird database lists one detection approximately 7 miles southeast of Pudding Creek Bridge, in riparian habitat within Navarro Redwood State Park.

Discussion of Little Willow Flycatcher

The little willow flycatcher (WIFL) (*Empidonax traillii brewsteri*) was listed as state endangered on January 2, 1991, along with two other subspecies. 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 and cottonwoods; or smaller spring-fed or boggy areas with willow or alder (Craig and Williams, 1998). In lowland riverine habitats, it is thought that contiguous willow thickets are used because the linear nature of these areas provide enough edge habitat that provides sufficient openings within the canopy (Harris 1991).

No species-specific surveys were performed for WIFL. The habitat at the Pudding Creek BSA is not suitable nesting habitat for WIFL as riparian thicket nesting habitat is relatively small and patchy. No CNDDDB detections have been recorded within the nine-quad search radius. The eBird database contains multiple detections within the vicinity of the Pudding Creek Bridge BSA; however, the closest occurrences of WIFL is one at MacKerricher State Park (approximately 2 miles north of the Pudding Creek Bridge).

Discussion of Osprey

Osprey (*Pandion haliaetus*) is treated as “taxa to watch” by CDFW due to their former inclusion on special concern lists. While this species has demonstrated population declines, they are still common and widespread in the state and are currently at low risk for extinction. The current population trend for osprey is increasing (International Union for Conservation of Nature [IUCN] 2019). Osprey nesting habitat must include an adequate supply of accessible fish within a maximum of 12 miles of the nest. Its nests are usually built on snags, treetops, or crotches between large branches and trunks, on cliffs or human-built platforms. They are placed in open surroundings for easy approach and elevated for safety from ground predators.

No ospreys have been observed breeding within the BSA at Pudding Creek. The closest CNDDDB occurrence is along Big River approximately 13 miles to the southeast of the project

BSA. No nests have been observed within the project limits, however the proximity to the coast provides suitable foraging habitat, and the eucalyptus grove southeast of the bridge provides marginal nesting habitat.

Osprey is not expected to nest within the ESL at Pudding Creek Bridge; however, within the BSA, these species cannot be discounted due to the presence of marginally suitable nesting habitat.

Discussion of Bald Eagle

Though the bald eagle (*Haliaeetus leucocephalus*) was federally delisted, it is still considered state endangered. This species remains federally protected by the Bald and Golden Eagle Protection Act (16 U.S. Code §668). Bald eagles typically nest in large trees within one mile of fishable waters, within or directly adjacent to forests with large trees that provide suitable nesting structures (Buehler 2000). Active breeding occurs February through August. In Mendocino County, bald eagles are strongly tied to open water and undisturbed shorelines. River corridors and estuaries attract scattered individuals thought to be migrants, or otherwise nonresident, from October to March (Hunter et al., 2005).

No species-specific surveys were performed for bald eagle. The habitat at Pudding Creek is not suitable nesting habitat for bald eagle as it lacks undisturbed shorelines of open water with adjacent mature conifer trees that provide larger canopies for nesting. No bald eagles or their nests were observed within the BSA .

The nearest known occurrence of bald eagle, according to the eBird database, is approximately 8 miles south of the Pudding Creek Bridge BSA. CNDDDB lists no observations within the nine-quad search. Bald eagles may forage within or on the edge of the Pudding Creek estuary.

Discussion of Short-tailed Albatross

Short-tailed albatross (*Phoebastria albatrus*) is a federally endangered species, listed on July 31, 2000 (65 FR 147). No critical habitat has been designated for this species. The short-tailed albatross is a large pelagic seabird that nests on two volcanic islands in Japan—Torishima and Minimi-kojima. When feeding at sea, it ranges across the North Pacific, to as far west as off shore of California.

Nesting habitat is associated with open, treeless areas with low or no vegetation (USFWS 2008). Short-tailed albatross feed nocturnally along the edges of ocean shelves where there

is high biomass productivity for increased prey, primarily along the Aleutian archipelago and the Gulf of Alaska (USFWS 2008).

No species-specific surveys were conducted for short-tailed albatross. The project BSA is over 20 miles beyond the nearest boundary of the range for this albatross, which begins farther west along the continental shelf margins of the Pacific Ocean.

Discussion of Northern Spotted Owl

The Northern spotted owl (NSO) (*Strix occidentalis caurina*) is a federal and state threatened species. It was federally listed (55 FR 26114) on June 26, 1990, and state listed on August 25, 2016. Critical habitat was designated (73 FR 47326) on August 13, 2008. NSO generally has large home ranges and use large tracts of land containing significant acreage of older forest to meet their biological needs. The attributes of superior NSO nesting and roosting habitat typically include a moderate-to-high canopy closure (60 to 80%); 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. In redwood forests and mixed conifer-hardwood forests along the coast of northwestern California, considerable numbers of NSO also occur in young forest stands (USFWS 2011). NSO tends to select broken-top trees and cavities in older forests for nest sites, although they will also use existing platforms such as abandoned raptor nests, squirrel nests, mistletoe brooms, and debris piles. In younger forests, existing platforms are more frequently utilized for nest sites (Gutierrez et al. ,1995). Courtship initiates in February or March with the first eggs laid in late March through April. Fledglings generally leave the nest in late May or in June but continue to be dependent on their parents onto September until they are able to fly and hunt on their own. By September juveniles have left their natal area.

No species-specific surveys were conducted for NSO. There is no suitable nesting or foraging habitat within 0.25 mile of the project ESL. According to CNDDB, there have been three positive detections within two miles of the project area between 1982 and 2008. The nearest NSO activity center to the project BSA is approximately 7.5 miles southeast along Russian Gulch at Russian Gulch State Park. A second NSO activity center is approximately 2.8 miles southeast of the BSA along Big River. Critical habitat for NSO in the region is part of the Redwood Coast Sub-Unit 2, which is approximately 12 miles southeast of the Pudding Creek Bridge BSA.

Discussion of Southern DPS of Green Sturgeon

The Southern DPS of green sturgeon (*Acipenser medirostris*) was federally listed as threatened (71 FR 17757) as of April 7, 2006. This DPS extends from coastal watersheds south of the Eel River to San Francisco Bay, though the only known spawning population is in the Sacramento River. On October 11, 2009, NMFS designated critical habitat for the federally threatened southern DPS of green sturgeon (74 FR 52300). For the southern DPS, critical habitat encompasses coastal bays and estuaries from Monterey Bay, California, to the Strait of Juan de Fuca in Washington. Southern DPS North American green sturgeon migrate upriver to spawn between late February and late July. The spawning period is March to July, with a peak from mid-April to mid-June (Emmett et al., 1991). Juveniles migrate out to sea when they are 1 to 4 years old, although a majority apparently leave as yearlings (USFWS 1982). The green sturgeon forages in estuaries and bays ranging from San Francisco Bay to British Columbia.

DPS green sturgeon are not known to venture into non-natal streams beyond the head of the tide (NMFS 2015). There is no suitable passage habitat for sturgeon to migrate into and through the Pudding Creek Estuary. Water levels at the project BSA during the construction season would be too low for migrating sturgeon to reach the head of the tide within the ESL, unlike during the winter when the flow reaches the head of the tide. The BSA at Pudding Creek Estuary is not suitable habitat for foraging adults due to the sandbar blocking the mouth of the estuary during winter months.

Discussion of California Coastal ESU of Chinook Salmon

The California Coastal (CC) ESU of Chinook salmon (*Oncorhynchus tshawytscha*) was federally listed as threatened (64 FR 50394) as of September 16, 1999, and is a state SSC. Critical habitat was designated (70 FR 52488) on September 2, 2005. NMFS included this ESU in a final Coastal Multispecies Recovery Plan in October 2016 (FR 70666). The current range of this ESU encompasses the California coast from Redwood Creek in Humboldt County south to the Russian River in Sonoma County.

Chinook salmon are anadromous fish with a lifespan of three to five years. This species returns from the ocean to the streams where they were born to spawn and then die. Eggs hatch within 35 to 50 days and the alevins, or juveniles with attached yolk sacs, remain in the gravel from February to March. They then emerge from the gravel up into the stream flow as juveniles where they will stay for a few months before beginning their downstream migration to the ocean as smolts. As adults, one to three years usually are spent in the ocean before they return to the stream where they were born to spawn. Adult fall-run upstream migration

occurs from June through December with a peak in September and October. Spawning occurs from late September through December with a peak in late October.

Suitable Chinook salmon freshwater habitat consists of: (1) clean loose gravels needed for spawning and egg development; (2) adequate pools and natural instream cover for juveniles; (3) off-channel habitats for juveniles to survive winter flows; (4) clean cool water; and (5) unimpaired passage to and from the ocean. Coastal estuaries play an equally important role in the life history of Chinook salmon because they serve as transitional habitat between life in freshwater and marine environments during the smolt life stage.

Critical habitat for CC ESU of Chinook salmon encompasses accessible reaches of all rivers (including estuarine areas and tributaries) within its range. It includes all waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers, but excludes: 1) areas above specific dams; 2) areas above longstanding, naturally impassable barriers; and 3) tribal lands.

The project study area is within the range of the California Coastal ESU of Chinook salmon; however, Chinook salmon is not known to occur in Pudding Creek. This is likely because smaller streams like Pudding Creek do not provide sufficient area of estuary habitat for outmigrant Chinook smolts. (NES 2020; S. Thompson [CDFW], personal communication, January 21, 2020). There is no designated critical habitat for Chinook salmon within Pudding Creek.

Discussion of Essential Fish Habitat for Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal fishery management plans (FMP) to describe Essential Fish Habitat (EFH) being managed, as well as describe threats to that habitat from both fishing and non-fishing activities. In addition, to protect this EFH, federal agencies are required to consult with NMFS on activities that may adversely affect EFH.

EFH is defined by the MSA for federally-managed species as “those waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity.” Pudding Creek includes Pacific Coast Salmon EFH for coho salmon, which is regulated under the Federal Pacific Coast Salmon Fishery Management Plan (FMP) (Pacific Fishery Management Council 2016). 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 coho salmon consists

of four major components: (1) spawning and incubation; (2) juvenile rearing; (3) juvenile migration corridors; and (4) adult migration corridors.

The EFH boundary for Coastal Pelagic species is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the Exclusive Economic Zone and above the thermocline where sea surface temperatures range between 50 to 79°F (10 to 26°C) (NMFS 2019). The Pacific Fisheries Management Council defines Pacific Coast Groundfish EFH as all waters from the high tide line as well as parts of estuaries to 11,480 feet (3,500 m) in depth (NMFS 2019).

The Pudding Creek Estuary supports EFH for species regulated under the Coastal Pelagic FMP and Pacific Groundfish FMP. Table 2 lists the species associated with these essential fish habitats in the Pudding Creek estuary. The proposed project would require consultation with NMFS for possible impacts to EFH. Coastal Pelagic and Pacific Coast Groundfish EFH is present at Pudding Creek Bridge and includes the species listed in Table 2.

Pudding Creek supports EFH for species regulated under the federal Pacific Coast Salmon Fishery Management Plan, namely coho salmon. This reach of Pudding Creek serves as a migration corridor for coho salmon smolts and adults and as juvenile rearing habitat. There is no suitable spawning habitat in the BSA.

Table 2. Species Associated with Various EFH Types in the Pudding Creek Estuary

Coastal Pelagic
Northern Anchovy (<i>Engraulis mordax</i>)
Pacific Sardine (<i>Sardinops sagax</i>)
Pacific Coast Groundfish
Arrowtooth Flounder (<i>Atheresthes stomias</i>)
Butter Sole (<i>Isopsetta isolepis</i>)
English Sole (<i>Parophrys vetulus</i>)
Pacific Sanddab (<i>Citharichthys sordidus</i>)
Petrale Sole (<i>Eopsetta jordani</i>)
Rex Sole (<i>Glyptocephalus zachirus</i>)
Rock Sole (<i>Lepidopsetta bilineata</i> and <i>L. polyxystra</i>)

Pacific Coast Groundfish
Sand Sole (<i>Psettichthys melanostictus</i>)
Starry Flounder (<i>Platichthys stellatus</i>)
Black Rockfish (<i>Sebastes melanops</i>)
Black-and-Yellow Rockfish (<i>Sebastes chrysomelas</i>)
Blue Rockfish (<i>Sebastes mystinus</i>)
Brown Rockfish (<i>Sebastes auriculatus</i>)
China Rockfish (<i>Sebastes nebulosus</i>)
Copper Rockfish (<i>Sebastes caurinus</i>)
Gopher Rockfish (<i>Sebastes 53levins53s</i>)
Grass Rockfish (<i>Sebastes rastrelliger</i>)
Olive Rockfish (<i>Sebastes serranoides</i>)
Quillback Rockfish (<i>Sebastes maliger</i>)
Lingcod (<i>Ophiodon elongatus</i>)
Cabezon (<i>Scorpaenichthys marmoratus</i>)
Kelp Greenling (<i>Hexagrammos decagrammus</i>)
Leopard Shark (<i>Triakis semifasciata</i>)
Soupfin Shark (<i>Galeorhinus galeus</i>)
Spiny Dogfish (<i>Squalus acanthias</i>)
Big Skate (<i>Raja binoculata</i>)

Pacific Coast Salmon
Coho Salmon (<i>Oncorhynchus kisutch</i>)

Discussion of Central California Coast ESU of Coho Salmon

The Central California Coast (CCC) ESU of coho salmon (*Oncorhynchus kisutch*) is both a federal and state endangered species. Federal listing as threatened (61 FR 56138) occurred on October 31, 1996, and a final listing of endangered was enacted on June 28, 2005 (70 FR 37160). Critical habitat was designated on May 5, 1999 (64 FR 24049). A Recovery Plan

for this species was finalized in September 2012 (NMFS 2012). California Fish and Game Commission listed the CCC ESU of coho salmon on August 30, 2002 (CDFG 2004). The current range of the CCC ESU extends from Punta Gorda in southern Humboldt County to Aptos Creek in Santa Cruz County. Historically, the range also included the San Francisco Bay and its tributaries; today, CCC salmon are extirpated from all rivers that flow into San Francisco Bay.

Coho salmon exhibit distinct morphological characteristics throughout their life cycle. As juveniles, coho have parr marks (vertical bars) along the lateral line. Adult coho salmon can reach 28 inches in length and weigh 14 pounds. Coho salmon have a lifespan of three years. Migration from the ocean to freshwater spawning sites typically occurs between October and January, with a peak in December. Adult coho salmon in Pudding Creek can enter the drainage after the sandbar is breached during the first large rain event. Shortly after arrival to spawning areas, fish spawn and then die. Eggs hatch within 35-50 days and the alevins remain in the gravel from February to March. Upon emergence from redds (nest scrapes) in March to May, fry utilize river margins and undercut banks for cover. Juveniles remain in freshwater for one to two years before developing into smolts. Outmigration of smolts to the ocean typically occurs from March to July, with a peak in May. Coho salmon juveniles in Mendocino County generally out-migrate to the ocean from February to June, although timing may be slightly earlier or later depending on the year (NES 2020). Smolts spend time in estuaries prior to entering the ocean to acclimate to a saline environment. After one to two years spent in the ocean, adults return to their natal streams to spawn and continue the life cycle.

Critical habitat is designated to include all river reaches accessible to coho salmon within the range of the ESU and consists of the water, substrate, and adjacent riparian zone of estuarine and riverine reaches. “Adjacent riparian zones” provide shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

Suitable coho salmon freshwater habitat has the following Primary Constituent Elements (PCEs)¹: it consists of perennial streams with cool, high-quality water; dense riparian canopy; deep complex pools with large woody debris; in-stream cover with woody debris

¹ A physical or biological feature essential to the conservation of a species for which its designated or proposed critical habitat is based on, such as space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the species historic geographic and ecological distribution.

and undercut banks; and a gravel or cobble substrate. These structural features create an environment that supports existence of food sources for coho, including aquatic vegetation, plankton, benthic and nearshore invertebrates, and other fish species. Suitable estuarine habitat features include cover and food sources, deep cool water, and influxes of freshwater to dilute salinity concentration.

No species-specific surveys were conducted for coho salmon within the BSA. Based on monitoring report data and personal communication with staff at NMFS and CDFW, Pudding Creek is known to support the CCC ESU of coho salmon. (NES 2020).

Pudding Creek is designated critical habitat and known occupied habitat for coho salmon. A salmonid lifecycle monitoring program has been in regular operation since 1988 at the Pudding Creek Dam. Monitoring efforts have captured adult and juvenile coho and a high number of returning fish (NES 2020).

Monitoring data reveals the salmonid population in Pudding Creek fluctuates widely from year to year. For example, an estimated 1,167 coho salmon entered Pudding Creek in the 2004/2005 winter spawning season, but zero coho salmon were captured within the creek in the 2013/2014 season (Gallagher and Wright, 2012; Wright et al., 2011; CDFG 2006). Spawning adult estimates by Gallagher and Wright from 2001 to 2012 revealed a range from a high of 1,204 individuals in 2004 to a low of 9 individuals in 2010 (Gallagher and Wright, 2012).

The portion of Pudding Creek within the project area is an estuary with a sandy, silty substrate and does not contain gravel or small cobble that would be suitable as a spawning ground. However, the project BSA does provide estuarine habitat and serves as a migratory corridor for smolts during outmigration and for adult salmonids heading to upstream freshwater spawning beds. Per the Coastal Multispecies Final Recovery Plan (NMFS 2016), the estuarine habitat of Pudding Creek was rated as “fair” due to its altered condition, high recreational use, and poor water quality (e.g., increased temperature). While the project area may not provide high quality estuarine habitat, coho salmon are expected to occur in the system for at least parts of the year.

Discussion of Winter-run Northern California DPS of Steelhead Trout

The winter-run Northern California (NC) Distinct Population Segment (DPS) of steelhead trout (*Oncorhynchus mykiss irideus*) was listed as threatened under FESA in 2000 and reaffirmed a threatened species on January 5, 2006 (71 FR 834). Critical habitat was designated on September 2, 2005 (70 FR 52488). A draft Recovery Plan was released in

October 2015 and finalized in 2016 (NMFS 2016). This DPS ranges from northern Humboldt County to Sonoma County. EFH is not defined for this species because it is not a commercially-managed species.

Suitable freshwater spawning habitat consists of fast, well-oxygenated rivers and streams with gravel substrates that do not have excessive amounts of silt. Suitable rearing habitat contains cover features such as overhanging and emergent vegetation, boulders, and woody material, and high flow velocity features such as riffles for feeding. Steelhead feed on zooplankton, aquatic and terrestrial insects, mollusks, crustaceans, and other small fishes. The lateral extent of designated critical habitat in estuarine environments that exhibit the primary constituent element (PCEs) for steelhead is defined by the OHWM.

The population of steelhead trout on the Mendocino coast are winter-run, which are ocean-maturing-type steelhead. When the fish enter fresh water between November and April, they are already sexually mature and migrate upstream to spawn. Unlike other salmonids, steelhead are iteroparous, meaning they produce offspring more than once in their lifetime, and thus can spawn more than once. Once suitable spawning habitat is found, females prepare the spawning nest (i.e., redd) and lay up to 1,000 eggs. Eggs hatch within three to four weeks. Steelhead young rear in freshwater environments for one to three years. Smolt out-migration occurs from February to June, with peak periods in April and May. During this time, smolts may use estuaries to acclimate to saline environments prior to entering the ocean.

Pudding Creek is designated critical habitat and known occupied habitat for steelhead trout. A salmonid lifecycle monitoring program has been in regular operation since 1988 at the Pudding Creek Dam. Monitoring efforts have captured adult and juvenile steelhead and coho salmon, as well as a high number of returning fish, showing a high rate of escapement (returns of previously marked smolts) in the system (Gallagher and Wright, 2012; Cochran 2015; NMFS 2016).

Monitoring data reveals the steelhead population in Pudding Creek fluctuates widely from year to year. For example, an estimated 203 steelhead entered Pudding Creek in the 2004/2005 winter spawning season, while in the 2013/2014 season only 26 steelhead were documented (Gallagher and Wright, 2012; Wright et al., 2011; CDFG 2006).

The portion of Pudding Creek within the project BSA is an estuary with a sandy, silty substrate and does not contain gravel or small cobble suitable for spawning. The project BSA does provide juvenile rearing habitat, including suitable habitat for smoltification, and serves as a migratory corridor for adult steelhead to upstream freshwater spawning beds. Per

the Coastal Multispecies Final Recovery Plan (NMFS 2016), the estuarine habitat of Pudding Creek was rated as "fair" due to its altered condition, high recreational use, and generally unsuitable summer rearing conditions due to poor water quality (e.g., temperature). While the project area may not provide high quality estuarine habitat, steelhead can be expected to occur in the system for at least parts of the year.

Discussion of Tidewater Goby

The tidewater goby (TWG) (*Eucyclogobius newberryi*) was listed as a federal endangered species on February 4, 1994 (59 FR 5494). Critical habitat for northern populations was designated on January 31, 2008, and revised on February 6, 2013 (78 FR 8746). A Recovery Plan was finalized in December 2005 (USFWS 2005). PCEs for tidewater goby include persistent, shallow, still-to-slow-moving lagoons, estuaries, and coastal streams with low salinities which provide adequate space for normal behavior and individual and population growth. These environments contain suitable substrate for construction of burrows, aquatic vegetation that provides shelter, or a seasonally-closed estuary or lagoon that results in relatively stable water and salinity levels (78 FR 8755).

TWG is endemic to coastal brackish lagoons and estuaries along the Pacific Coast of California and currently ranges from Tillas Slough in the Smith River drainage in Del Norte County to Cocklebur Canyon in San Diego County. Overall, the species occurs in discontinuous and discrete populations and can be separated into six major regional groups. This is due in part to the restriction of the species to coastal lagoons; gobies do not intentionally migrate or experience a freshwater or marine life stage. Goby populations are highly susceptible to changing environmental conditions and local abundance can fluctuate from a few individuals to hundreds or thousands or may undergo intermittent extirpations.

TWG is a small, benthic fish with a one-year life cycle. This species lacks a swim bladder and rarely exceeds two inches in length. Inhabited waters are typically still to slow-moving and less than three feet deep with salinities of less than 12 parts per thousand (ppt). The most stable populations are usually found in lagoons and estuaries that are at least 5 to 125 acres and relatively undisturbed by anthropogenic activities. Reproduction can occur year-round, though based on optimal water temperature and salinity, tends to peak in early spring and late summer after lagoons close to the ocean. Optimal conditions for breeding are water temperatures between 48 to 77°F (9 to 25°C) and salinities of 2 to 27 ppt. Tidewater gobies nest in burrows. Using their mouths, the males dig a vertical burrow 4 to 8 inches (10 to 20 cm) deep in unconsolidated, coarse sand or mud substrates with minimal vegetative cover. A study discovered that mucus is used to cement and support the burrow (Swift et al., 1989).

Females lay 300 to 500 eggs per clutch and 6 to 12 clutches per year. The eggs are hung from the ceiling and walls of the burrow. Males continuously guard the burrow for approximately 9 to 11 days until the eggs hatch (USFWS 2005). Following hatching, the larvae live in vegetated areas of estuaries until they reach 0.5 to 0.7 inch (1.2 to 1.8 cm) (Moyle et al., 1995), at which time they have matured sufficiently to become free-swimming and benthic. Those that survive mature to breed the next season.

The suspected causes for fluctuations in reproduction rates are the death of breeding adults in early summer and colder temperatures or hydrological disruptions in winter (Swift et al., 1989). There are many known human-related threats to TWG habitat. These include urban runoff, human disturbance of burrows, construction and maintenance activities, alteration of stream flood flows, development encroaching on habitat, water diversion, increased predation by non-native predators (e.g., bullfrogs), and alteration of the salinity regime (USFWS 2005).

Pudding Creek is occupied and designated critical habitat for tidewater goby. Pudding Creek is in the NC-5 Sub-Unit (Virgin and Pudding Creeks) of the larger North Coast Recovery Unit. The North Coast Recovery Unit extends from Tillas Slough in the Smith River drainage in Del Norte County to Lagoon Creek in Mendocino County (USFWS 2005) and was considered occupied at the time of listing.

Several studies on TWG have been conducted in Pudding Creek. Gobies and/or their environmental DNA (eDNA) have been collected from the creek from 1996 to 2013 (Chamberlain 2006 and 2011; McCraney and Kinziger, 2009; and Kinziger and Schmelzle, 2013). The population is abundant and relatively persistent (USFWS 2005). Pudding Creek exhibits a tidally influenced, seasonally closed lagoon system which, based on the persistence of the goby population, can be assumed to have suitable salinities, temperatures, sand/mud substrates, and vegetated shallows for goby breeding and rearing. Chamberlain estimated that approximately 12 to 15 acres of suitable goby habitat is present in Pudding Creek (Chamberlain 2011).

Discussion of Behren's Silverspot Butterfly and Lotis Blue Butterfly

Behren's silverspot butterfly (*Speyeria zerene behrensii*) (BSSB) was listed as a federal endangered species (62 FR 64306) on December 5, 1997. No critical habitat has been designated for this species. A Recovery Plan for the species was finalized in March 2016 (USFWS 2016). BSSB is a rare, endemic, coastal species. The known range of the BSSB in Mendocino County is within one mile of marine waters from the Sonoma County border and north to Laguna Point in MacKerricher State Park, north of Fort Bragg. BSSB occupy early

successional coastal terrace prairie habitat that contains plants from the genus *Viola* (especially *Viola adunca*), which it requires for both food and larval-hosting purposes (USFWS 2016).

The lotis blue butterfly (*Lycaeides idas* ssp. *lotis*) (LBB) was listed as a federally endangered species (41 FR 22041) on June 1, 1976. No critical habitat has been designated for this species. Historically, this butterfly occurred along coastal Mendocino and northern Sonoma counties, with sites possibly also in northern Marin County. Due to the small population size and limited sightings, specific details about the life history and suitable habitat characteristics for the butterfly are unknown. Suitable habitat is thought to be wet meadows or sphagnum bogs in pygmy conifer forest. Larval food plants may include *Hosackia gracilis* or other lotis species. The last known occupied site was north of the town of Mendocino. The LBB has not been observed in the wild since 1983.

The project is within the potential geographic range of BSSB and LBB. Surveys were first conducted in 2014 following the USFWS Draft Guidelines (2006). No *V. adunca*, *H. gracilis* or other potential nectar source plants were found within the ESL or within 330 feet (100 meters) of the project at either bridge site. The project study area was again surveyed, per USFWS Guidelines, in 2019 to detect habitat for BSSB and LBB. A large patch of *V. adunca* was observed approximately 100 feet northeast of the project site at Pudding Creek Bridge. No *H. gracilis* was observed within the study area at Pudding Creek Bridge.

Discussion of Western Bumblebee

The Western bumblebee (*Bombus occidentalis occidentalis*) was recently accepted as a candidate species for listing as an endangered species under CESA on June 12, 2019. The Western bumblebee has recently declined in abundance and distribution, and is no longer present across much of its historic range (Xerces Society 2012). In California, populations of this bee are currently largely restricted to high elevation sites in the Sierra Nevada (Xerces Society 2012), though there are a few occurrences on the northern California coast (Xerces Society 2017). The Western bumblebee lives in annual colonies late February to early November that comprise a queen, workers, and reproductive members. Western bumblebees are found in a wide variety of natural, agricultural, urban, and rural habitats and are generalist foragers, gathering pollen and nectar from a wide variety of flowering plants (Hatfield et al., 2012). This subspecies prefers meadows and grasslands with abundant floral resources for both foraging and nesting. They nest in underground cavities such as old animal nests and in open west-southwest slopes bordered by trees.

No species-specific surveys were conducted for Western bumblebee. CNDDDB contains records of Western bumblebee being collected in Fort Bragg in 1950. There is potential foraging and nesting habitat for Western bumblebee in the soil and within the ruderal grassland and herbaceous cover on the north bank and northwest side of Pudding Creek Bridge.

Discussion of Point Arena Mountain Beaver

The Point Arena mountain beaver (*Aplodontia rufa nigra*) (PAMB) is federally listed as endangered (56 FR 64716) and is a California SSC. The PAMB's black coloration, small size, and morphological measurements distinguish it from other subspecies of mountain beaver (Taylor 1914, 1918). PAMB is one of seven subspecies of mountain beaver which are found from southern British Columbia to Point Reyes, California, and east to the Cascade and Sierra Nevada Ranges (Feldhamer and Rochelle, 1982). PAMB is extremely limited in distribution, known only from a small area of coastal Mendocino County, California. Occupied sites are known from Bridgeport Landing south to Point Arena (USFWS 2009). This species is found in a variety of plant community types, including Northern coastal scrub, coastal bluff scrub, Northern riparian scrub, Northern dune scrub, freshwater seep, riparian, and closed-cone conifer forest (USFWS 1998). PAMB lives in underground burrow systems which exhibit numerous openings under moderately tall, lush, perennial vegetation. Burrow systems typically occur in cool, moist areas located on north-facing slopes or in gullies, probably due to the mountain beaver's inability to avoid heat stress (Johnson 1971; Kinney 1971). Soils in occupied habitat are typically friable and well-drained, although the presence of water in tunnels is not uncommon.

The project BSA is over 20 miles beyond the nearest boundary of the range for PAMB.

Discussion of West Coast DPS of Fisher—Northern California ESU

The West Coast DPS of fisher (*Pekania pennanti*) is federally proposed for listing as threatened (84 FR 60278) and is a SSC within the Northern California ESU where the project would occur. The fisher is one of the larger members of the weasel family (*Mustelidae*) and are opportunistic, generalist predators with a diverse diet. 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 (Zielinski et al., 2006).

The project BSA is over 100 miles beyond the nearest boundary of the range for fisher. Additionally, there is no suitable habitat for this species within the project BSA.

Discussion of Bat Species

Many bat species in California either use or are likely to use bridge structures (Erickson et al., 2002). Bats use bridge cavities for roosting during the day and for bearing and rearing young (i.e., maternal roost) typically from May through August. They may also use bridges in winter as hibernacula. At night, bats often roost in the open on the concrete undersides of bridges. Night roosts, which are used from approximately sunset to sunrise, are sites where animals congregate to rest and digest their food between foraging bouts. Night roosts also serve as important stopping points during migration and appear to have a social function. In the mild northern California coastal climate, bats are present year-round. In colder areas they are often migratory.

In California, nine species of bats are considered state SSC by CDFW and three additional species are proposed for that status. Additionally, the Forest Service and Bureau of Land Management list some species as sensitive and the Western Bat Working Group lists some as high priority for consideration of conservation measures. Under CEQA, state agencies, local governments, and special districts are required to evaluate and disclose impacts from projects in the state. Section 15380 of the CEQA Guidelines clearly indicates that SSC should be included in an analysis of project impacts. CFGC Section 4150 provides further protection to bats (non-game mammals) from take or possession. Disturbances by humans, especially in hibernacula and maternity roosts, are a serious threat to most of the species.

There are no CNDDDB records of special status bat occurrences within the BSA at Pudding Creek Bridge. The bridge itself provides potentially suitable bat roosting habitat between the girders on the underside of the bridge. The bridge was inspected and no signs of bat use, such as guano, staining, a strong odor, or live bats were observed within the spans or on the ground nearest the abutments during preliminary surveys in spring and summer of 2017. However, only the joints and girders at the abutments were accessible. Although it was not possible to closely examine the girders over the creek with the equipment available at the time, a kayak survey could confirm presence or absence of guano staining under the structure and would be conducted during future habitat assessment surveys. While it is unlikely that the bridge is used as a day roost, bats in the area may use the bridge for night roosting.

Seasonally-appropriate emergence surveys throughout the year prior to construction would be conducted by a qualified biologist to fully assess bat presence.

Discussion of Marine Mammals

California's Pacific Coast provides a migratory route for several species of marine mammals, many of which are federally listed species. These species include Guadalupe fur seal (*Arctocephalus townsendi*), sei whale (*Balaenoptera borealis*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), North Pacific right whale (*Eubalaena japonica*), humpback whale (*Megaptera novaeangliae*), Southern Resident killer whale (*Orcinus orca*), and sperm whale (*Physeter macrocephalus*). These whale species are listed as endangered and the Guadalupe fur seal is listed as threatened.

More common marine mammals such as gray whale (*Eschrichtius robustus*), Pacific harbor seal (*Phoca vitulina richardii*), Northern elephant seal (*Mirounga angustirostris*), and California sea lion (*Zalophus californianus*) inhabit the coastal zones of northern California. Cetaceans, including whales, may travel through or forage in or near shallow (e.g., 30 to 50 feet deep) bays or harbors during migration. The rest of these species, known as pinnipeds, may use beaches in northern California as haul-out sites to rest, or may enter bays and estuaries to feed. Habitats used as haul-out sites include tidal rocks, mudflats, sandbars, and sandy beaches.

All marine mammals are protected by the Marine Mammals Protection Act (MMPA). This federal act prohibits the taking (harassment, injury, or killing) of marine mammals unless exempted by the MMPA or authorized under a permit for Incidental Take that occurs under otherwise lawful activities (Sections 101(a)(5)(A)). NMFS issues incidental take authorizations for activities including highway bridge and port construction. Harassment of marine mammals falls under two levels:

Level A: any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild or,

Level B: any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

No reported sightings of marine wildlife on Pudding Creek Beach or within the estuary could be found. Pudding Creek Beach is a high use area, open year-round to recreationalists. The

daily presence of humans and dogs make it a highly unlikely marine animal haul out site. Additionally, the Pudding Creek estuary is usually only accessible from the ocean during the wet season (winter and early spring), when the sandbar is not closed. The mouth of Pudding Creek is about 50 feet wide and the estuary only provides 17 acres of aquatic habitat. It is highly improbable that marine animals would enter the Pudding Creek estuary, particularly during the summer when much of the construction would occur.

While some of the federally listed species mentioned above (such as the blue whale, humpback whale, and Southern Resident killer whale) migrate relatively close to shore, these species are highly unlikely to occur less than one mile from the shore; therefore, are outside the BSA limits. Similarly, Guadalupe fur seal is only known to occur as far north as Point Reyes, and its range is outside the limits of the BSA.

Discussion of Leatherback Sea Turtle, East Pacific DPS of Green Sea Turtle, and Olive Ridley Sea Turtle

Leatherback sea turtle (*Dermochelys coriacea*) is a federally endangered species, listed (35 FR 8491) on June 2, 1970. Marine critical habitat for the leatherback turtle was designated (44 FR 17710) on March 23, 1979, for waters in the Caribbean Sea. The leatherback turtle is the largest known sea turtle in the world. It occurs worldwide in marine waters. In the eastern North Pacific, the leatherback turtle may inhabit off-shore waters of California, British Columbia, Washington, and Oregon.

The leatherback sea turtle feeds mostly on jellyfish and tunicates, and also exhibits some opportunistic feeding on zooplankton. This species forages in off-shore habitat along slope waters as close as 30 miles from shore, while fewer occur over the continental shelf (NMFS 2019). This species, like other sea turtles, nests on beaches in the tropics and sub-tropics, ranging from Colombia north to Baja California.

The East Pacific DPS of green sea turtle (*Chelonia mydas*) is a federally threatened species, listed (43 FR 32800) on July 28, 1978. Marine critical habitat for the East Pacific DPS of green sea turtle was designated (63 FR 46693) on September 2, 1998, for waters in the Caribbean Sea. A recovery plan for this DPS was issued on January 12, 1998. The East Pacific DPS of green sea turtle is a large sea turtle that occurs worldwide in marine waters. In the eastern North Pacific, the green sea turtle may inhabit nearshore waters of California.

The East Pacific DPS of green sea turtle is primarily an herbivore, eating mostly seagrass and algae. Foraging habitat is nearshore and is associated with bays, lagoons, and reefs with marine algae and seagrass bed habitat. Prior to recruiting to nearshore foraging areas, early-

stage juveniles of this DPS forage on plant and animal life found in pelagic drift communities, such as pelagic Sargassum communities (NMFS and USFWS 2007). This species, like other sea turtles, nests on sandy beaches in the tropics and sub-tropics.

Breeding colony populations of the olive ridley sea turtle (*Lepidochelys olivacea*) on the Pacific Coast of Mexico are federally listed as endangered; all other populations are federally listed as threatened (43 FR 32800, July 28, 1978). No critical habitat has been designated for olive ridley. A recovery plan for this species was issued on January 12, 1998. The olive ridley occurs worldwide in tropical and warm temperate ocean waters and the majority of nesting occurs along continental margins and rarely on oceanic islands. In the eastern North Pacific, this species may inhabit nearshore waters of California.

The olive ridley is primarily a carnivore, eating mollusks, crustaceans, jellyfish, sea urchins, crab, fish, sea urchins, snails, and jellyfish. Foraging habitat is in protected, relatively shallow bays and lagoons and the shallow water between reefs and the shore. This species, like other sea turtles, nests on sandy beaches in the tropics and sub-tropics.

No species-specific surveys were conducted for leatherback sea turtle, East Pacific DPS of green sea turtle, or olive ridley sea turtle. The BSA is outside the range of the leatherback sea turtle. Habitat within the BSA is not suitable foraging habitat for East Pacific DPS of green sea turtle, as neither contain seagrass beds, nor for olive ridley, as the estuary is closed off during the winter by a sand barrier. There are no documented CNDDDB occurrences for any of these species within the 9-quadrant search area.

Discussion of Environmental Evaluation Question 2.6a—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 CDFW, USFWS, or NOAA Fisheries?*

Plant Species

Discussion of Humboldt County Milk-Vetch

Humboldt County milk-vetch has not been documented within or adjacent to the project area; therefore, proposed construction would not be expected to directly or indirectly impact this species. The project would have no impact on Humboldt County milk-vetch.

Given Humboldt County milk-vetch would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Howell's Spineflower

Howell's spineflower has not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly affect this species. The project would have no effect on Howell's spineflower.

As Howell's spineflower and Howell's spineflower habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Menzie's Wallflower

Menzie's wallflower has not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly affect this species. The project would have no effect on Menzie's wallflower.

As Menzie's wallflower and Menzie's wallflower habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Roderick's Fritillary

Roderick's fritillary has not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly impact this species. The project would have no impact on Roderick's fritillary.

As Roderick's fritillary and Roderick's fritillary habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Burke's Goldfields

Burke's goldfields has not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly affect this species. The project would have no effect on Burke's goldfields.

As Burke's goldfields and Burke's goldfields habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Contra Costa Goldfields

Contra Costa goldfields and its critical habitat have not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly affect this species. The project would have no effect on Contra Costa goldfields.

As Contra Costa goldfields and Contra Costa goldfields critical habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Showy Indian Clover

Showy Indian clover has not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly affect this species. The project would have no effect on Showy Indian clover.

As Showy Indian clover and Showy Indian clover habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Monterey Clover

Monterey clover has not been documented within or adjacent to the project study area; therefore, proposed construction would not be expected to directly or indirectly affect this species. The project would have no effect on Monterey clover.

As Monterey clover and Monterey clover habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Animal and Threatened/Endangered Species

Discussion of California Red-legged Frog and Northern Red-legged Frog

Because the project BSA is outside the range of this species, construction activities in the ESL are expected to have no impacts on California red-legged frog (CRLF).

Ground disturbance and vegetation removal on the banks of Pudding Creek near the bridge could disturb Northern red-legged frog (NRLF) utilizing the habitat in the BSA; however, project activities are not likely to adversely impact these species given the low risk of exposure (marginal habitat suitability) and the measures described below.

Potential impacts to NRLF would be avoided and minimized through implementation of the standard measures identified in Section 1.5 designed to protect water quality, establish HVF fencing to minimize disturbance in sensitive habitat areas, and the plan for aquatic species relocation. A qualified biologist would be present at the start of all construction operations on the banks of the creek to survey and relocate amphibians to suitable habitat outside of construction zones to avoid impacts to this species.

Since this project would not affect CRLF and is unlikely to adversely impact NRLF, no compensatory mitigation would be required. Because adverse impacts to CRLF or NRLF are not anticipated, no cumulative impacts are expected.

Discussion of Migratory Birds

Pile driving and hoe ram activity at Pudding Creek Bridge would produce airborne noise above ambient noise levels, and this elevated noise has the potential to lead to temporary hearing loss. Many studies have been conducted on the effects of intense noise on bird hearing and auditory structures. These studies show that birds are much more resistant to hearing loss and auditory damage than humans and other mammals. Traffic and construction noise, even at extreme levels, is unlikely to cause hearing loss, auditory damage, or damage to other organs in birds. However, if birds are within proximity to extreme noise levels, such as pile driving, then noise may reach levels high enough to cause auditory damage (Caltrans 2016).

Airborne noise from impact pile driving and hoe ramming typically reaches 95 A-weighted decibels (dBA) at 50 feet. Based on noise exposure studies in birds and small mammals, the interim guidelines for multiple impulse noise sources (e.g., pile driving) indicate that airborne noise levels below 125 dBA would not cause hearing damage (Caltrans 2016). Therefore, airborne noise produced by pile driving would not result in permanent injury to birds, but may result in temporary hearing loss or change in behavior to birds within 50 feet.

Additionally, project activities, such as road widening and access clearance, would result in vegetation removal of habitat that may support bird nests when conducted during the nesting season, which extends approximately February 1 to September 15.

Pile driving and hoe ramming would occur between June 15 and October 15, during the majority of the bird breeding season. To avoid impacts to nesting birds, vegetation would be removed outside of the bird breeding season (September 16 to January 31). Prior to pile driving and outside of the nesting bird season, vegetation within the work area would be removed, so there would be little vegetation present within the project limits and no active nests within proximity. To minimize the potential for temporary hearing loss or behavioral effects (such as nest abandonment) during the breeding season, migratory bird surveys would be conducted by a qualified biologist no more than one week prior to the initiation of pile driving to identify nesting birds within a 50-foot buffer of pile driving activities. If any active nests are found, the need for a protective buffer would be assessed. It is anticipated birds would move away from the work area once pile driving begins. Accordingly, impacts to migratory birds from pile driving are not anticipated.

No compensatory mitigation would be required because native birds protected under the MBTA are unlikely to be impacted by the proposed work. Project impacts to native birds protected under the MBTA are not anticipated; therefore, no cumulative impacts are expected.

Discussion of Marbled Murrelet

Because the project BSA lacks suitable nesting habitat, construction activities in the ESL are not anticipated to have any impacts on marbled murrelet (MAMU). As MAMU and MAMU critical habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Western Snowy Plover, Pacific Coast DPS

Given the lack of suitable breeding habitat or designated critical habitat within or adjacent to the project study area, the project would have no effect on Western snowy plover (WSP) or WSP critical habitat. As WSP and WSP critical habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Yellow-billed Cuckoo, Western DPS

There is no proposed critical habitat for Yellow-billed cuckoo (YBCU) within or adjacent to the project area. Because YBCU is not anticipated to occur within the BSA, the project would have no effect on YBCU or its critical habitat. As YBCU and YBCU critical habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Little Willow Flycatcher

No impacts are anticipated to little willow flycatcher (WIFL) due to project activities because this species is not expected to occur within the BSA. As WIFL and WIFL critical habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Osprey

Visual and noise disturbance associated with bridge construction near an active nest could potentially impact osprey within the BSA. Noise and visual impacts to this species, however, would not be substantial given the existing relatively high ambient noise and human activity along SR 1 and surrounding area, the temporary nature of the project, and the implementation of standard measures identified in Section 1.5 that are intended to avoid disturbing active nests. No adverse impacts are anticipated to this species.

Because the proposed project is not anticipated to impact osprey nests or potentially suitable habitat, no species-specific avoidance and minimization measures would be implemented beyond the standard measures identified in Section 1.5. These measures include pre-construction surveys by a qualified biologist for active bird nests in suitable habitat within

the BSA and establishing a suitable buffer distance. If an active nest was found, appropriate conservation measures would be implemented, such as 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.

The proposed project is not expected to impact nesting osprey or alter suitable habitat; therefore, no compensatory mitigation would be required. The proposed project is not expected to impact nesting osprey or alter suitable habitat; therefore, no cumulative impacts are expected.

Discussion of Bald Eagle

There is potential for elevated noise from impact hammer activity within the BSA, which could lead to a short term, temporary impact of avoidance of the BSA by foraging bald eagles. Avoidance of foraging habitat could result in temporary reduction in foraging potential. However, the possibility of bald eagles altering their foraging behavior is likely discountable or insignificant as there is an abundance of surrounding foraging habitat in the general area along the coast and in adjacent watersheds of larger rivers, such as Noyo River to the south. Additionally, no bald eagle nests or nesting habitat would be removed for this project. As bald eagles are unlikely to be affected by the proposed work, no species-specific avoidance and minimization measures would be required. As bald eagles are unlikely to be affected by the proposed work, no compensatory mitigation would be required. Impacts to bald eagle are not anticipated; therefore, no cumulative impacts are expected.

Discussion of Short-tailed Albatross

Because the project BSA is outside the range of this species, construction activities in the ESL are not expected to have impacts on short-tailed albatross. As short-tailed albatross would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Northern Spotted Owl

Effects to Northern spotted owl (NSO) are unlikely because NSO is not expected to be present within or adjacent to the BSA. As NSO would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Southern DPS of Green Sturgeon

This action would have no effect on green sturgeon since work on the banks of Pudding Creek would be conducted at low tide during the dry season when water is too shallow for sturgeon to enter the channel and be present in the creek bed. Because the BSA within the Pudding Creek Estuary lacks suitable foraging habitat, construction activities in the ESL are not expected to affect green sturgeon. As green sturgeon would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of California Coastal ESU of Chinook Salmon

No effects to Chinook salmon or Chinook salmon critical habitat are anticipated as a result of project activities at Pudding Creek Bridge because this species is not known to occur in the drainage. As Chinook salmon and Chinook salmon critical habitat would not be affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Essential Fish Habitat for Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon

Water quality may be temporarily impaired due to short term, localized increases in turbidity from project activities that involve ground disturbance, or by contaminants in roadway stormwater runoff or accidental spills during construction, which could potentially compromise safe passage conditions for fish migration and reduce the quality of localized rearing habitat. However, the project features (such as performing all work above the OHWM, Standard Measures, and Best Management Practices to protect water quality identified in Section 1.5) would minimize the magnitude and duration of any turbidity increases, provide for site stabilization post construction, and ensure proper handling and storage of contaminants to avoid accidental spills.

There is a slight potential of project construction activities, such as vegetation removal and ground disturbance, to adversely affect water quality in EFH. Accordingly, the potential for spills of construction-related materials, as well as increased turbidity and sedimentation, are not likely to, but may adversely affect water quality. However, the *Project Features, Standard Measures, and Best Management Practices* to protect water quality identified in Section 1.5 would minimize the magnitude and duration of any turbidity increases, provide

for site stabilization post construction, and ensure proper handling and storage of contaminants to avoid accidental spills.

Cover/shelter, foraging potential, and safe passage conditions may be temporarily compromised due to noise (e.g., vibration from construction equipment, pile driving, hoe-ramming) and visual stressors (e.g., artificial light, sudden movements) during construction. There would also be a small temporal loss of vegetation that provides riparian function. The scale of these effects would be small, resulting in no measurable decrease in the quality of habitat for EFH species.

The proposed project *may adversely affect* EFH for Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon species due to:

- increases in turbidity from activities that involve ground disturbance or by contaminants in roadway stormwater runoff or accidental spills during construction
- temporary removal of riparian habitat and reduction in cover/shelter
- foraging potential
- safe passage conditions due to impact hammer activities

However, no measurable, long term permanent impacts to waters, substrates, food production and availability, cover conditions, or vegetation is anticipated; no long-term, permanent impacts to EFH for Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon species are anticipated that would reduce the quality of habitat to an extent that individual fish would be impacted. This project would require consultation with NMFS for possible impacts to EFH for Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon species under the MSA.

Potential adverse effects to elements of Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon EFH resulting from the proposed action are considered minor and transient, resulting in no long term impacts. Therefore, no avoidance and minimization measures would be implemented other than the standard measures identified in Section 1.5.

Compensatory mitigation would not be required for Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon EFH because potential impacts resulting from the proposed action are anticipated to be minor and transient, resulting in no long-term impacts.

Potential impacts to Coastal Pelagic, Pacific Coast Groundfish, and Pacific Coast Salmon EFH would be avoided or minimized through inclusion of standard measures designed to maintain the integrity of the aquatic habitat. Impacts from this project are considered minor and transient, resulting in no long-term impacts; therefore, no cumulative impacts are expected.

Discussion of Central California Coast ESU of Coho Salmon

Construction would take place during the summer months when fish abundance is at its lowest; however, several activities associated with the proposed project could negatively impact coho salmon occupying Pudding Creek Estuary during this period. These include noise and visual disturbance and water quality impacts, as described below. Minor vegetation removal, noise and visual disturbance, and/or water quality impacts could also temporarily affect critical habitat for coho salmon.

Noise and Visual Disturbance

Construction and demolition activities at Pudding Creek Bridge may cause behavioral responses to stress associated with noise and visual disturbance of juvenile coho present during the in-stream work period of June 15 to October 15. Physical changes to the water column caused by shading, use of artificial light at night, and/or workers walking near the channels could disrupt feeding, delay migration, or flush fish from suitable habitat, potentially making them more vulnerable to predation.

The potential exists for coho salmon to be injured or killed by exposure to underwater noise and vibratory forces generated by construction-related pile driving and hoe ram (i.e., impact hammer) activity if unabated. Fish demonstrate a broad range of sensitivities to hydroacoustic sound exposure based on species and life history. Outside of species-specific variation in sensitivity, several sources indicate that fish with swim bladders, such as salmonids (including coho salmon), are typically much more sensitive to hydroacoustic sound than fish lacking swim bladders. This is because the primary impact to fish is compressive barotrauma, which is caused by sound waves striking the gas-filled swim bladder, causing it to rapidly compress and decompress. Swim bladders are often used for sensing vibration in the environment and supplemental gas exchange. Because of this, they tend to have dense vascular networks, making them particularly vulnerable to injury from sound-induced barotrauma.

Caltrans evaluated potential underwater noise levels generated by planned construction activities and determined the sound generated from pile driving at Abutment 9 and hoe ram demolition at Abutment 1 and Abutment 9 would not be expected to exceed currently

adopted hydroacoustic noise thresholds for peak sound pressure levels (SPL) known to cause injury to fish. The Fisheries Hydroacoustic Working Group (FHWG) established injury and behavior thresholds for fish in a white paper titled *Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities*. The agreed upon FHWG criteria for injury to fish from impulsive sound waves, such as that caused by impact hammers, occurs at sound pressure levels of 206 decibels (dB) peak, and 187-dB cumulative sound exposure level (SEL) for fish weighing more than two grams. For fish weighing less than two grams, the criterion for the cumulative SEL is 183 dB (FHWG 2008). Coho weighing less than two grams are not expected to be present in the BSA during construction; therefore, the 187-dB cumulative SEL would be the threshold utilized in this analysis. The *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish* (Guidance) (FHWG 2008) was used to evaluate potential underwater noise levels generated during pile driving. The Guidance provides estimated sound levels for various types of piles (e.g., H-piles, concrete piles) and methods of installation (e.g., impact driving, vibrating hammer).

Pile driving activities would occur on land at Abutment 9 on the north side of Pudding Creek, approximately 38 to 44 feet (12-13 meters) from the OHWM. Piles would be driven using an impact pile driver. Due to the variability in site conditions, it is difficult to accurately predict underwater noise levels associated with pile driving operations that occur on shorelines near water. Based on inference from data collected during previous pile driving projects as analyzed in the Hydroacoustic Assessment (Caltrans 2019), peak sound pressure levels would be below the 206-dB threshold and single strike SELs would be below 150 dB. The 150-dB root mean square (RMS) behavioral zone for fish would extend approximately 560 feet from the pile driving activity for the northern abutment. Figure 3 shows the approximate distance to the 150-dB RMS behavioral zone for impact pile driving, which covers 7.5 acres of the estimated 17 acres of habitat.

Impact hammer construction activities that produce impulsive sound waves may potentially elicit behavioral responses in fish (i.e., above 150 dB) during the work period of June 15 and October 15. Fish may display a startle response to the first few strikes of a pile or hoe ram. The startle response of a fish is a reaction similar to movements to escape from a predator (Hastings and Popper, 2005). A fish that displays a startle response may not necessarily be injured but is displaying a behavior that suggests it perceives a stimulus indicating potential danger in its immediate environment. These behavioral changes could include avoidance of the source of noise, impeding or discouraging free movement within the aquatic action area, preventing individuals from exploiting preferred habitat or exposing individuals to less favorable conditions. However, fish do not display a startle response every time they are exposed to a strong hydroacoustic stimulus (Caltrans 2015). The behavior effect zone

encompasses approximately 7.5 acres of the estimated 17 acres of habitat, which comprises 44% of the estuary available to coho salmon.

Impact hammer activities would only occur during daylight hours at one abutment at a time, thus providing the opportunity for fish to disperse away from disturbance. The hoe ram would be used for a minimum of 2 hours and a maximum of 8 hours for up to 4 days at each abutment, and the pile driver would be used for a minimum of 8 hours and a maximum of 10 hours for up to 4 days. Therefore, potential behavioral effects to coho salmon would be short term and of low intensity.

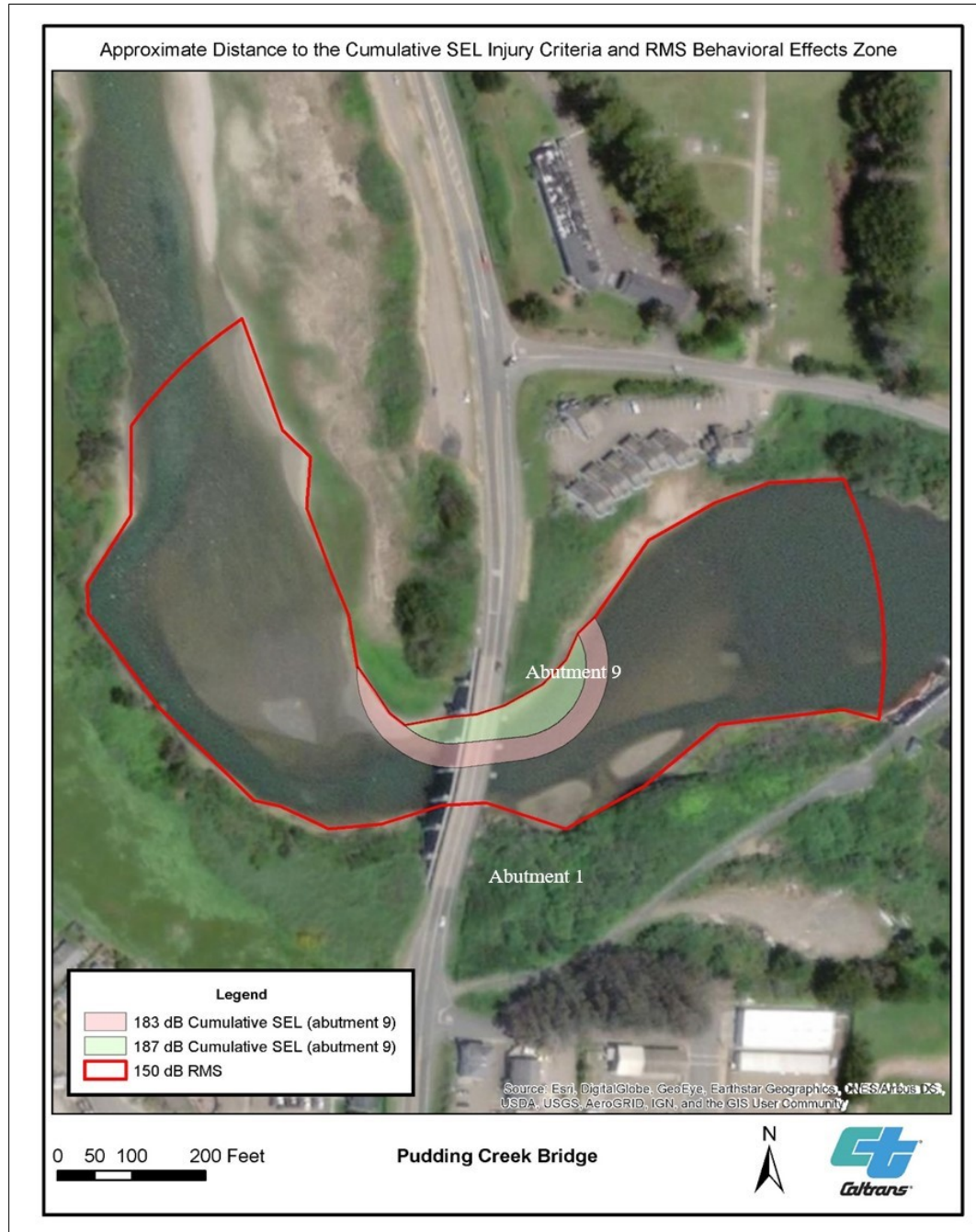


Figure 3. Extent of Various Noise Impact Thresholds During Impact Hammer Activity at Pudding Creek Bridge

A hoe ram impact hammer mounted on an excavator at Abutment 1 and Abutment 9 would be used to remove the foundation around the base of the spread footing of this structure. Hoe ram-generated noise at the south abutment is unlikely to result in exceedance of the 187-dB cumulative SEL injury threshold within the BSA. Vibrations from the hoe ram could be transmitted into the ground and surrounding water. The amount of noise transmitted into the water is dependent on the transmission path of the vibrations, and that is compounded by the cumulative noise of the operation, which depends on the duration of the operation. Hoe ram demolition activity at the base of the abutments would occur during daylight hours and would take between two hours (best case scenario) and eight hours (worst case scenario) per day over a four-day period to complete at each abutment. The distance between Pudding Creek and the base of Abutment 1 to the water's edge is estimated to be 71 to 76 feet. The distance between Pudding Creek and the base of Abutment 9 is the same as previously described for pile driving. There is potential for elevated noise levels; however, it is difficult to estimate due to few known examples of underwater noise impacts associated with hoe ram demolition on land (Caltrans 2015). Based on site-specific factors, it is anticipated that potential impacts from hoe ram activity at Pudding Creek would be less than or equal to the impacts from pile driving activity (R. Pommerenck [Caltrans], personal comm., November 15, 2019).

As mentioned above in the analysis of pile driving on fish, habitat at Pudding Creek consists of a sandy/silty-bottomed substrate with an underlying layer of shallow bedrock. Adults and smolts may use this area for migration, feeding, and saltwater acclimatization. Hoe ram activity would be restricted to the dry season (June 15 to October 15) and would not coincide with adult coho migration (i.e., late October to April). Therefore, noise and vibration from hoe ram activity would not affect upstream migration to spawning grounds or lower reproductive potential. Smolts could be present in the estuary during hoe ram demolition activity and may respond negatively to hoe ram noise if within the behavioral impact zone (isopleth) for hoe ramming—nearby the operations at the abutments.

Groundborne noise can be unpredictable and varies from site to site because it is dependent on on-site conditions such as soil saturation and soil composition. Because of the uncertainties, to identify when abatement is necessary, noise levels would be monitored by a trained hydroacoustic specialist during all operations that may potentially produce impulsive sound waves. To stay below the cumulative 187-dB SEL injury threshold, a daily construction time limit (as determined by monitoring) may be required and would be included in the Hydroacoustic Monitoring Plan. Hydroacoustic monitoring would ensure impact hammer activities cease if the measured sound pressure levels were to approach the 187-dB cumulative SEL threshold.

If coho salmon are present in the project area, potential impacts to this species from noise and visual disturbance would likely be minor and short term, and unlikely to result in injury or mortality. Adverse effects to coho salmon and other fish from general (non-impulsive) construction noise and visual disturbance would be minimized through implementation of the standard measures identified in Section 1.5, such as installing temporary silt fencing as a barrier just above the OHWM to minimize and limit access to the estuary. 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 construction footprint. 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

Water quality impacts to coho salmon habitat may result from construction-related activities that increase the potential for erosion and discharge of sediments and contaminants to the estuary. Construction-related activities would temporarily disturb upland soils. These activities may increase discharges of suspended solids and turbidity into the Pudding Creek Estuary upstream and/or downstream of the project site through stormwater runoff from disturbed or placed soils within the project footprint, or from soil stockpiles and staging areas. This would potentially result in mobilization and transport of suspended solids if stormwater was not properly contained on site and treated. Suspended solids and turbidity can have numerous adverse effects on coho salmon, including injury or death. Some sediment can be expected to enter the estuary waters at the beginning of the rainy season.

Earth-moving machinery (used to disturb and transport fill, grade some areas of the project site, and construct work pads) also may leak contaminant fluids that could then be discharged to receiving waterbodies in stormwater runoff. These materials may be directly toxic to fish and other aquatic organisms. However, the potential for this effect is low because the equipment would not be operated in water. In addition, Caltrans would implement standard measures and BMPs to contain any spills or contaminants.

Habitat Changes

Wetland Fill Encroachment and New Impervious Surface

While there would be an estimated 0.29-acre increase in impervious surface at Pudding Creek, changes in peak stormwater runoff rates would be offset through permanent design measures, such as directing flows through vegetated bioswales. The location of the bioswales would be determined in the next phase of the project in coordination with permitting agencies. Equipment-based ground disturbance would be conducted within the upland areas of the project ESL above the OHWM of the estuary or creek. Any potential effects to salmonids as a result of new impervious surface and new culvert alignments would be discountable.

Wetland and Riparian Habitat Removal

No wetland impacts are anticipated as part of construction activities at Pudding Creek. However, approximately 0.260 acre of arroyo willow riparian vegetation would be temporarily disturbed on the south bank of the river (upslope above the OHWM) for construction of the access path, grading the banks, and adding new pavement. Removal of riparian vegetation has been associated with reduced channel shading, organic material (allochthonous) inputs and increased water temperature; thus, potentially affecting water chemistry by decreasing the concentration of dissolved oxygen (DO). However, due to the short stature of the existing vegetation and the distance from the creek, vegetation on the upper banks currently does not provide shading or an overhanging canopy. Vegetation clearing on the upper banks is also not likely to affect other essential functions of the adjacent riparian zone, such as nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter. Additionally, all this habitat would be restored to pre-existing conditions post construction.

Permanent impacts to riparian habitat of 0.004 acre would occur under Abutment 1 of the Pudding Creek Bridge. This impact would result from widening the abutment and adding new pavement. The project would increase the width of the bridge deck approximately 8 to 12 feet on each side; thus, would minimally increase shading of the Pudding Creek estuary. While increased shading may result in cooler water temperatures in the immediate vicinity of the bridge, because of generally warmer temperatures in the estuary, this slight decrease in temperature could be beneficial, especially during winter when the species prefers colder water temperatures.

The bridge work is expected to have minimal impacts on the functional values of existing riparian and wetland habitat for coho salmon. The project would not result in long term changes to the water chemistry or physical characteristics (e.g., substrate, flow, shading) of the estuary after construction is complete. Therefore, no long-term impacts on fish or other aquatic organisms are anticipated.

By design the project would avoid and minimize potential effects to coho salmon. No piles or other structures would be placed in the creek and no in-water work would occur; thus, the project would not directly affect coho salmon habitat. Pile driving at Pudding Creek involves a small number of small-sized piles and pile driving is anticipated to be short in duration. Hoe ram demolition at each abutment at Pudding Creek is also expected to be short in duration, and noise is anticipated to attenuate as it travels through bedrock to reach aquatic fish habitat. Additionally, to avoid impacts to out-migrating smolts, the following standard measures would be adhered to:

- Construction activities with potential noise and vibration effects (such as pile driving and hoe ram demolition) would occur during the dry season between June 15 and October 15. This also happens to be when the chance of coho salmon being present in the estuary is lowest since it avoids peak migration periods.
- A Hydroacoustic Monitoring Plan would be prepared by the contractor prior to construction which would address the frequency of monitoring, positions that hydrophones would be deployed, and techniques for gathering and analyzing acoustic data, quality control measures, and reporting activities. Acoustic monitoring would be performed onsite by a qualified hydroacoustic specialist supplied by the contractor. Regular decibel readings would be collected and documented during all pile driving activities to ensure noise thresholds for injury to fish are not reached.
- If construction lighting is used within one hour before dusk and during nighttime hours, lights on work areas would be focused on the work area to minimize lighting of listed-species habitat.

Project actions at Pudding Creek Bridge are not likely to adversely affect CCC ESU coho salmon with incorporation of the standard resource protection measures identified above and in Section 1.5, therefore no compensatory mitigation would be necessary.

Caltrans is proposing to replace or widen other bridges in the Fort Bragg and the Mendocino region, including widening Hare Creek Bridge. Hare Creek Bridge is approximately 2.5 miles south of Pudding Creek Bridge on SR 1. This project is currently in the engineering design phase and is scheduled for construction between 2022 and 2023.

Adverse effects to coho salmon and its critical habitat present at Pudding Creek would be avoided through inclusion of standard measures designed to protect sensitive aquatic resources. These other bridge projects would incorporate similar protective measures, as these measures are generally required by permitting agencies and would be subject to separate federal Section 7 consultation. Impacts to coho salmon from any of these projects would not be expected to result in population-level effects to individuals or adverse effects to designated critical habitat given the scale of the combined projects and the standard measures incorporated by design to minimize project impacts.

Discussion of Winter-run Northern California DPS of Steelhead Trout

Potential impacts to NC DPS of steelhead trout at Pudding Creek are the same as those described for CCC ESU of coho salmon at Pudding Creek and include:

- temporary impairment of habitat quality due to avoiding areas of heightened underwater noise from impact hammer activities,
- temporary impairment of water quality due to short term and localized increases in turbidity during construction.
- minor and temporary loss of cover/shelter, foraging potential, and safe passage conditions due to noise and visual disturbance,
- and a small temporal and permanent loss of vegetation that provides riparian and wetland function.

Avoidance and minimization efforts for NC DPS of steelhead trout are the same as those identified for CCC ESU coho salmon. Project actions are not likely to adversely affect NC DPS of steelhead trout; therefore, no compensatory mitigation would be required.

As described in the CCC ESU coho salmon cumulative impacts section, adverse effects to Northern California DPS of steelhead trout and its critical habitat present at Pudding Creek would be avoided or minimized through inclusion of standard measures designed to protect sensitive aquatic resources. Other bridge projects in the region would incorporate similar protective measures, as these measures are generally required by permitting agencies. Impacts to steelhead from any of these projects would not be expected to result in

population-level effects to individuals or adverse effects to designated critical habitat given the scale of the combined projects and the standard measures incorporated by design to minimize project effects. Therefore, the project would not be expected to result in cumulative impacts to NC DPS of steelhead trout.

Discussion of Tidewater Goby

Potential impacts to tidewater goby—particularly potential changes to water quality—are similar to those of CCC ESU of coho salmon at Pudding Creek and include:

- temporary impairment of habitat quality due to avoiding areas of heightened underwater noise from impact hammer activities
- temporary impairment of water quality due to short term and localized increases in sedimentation and turbidity during construction

As described in the prior section, the scale of these impacts is small, resulting in no long-term measurable decrease in the quality of the critical habitat. No measurable, long-term adverse changes to waters, substrates, food production and availability is expected. Conditions unique to the biology and ecology of TWG, which could influence extent or type of project impacts on salmonids at Pudding Creek not addressed in the prior section, are described in further detail below.

For purposes of this analysis, the effects of the proposed project on gobies in the BSA are expressed in terms of the project's impacts on:

- Elements of the species' habitat, including critical habitat, that could affect fish through modification of the spawning, rearing, and movement function of their habitat, and an unknown number of tidewater gobies within that estimated area of habitat.
- Potential effects of the proposed project on TWG include construction-related effects such as potential changes in water quality (turbidity, suspended solids, and contaminants) and direct lethality or injury related to impact hammer activity. Other effects related to operations or maintenance of the bridge include potential alterations in water quality such as turbidity, suspended solids, contaminants, and potential changes in water temperature and DO.

Noise and Visual Disturbance

Fish demonstrate a broad range of sensitivities to hydroacoustic sound exposure based on species and life history. Swim bladders are often used for sensing vibration in the environment as well as supplemental gas exchange. Like most other goby species, tidewater gobies lack a swim bladder and exhibit a benthic habit, resting on the bottom in between short swimming bursts (Swift et al., 1989). Although no data exist on the specific effects of impulsive sound waves on tidewater gobies, studies of impacts to other species indicate there is far less damage to fishes lacking swim bladders than to species (such as salmonids) that do have such air chambers (Goertner et al., 1994). Because of this, the 183-dB limit for fish or age groups of the goby's size (under 2 grams) is likely to be highly conservative. No direct mortality of adult tidewater gobies is expected from impulsive sound waves generated by pile driving activities, even if they were to exceed the 183-dB limit. In a recent overview of the impacts of anthropogenic sounds on fish, thresholds for fish without swim bladders are given as 219-dB cumulative SELs before mortality is expected (Popper and Hawkins, 2019).

Noise levels that exceed the 150-dB cumulative SEL behavioral threshold may result in temporary changes in TWG behavior. Most behavioral changes would be similar to other fish, such as salmonids. However, the burrow and its maintenance are key to its survival, and adult males may abandon their burrows. Burrow abandonment could lead to failure to mate, or reduced egg hatching success, or increased mortality of newly hatched fry if sound waves result in fish movement while tidewater gobies are engaged in reproduction or parental care (Swift et al., 1989). No data exists on the behavioral effects of impulsive sound waves on tidewater gobies to assess the degree of risk posed by this impact. Because of this, impacts to breeding success associated with behavioral changes in adult fish cannot be ruled out. Tidewater gobies are likely to be present in the estuary during pile driving and may respond negatively to pile driving noise if they are within the behavior impact zone (isopleth). Negative responses may include startle and avoidance of the project area. While tidewater gobies may experience behavioral effects because of impact hammer noise, disturbance would be minimal and short term.

Noise levels may also result in impacts to TWG eggs and larvae that may be present in the action area. Very little information exists regarding the effects of impulsive sound waves on fish eggs and larvae and is expected to vary by species (Hawkins et al., 2015). One study, which focused on the impacts of underwater air guns on flatfish, showed no detectable impacts at levels above 187-dB cumulative SEL, suggesting that eggs and larvae may be at least as resistant to impacts as adult fish (Bolle et al., 2012). No data exists on the potential behavioral, developmental, injury or mortality effects of impulsive sound waves on tidewater

goby eggs and larvae, and there is no way to assess the degree of risk posed by this impact. There is still the potential for impact hammer activity to result in burrow collapse. The adult males guarding the burrow would have time to escape, as the collapse would occur over many strikes. However, the eggs and larvae would not, and could be smothered from burrow collapse. Because of this, impacts to eggs and larvae cannot be ruled out.

Water Quality

Tidewater goby potentially occurring in Pudding Creek Estuary would be at risk of exposure to construction-related water quality effects. Water quality impacts may result from construction-related activities that increase the potential for erosion and discharge of sediments and contaminants to the estuary and temporarily disturb upland soils. These activities may increase discharges of suspended solids and turbidity into Pudding Creek Estuary upstream and/or downstream of the project site (depending on tidal action and connectivity with the ocean) through stormwater runoff from disturbed or placed soils within the project footprint, or from soil stockpiles and staging areas. This would potentially result in mobilization and transport of suspended solids if stormwater was not properly contained on site and treated. Suspended solids and turbidity can have numerous adverse effects on TWG, including injury, death, lowered breeding success (from burrow smothering), or lowered foraging success (from impacts on benthic macroinvertebrates). The magnitude of the effects of suspended solids and turbidity on TWG would depend on the sediment or turbidity concentration, duration of exposure, and the tidewater goby life stages present at the time of exposure. While some sediment can be expected to enter the estuary waters at the beginning of the rainy season, this would not likely have any adverse population-level effect on goby due to measures incorporated to stabilize banks and control sediment during construction and the revegetation efforts mentioned in Section 1.5.

Earth-moving machinery used to disturb and transport fill, grade some areas of the project site, and construct work pads also may leak oil, gasoline, and other petroleum-based fluids that can then be discharged to receiving waterbodies in stormwater runoff. These materials may be directly toxic to fish and other aquatic organisms. Tidewater gobies may be more susceptible than other fish species to contaminated soils because they are more benthic oriented than other species, therefore may come into direct contact with contaminated sediments by ingesting them along with benthic food organisms. However, because the equipment would not be operated within the OHWM in water, the potential for this effect is low. With incorporation of various standard measures to stabilize banks and control sediment during construction and the revegetation efforts mentioned in Section 1.5, effects

on water quality due to spills or contaminants would be discountable and would not be expected to have any adverse individual or population-level effect on goby.

Habitat Changes

Wetland Fill Encroachment and New Impervious Surface

While there would be an estimated 0.29-acre increase in impervious surface at Pudding Creek, changes in peak stormwater runoff rates would be offset through permanent design measures, such as directing flows through vegetated bioswales to the southeast and northwest of the bridge.

There would be no decrease in capacity of existing drainage systems and no substantial change in existing drainage patterns or encroachment of channel flow. Any potential effects to tidewater goby as a result of new impervious surface and new culvert alignments would be discountable.

Wetland and Riparian Habitat Removal

The minimally increased shading caused by proposed bridge widening is not expected to have any adverse temperature- or DO-related individual or population-level effects on TWG. Increased shading of the Pudding Creek estuary may result in cooler water temperatures in the immediate vicinity of the bridge; however, because of generally warmer temperatures in the estuary, this slight decrease in temperature could be beneficial to TWG, especially during winter, when the species prefers colder water temperatures.

In summary, the proposed project ***may affect, and is likely to adversely affect*** tidewater goby. The project ***may affect, but is not likely to adversely affect*** designated critical habitat for tidewater goby. Minor vegetation removal, visual disturbance, and/or water quality impacts due to sediments or spills could temporarily affect designated critical habitat. Injury or mortality of goby could result from impact hammer activity at the bridge site. Incidental take of tidewater goby may occur as a result of vibrations from impact hammer activity that could collapse burrows that house males and juvenile goby individuals; however, the anticipated level of take is low. An Incidental Take Statement for tidewater goby would be determined and issued by USFWS in the Biological Opinion (BO). Through preliminary technical assistance with USFWS, the level of take is not likely to result in jeopardy to the tidewater goby population, as stated during meetings with USFWS (Greg Schmidt, USFWS, pers. comm. 2019). With implementation of the standard measures presented in Section 1.5, as well as the conservation measures as proposed in the BO, temporary and localized effects

and indirect, long-term effects are not expected to measurably affect growth, survival, or reproductive success of tidewater goby.

By design, the project would avoid and minimize potential effects to tidewater goby, yet not all impacts can be avoided. After receiving the Biological Assessment and assessing the level of incidental take of tidewater goby, the USFWS will issue a Biological Opinion (BO), which will include specific measures to avoid and minimize harm to the tidewater goby during construction. Potential impacts to TWG associated with noise and vibration disturbance would be avoided or minimized through inclusion of specific measures provided by the USFWS in the BO and standard measures as described in Section 1.5 that are designed to protect sensitive aquatic resources. These measures include minimizing disturbed areas, utilizing erosion control BMPs during and after construction, adapting existing drainage patterns to direct flows through vegetated bioswales for biofiltration treatment, on-site restoration of riparian vegetation, hydroacoustic monitoring and abatement during impact hammer activity, and contractor environmental training prior to commencing work.

Due to the avoidance of aquatic and adjacent emergent wetland habitat and a minimal potential for project-related effects to Pudding Creek, no compensatory mitigation would be required because the impacts to its designated critical habitat would be minimal.

As discussed in prior sections, Caltrans is proposing to replace or widen other bridges in the Fort Bragg and the Mendocino region. Impacts to tidewater goby from any of these projects would not be expected to result in population-level effects to tidewater goby or its critical habitat. These projects would also be subject to separate federal Section 7 consultation.

Discussion of Behren's Silverspot Butterfly and Lotis Blue Butterfly

Construction activities within the ESL at Pudding Creek Bridge are not anticipated to affect Behren's Silverspot Butterfly (BSSB), Lotis Blue Butterfly (LBB), or their preferred habitat since no suitable habitat is present at this bridge location. As BSSB and LBB and their preferred habitat are not anticipated to be adversely affected by the project, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Western Bumblebee

Most ground disturbance for this project would occur in areas routinely disturbed by mowing and road grading. The areas planned for paving that contain suitable habitat are unlikely to have nesting colonies of Western bumblebee. However, it may be necessary to assess absence or presence during the spring prior to construction to confirm no impacts to Western

bumblebee due to proposed activities. The CDFW avoidance and minimization guidance is to search for and note signs of colonies during preconstruction survey or floristic surveys at the appropriate time of year (Jamie Jackson [CDFW], personal comm., July 17, 2019).

The proposed project is unlikely to impact Western bumblebee. Within the ESL, at the appropriate time of year per CDFW guidance, a qualified biologist would search for and note signs of colonies during preconstruction or floristic surveys. If any signs of Western bumblebee colonies are found during surveys, Caltrans would coordinate with CDFW to develop appropriate conservation measures.

As impacts to Western bumblebee are not anticipated, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Point Arena Mountain Beaver

Given that the project BSA is outside the range for this species, no Point Arena Mountain Beaver (PAMB) are expected to be present in the ESL. As the project would have no effect on PAMB or PAMB critical habitat, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of West Coast DPS of Fisher—Northern California ESU

Given that the project BSA is outside the range for this species, no fishers are expected to be present in the ESL. As the project would have no effect on the West Coast DPS of fisher, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Bat Species

The proposed project could temporarily displace suitable day roosting habitat and inhibit foraging during active construction. Containment measures required for protection of water quality during construction of the bridges could potentially entrap and kill bats that may roost in the bridge.

Permanent, recessed lights may be incorporated on the inward side of the bridge rails. While lighting could potentially disrupt bat roosting, foraging, and flight paths, lighting incorporated into the Pudding Creek Bridge would be soft lighting, low to the ground, and

would only illuminate the sidewalks. The lights would not illuminate potential bat roosts, roost access sites, or flight paths.

The following additional measures would be included in the project to avoid potential impacts to bats:

- If any work on the Pudding Creek Bridge occurs between March 1 and August 31, the bridge must be surveyed by a qualified contractor-supplied biologist no less than 7 days and no more than 14 days prior to the beginning of construction to determine if day roosting bats are present.
- If day roosting bats are observed, bat exclusion measures may be installed between March 1 and April 15 or between Sept 15 and the end of October as long as night temperatures remain above 50°F (10°C). If bridge work occurs outside the May to August bat maternity season, then no protective measures are required.
- Most of the work would occur during the daytime, which would avoid impacts to night roosting bats. Night work is only anticipated to occur for a maximum of four nights to move the pile driving operation (hammer, work pad) between quadrants of the bridge or for concrete pours. Movement of this equipment is expected to cause heavy vibrations on the bridge; however, the vibrations are not expected to exceed those of semi-trucks that regularly drive over Pudding Creek Bridge. Night lighting would likely be needed at the site for breakdown and setup at each respective quadrant. Lighting would be focused on the work area, so as not to disrupt the flight path of any bats through the project area.
- If construction lighting is used within one hour before dusk and during nighttime hours, lights on work areas would be focused on the work area to minimize lighting to listed-species habitat.
- Recessed soft lighting in the bridge rail would be used to not disturb wildlife.

Since the project would not permanently impact bat habitat, result in take of individual bats, or substantially affect roosting and foraging behavior, no compensatory mitigation would be required. Substantial impacts to roosting bats are not anticipated; therefore, no cumulative impacts are expected.

Discussion of Marine Mammals

This action would have no effect on the federally and state listed marine mammals since work on the banks of Pudding Creek would be conducted at low tide during the dry season when water is too shallow for marine mammals to enter the channel and be present in the creek bed. Because the BSA within the Pudding Creek Estuary lacks suitable foraging habitat, construction activities in the ESL are not expected to adversely affect marine mammals. Since marine mammals are not expected to be adversely affected by the proposed work, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Leatherback Sea Turtle, East Pacific DPS of Green Sea Turtle, and Olive Ridley Sea Turtle

Because the project BSA lacks suitable nesting habitat and is outside the range for these sea turtle species, construction activities in the ESL are not expected to adversely affect leatherback sea turtle, East Pacific DPS of green sea turtle, or olive ridley sea turtle. As the proposed project would not adversely affect leatherback sea turtle, East Pacific DPS of green sea turtle, or olive ridley sea turtle, no species-specific avoidance and minimization measures would be implemented, no compensatory mitigation would be required, and no cumulative impacts would be anticipated.

Discussion of Environmental Evaluation Question 2.6b—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 CDFW or USFWS?***

Construction activities associated with vegetation removal and fill due to widening the bridge would have both temporary and permanent impacts to riparian vegetation. Permanent impacts refer to impacts that permanently remove a resource (e.g., paving riparian habitat). Temporary impacts refer to those areas that would be restored on-site and in-kind upon completion of construction (e.g., a temporary road that is created through a riparian area for construction access). If a temporary impact continues for an extended period, the temporary impact might be considered a permanent impact by the administering agencies.

The proposed project would temporarily impact approximately 0.260 acre and permanently impact approximately 0.004 acre of upland riparian vegetation located upslope above the OHWM. Vegetation removal to construct the work pads and access routes would result in

temporary impacts. Permanent impacts to vegetation as a result of widening the roadway and abutments would be minimal because most of the area where these activities would occur is on previously disturbed areas and bare ground. Native arroyo willow shrub habitat temporarily impacted by project construction activities would be restored once construction is complete; however, depending on the length of construction or time it takes to restore these areas, the temporal loss of riparian function may be considered “permanent” for establishing revegetation ratios. Riparian habitat temporarily disturbed for access and construction would be stabilized and revegetated at the completion of construction to minimize erosion and restore functions and values of the habitat.

Project impacts to riparian vegetation would be offset through restoration of the project area to pre-project conditions. Areas disturbed for access and construction would be stabilized and revegetated at the completion of construction to minimize erosion and restore functions and values of the habitat. A Revegetation Plan would be developed during permit consultation with the regulatory agencies.

The efforts to offset both permanent and temporary project impacts to riparian habitat would incorporate the standard measures identified in Section 1.5. These standard measures would ensure applicable BMPs are used to stabilize all bare soil areas over both the short and long term and to minimize adverse effects to water quality, aquatic habitat, and aquatic species. BMPs include treatment controls, soil stabilization practices, and weather-appropriate scheduling. High visibility fencing would be used to limit ground disturbance to only within the project footprint, and demolition and debris containment plans would be implemented to ensure construction debris does not enter adjacent waters. Any debris and sediment would be contained and disposed appropriately off-site.

Discussion of Environmental Evaluation Question 2.6c—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?

The proposed project would have no temporary or permanent impacts to state or federal jurisdictional waters. There are no project impacts to potentially jurisdictional wetlands PC-EW1 and PC-EW2, as both are downslope of the OHWM and no construction activities would occur below the OHWM. All activities above the OHWM would include standard BMPs to protect water quality.

There would be no project impacts to the Pacific silverweed marsh SNC wetlands, as both features are downslope of the OHWM and no construction activities would occur below the OHWM. All activities above the OHWM would include standard BMPs to avoid any indirect sedimentation impacts to these wetlands. Since Pacific silverweed marsh wetland would not be impacted by the proposed work, no resource-specific avoidance and minimization measures would be implemented. Standard BMPs would be implemented to prevent erosion that may occur because of vegetation removal. During construction, native plant communities beyond the limits of work would be protected with high visibility ESA fencing.

Impacts to Pacific silverweed marsh wetlands are not anticipated; therefore, no compensatory mitigation would be required. Given the project would not impact Pacific silverweed marsh wetlands, cumulative impacts are not anticipated.

Mitigation Measures

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

2.5. Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				✓
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 Historic Property Survey Report dated October 2016. Impacts to cultural resources are not anticipated due to an Environmentally Sensitive Area Action Plan prepared for the project.

2.6. Energy

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?				✓
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 Traffic Noise, Air Quality, Energy and Greenhouse Gas memo dated December 13, 2019. Potential impacts are not anticipated because the proposed project would not increase capacity when compared to the no-build alternative. The project may contribute to roadway improvement that would improve vehicles’ fuel economies and thus affect project energy consumption.

Proposed project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. Energy use associated with the proposed project construction is estimated to result in the total short-term consumption of 8,100 gallons from diesel-powered equipment and 5,200 gallons from gasoline-powered equipment. This represents a small demand on local and regional fuel supplies that would be easily accommodated, and this demand would cease once construction is complete.

Moreover, construction-related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy. Therefore, the project would not result in an inefficient, wasteful, and unnecessary consumption of energy.

2.7. Geology and Soils

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				✓
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: ii) Strong seismic ground shaking?				✓
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iii) Seismic-related ground failure, including liquefaction?				✓
Would the project: a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: iv) Landslides?				✓
Would the project: b) Result in substantial soil erosion or the loss of topsoil?				✓

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?				✓
Would the project: e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓
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.

2.8. Greenhouse Gas Emissions

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
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. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), and various hydrofluorocarbons (HFCs). CO₂ is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO₂.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change.

Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce 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.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

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

The U.S. EPA, in conjunction with the National Highway Traffic Safety Administration (NHTSA), is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence GHG emissions.

State

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

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

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (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 ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by the year 2020. 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.

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires 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 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 CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMT CO_2e).² Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016: Codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

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

² GHGs differ in how much heat each trap in the atmosphere (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 GWP of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2 .

regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.”

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

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 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.

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

Environmental Setting

The proposed project is in a rural area, with a primarily natural-resources based agricultural and tourism economy. State Route 1 is the main transportation route to and through the area for both passenger and commercial vehicles. The Mendocino Council of Governments (MCOG) guides transportation development in the project area. The Mendocino County General Plan Resource Management Element addresses air quality and emissions standards in the project area (Mendocino County 2009).

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

National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change (Figure 4). The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO₂, CH₄, N₂O, HFCs, perfluorocarbons, SF₆, and nitrogen trifluoride. It also accounts for emissions of CO₂ that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store CO₂ (carbon sequestration). The 1990–2016 inventory found that of 6,511 MMTCO₂e GHG emissions in 2016, 81% consist of CO₂, 10% are CH₄, and 6% are N₂O; the balance consists of fluorinated gases (U.S. EPA 2018). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

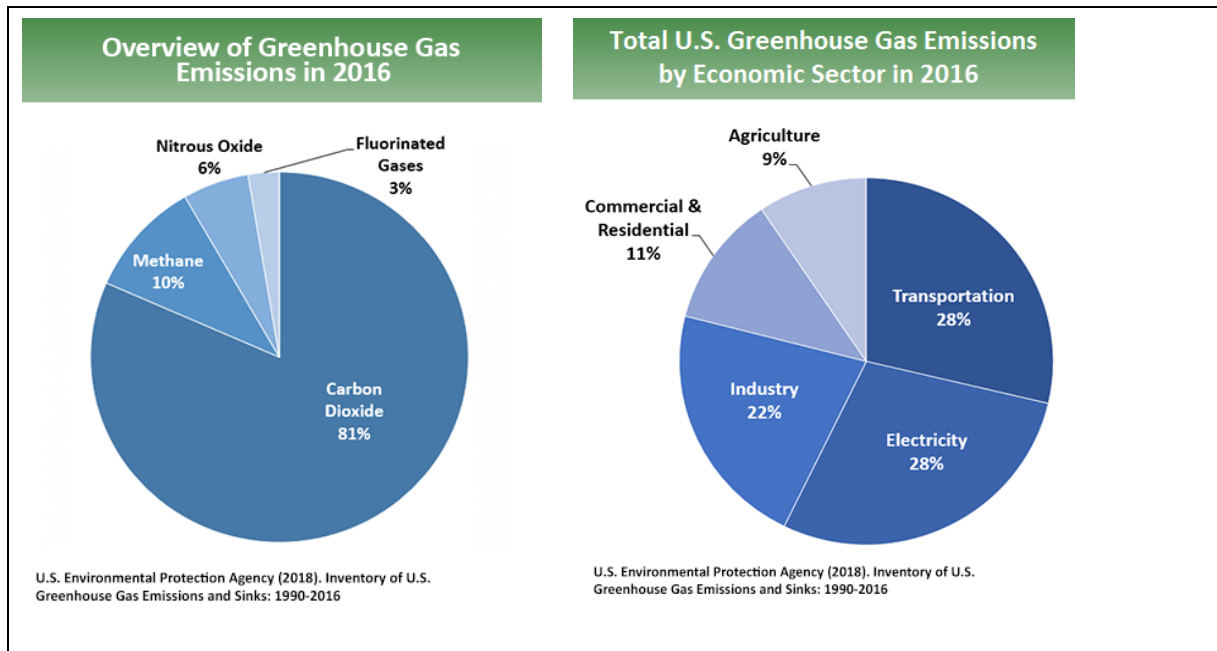


Figure 4. U.S. 2016 Greenhouse Gas Emissions

State GHG Inventory

CARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year (Figure 5) (CARB 2019a). It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 MMTCO₂e for 2017, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (Figure 6) (CARB 2019b).

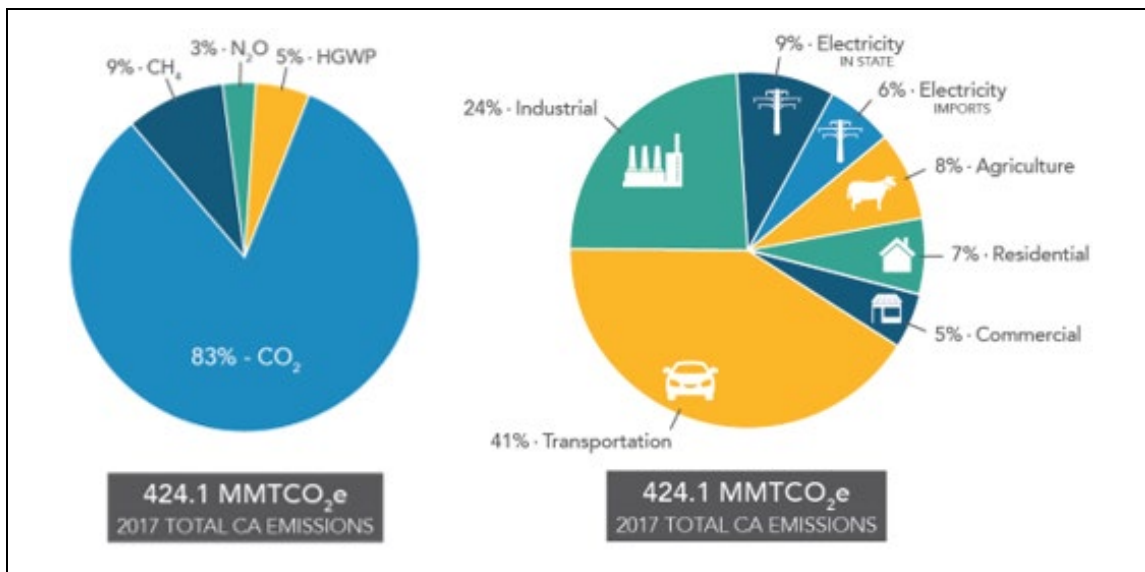


Figure 5. California 2017 GHG Emissions (Source CARB 2019a)

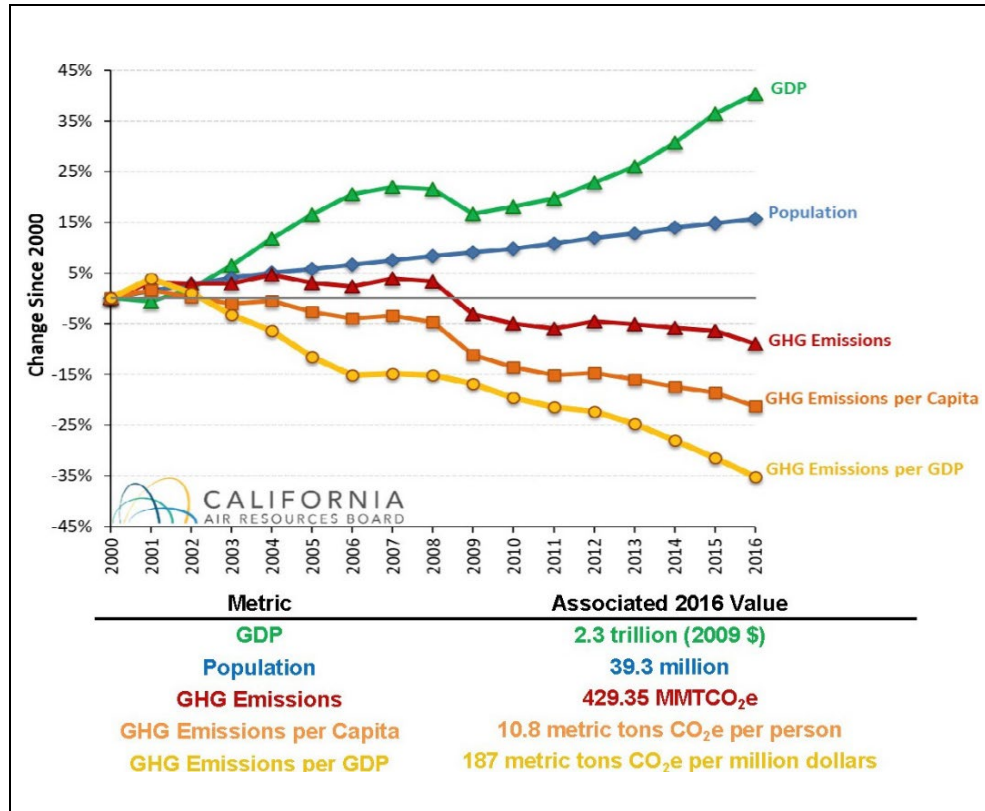


Figure 6. Change in California GDP, Population, and GHG Emissions Since 2000

(Source: CARB 2019b)

AB 32 required 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. 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 AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

Regional Plans

CARB sets regional targets for California's 18 MPOs to use in their RTP/SCSs to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. Mendocino County is not an MPO and does not have a GHG reduction goal set by CARB. The proposed project is included in the RTP for Mendocino County.

Project Analysis

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

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Public 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 widen the bridge to bring it to current design standards and improve pedestrian and bicycle facilities on the structure. This project will not increase the vehicle capacity of the roadway. 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 SR 1, no increase in vehicle miles traveled (VMT) would occur as a result of project implementation. Rather, the project would improve safety and access for non-motorized travel. 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, on-site construction equipment, and traffic delays due to construction. These emissions would be produced at

different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

The Caltrans Construction Emission Tool (CAL-CET2018 version 1.2) was used to estimate average carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs) emissions from construction activities. Table 3 summarizes estimates of GHG emissions during the construction period for the project.

Table 3. Maximum Greenhouse Gas Emissions from Construction

Construction Year 2022 Pudding Creek Location	CO ₂	CH ₄	N ₂ O	HFC
Total: Tons	100	<1	<1	<1

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which 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; and Section 14-9.02, Air Pollution Control, which 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 would result in GHG emissions during construction, it is anticipated the project would not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

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

Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals (Figure 7) that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, Safeguarding California.

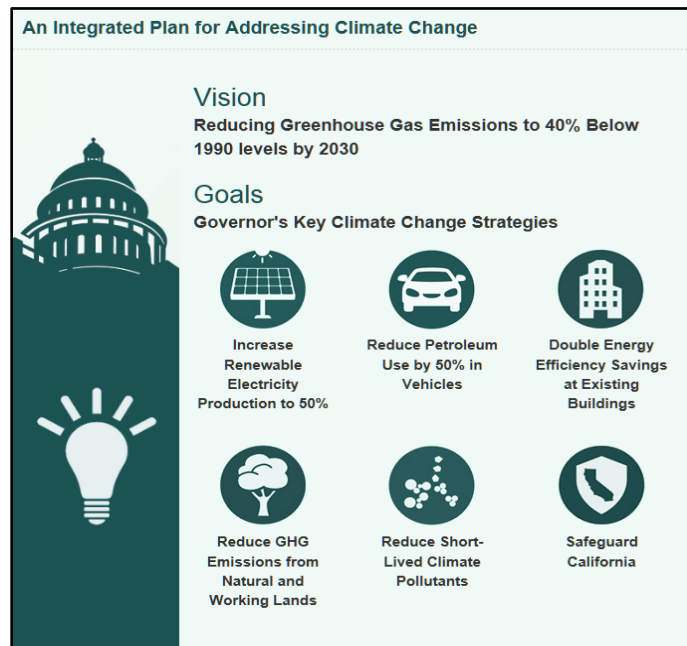


Figure 7. California Climate Strategy

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

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

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the California Transportation Plan 2040, which establishes a new model for developing ground transportation systems, consistent with CO₂ reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit, reduce long-run repair and maintenance costs of roadways, and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

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

Caltrans Strategic Management Plan

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

- Increasing percentage of non-auto mode share

- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

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

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

Project-Level Greenhouse Gas Reduction Strategies

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

Operational Emissions Reduction Measures

- All areas temporarily disturbed during construction would be revegetated with appropriate native species. Landscaping reduces surface warming and, through photosynthesis, decreases CO₂. This replanting would help offset any potential CO₂ emissions increase.
- Improved bicycle and pedestrian facilities would support non-motorized travel within the project limits.

Construction Emissions Reduction Measures

- Standard construction Best Management Practices for air quality would apply. Such air-pollution control measures can also help reduce construction GHG emissions.
- Equipment will be kept in proper tune and working condition.

- The right size equipment will be used for the job.
- The project will balance earthwork quantities, using cut soil as fill soil wherever possible, which would reduce emissions from trucking and hauling trips.
- Pedestrian and bicycle access would be maintained during construction.
- A Transportation Management Plan would be implemented during construction to minimize traffic delays and idling emissions.

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

that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime” (USGCRP 2018).

U.S. 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).

FHWA Order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

State Efforts

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

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

Adaptive capacity is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”

Exposure is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.

Resilience is the “capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and

stresses, and to adapt and grow from a disruptive experience”. Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.

Sensitivity is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.

Vulnerability is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factors. These factors include, but are not limited to, ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

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

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

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate “sea-level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California’s infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic

approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Vulnerability Assessments

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

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

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

Project Adaptation Analysis

Sea-Level Rise

A Sea-Level Rise (SLR) analysis is required for projects in the Coastal Zone that require approval of a Coastal Development Permit or amendment. This project would require such clearance under the California Coastal Act.

This project is located adjacent to, but outside of, areas expected to be affected by predicted sea-level rise. Since the construction year is scheduled for 2022, the Sea-Level Rise scenario for 2070 was analyzed. Using projections in the *State of California Sea-Level Rise Guidance 2018 Update*, the most likely (66 percent probability) range of sea-level rise by 2060 at this location, based on the nearest tide gage at North Spit, is projected to be from 1.4 feet to 2.4 feet under a high-emissions scenario (RCP 8.5). The 1-in-200 chance (4 percent) probability of sea-level rise by 2070 is 4 feet. Under the highest potential emissions scenario (H++), sea-level could rise as much as 5.6 feet by 2070.

Pudding Creek Bridge is approximately 2,600 feet inland from the shoreline. The creek is subject to sea-level rise, tidal influence, storm surge, and tsunami impacts at the SR 1 crossing. The Office of Design and Technical Services-Structures Hydraulics and Hydrology determined that the proposed soffit elevation recommended with 100-year flood event water surface elevation is 13.6 feet when modeled using the tail-water control elevation of 11.22 feet (MHHW of 5.74 feet and the highest end of the range for SLR in year 2100 of 5.48 feet). The existing superstructure is on a bluff ranging from 39 to 48 feet in elevation. The existing soffit elevation is elevation 36 to 45 feet. With the depth of the structure, the space to clear debris below the structure is more than sufficient.

This project is not expected be at risk for impacts from the effects of SLR due to the elevation of the roadway and structure in relation to the potential 100-year flood elevation in 2100 with the consideration of SLR. Additionally, it has been determined that this project does not dismiss future efforts to address sea-level rise beyond the future predictions. Potential adaptation or counter measure strategies beyond the year 2100 planning horizon could possibly include future bank protection measures to protect the structure abutments, if deemed necessary. When considering the current SLR predictions, the estimated water velocities within the channel are low which indicates there is not a need for bank protection at this time. This project will not impact coastal resources over time with consideration of sea-level rise.

Floodplains

According to Federal Emergency Management Agency (FEMA) flood zone maps, the bridge project site is located in Flood Zone A. The Zone A designation is used for areas where there is a 1% annual chance of flooding. As mentioned above, the specific bridge location is elevated and even during a 100-year flood event is not likely to experience flooding. Further, the proposed project includes new or upgraded drainage facilities and culverts and bioswales to slow and absorb stormwater runoff.

2.9. Hazards and Hazardous Materials

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✓
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?				✓
Would the project: f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 Updated Initial Site Investigation dated April 27, 2016.

2.10. Hydrology and Water Quality

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?				✓
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 offsite;				✓
(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?				✓
Would the project: d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				✓

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project, as well as the Water Quality Assessment Report dated March 2017. Potential impacts to hydrology and water quality are not anticipated due to Caltrans BMPs that will be incorporated into the approved project Storm Water Pollution Prevention Plan and incorporation of permanent slope stabilization design details.

2.11. Land Use and Planning

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Physically divide an established community?				✓
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. Potential impacts to land use and planning are not anticipated because the project does not divide an established community or conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

2.12. Mineral Resources

Question:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
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 on the scope, description, and location of the proposed project. Potential impacts to mineral resources are not anticipated as there are no known mineral resources present.

2.13. Noise

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project result in: a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
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 were made for questions b) and c) listed in the CEQA Checklist Noise section based on the Traffic Noise, Air Quality, Energy and Greenhouse Gas memos dated December 13, 2019. See below for further discussion of the “Less Than Significant” determination made for question a).

Regulatory Setting

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will result in a noise impact. If a proposed project is determined to cause a significant noise impact under CEQA, mitigation measures must be incorporated into the project unless those measures are not feasible.

Figure 8 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Figure 8. Noise Levels of Common Activities

Environmental Setting

The project would occur on a segment of highway where residential, retail and commercial properties, including hotels, are located on both sides for portions of the project length.

- a) Would the project result in 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?*

During construction, noise would be generated from contractors equipment and vehicles. The contractor would be required to comply with Caltrans Standard Specification, Section 14-8.02, which states:

“Do not exceed 86 dBA Lmax at 50 feet from the job site activities from 9:00 p.m. to 6:00 a.m. Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.”

Work that would produce noise over 86 dBA would be restricted to daytime work hours only.

Mitigation Measures

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

2.14. Population and Housing

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
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 on the scope, description, and location of the proposed project. Potential impacts to Population and Housing are not anticipated as the project does not involve activities that would directly or indirectly affect population growth or housing.

2.15. Public Services

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				✓
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 does not have the potential to adversely affect public services, including the ability of Caltrans to operate and maintain the State Highway System.

2.16. Recreation

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
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 on the scope, description, and location of the proposed project. Potential impacts to Recreation are not anticipated given the project would not increase the use of existing and regional parks and would not include adding new recreational facilities.

2.17. Transportation/Traffic

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				✓
Would the project: b) Would the project conflict or be inconsistent with CEQA Guidelines section 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 and description of the proposed project, as well as the Transportation Management Plan dated May 27, 2020. One purpose of the project is to add pedestrian and bicycle facilities, which could reduce the number of vehicle miles traveled (VMT) since travelers would have access to non-motorized forms of transportation. Long-term adverse impacts to Transportation and Traffic are not anticipated.

2.18. Tribal Cultural Resources

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>a) Listed or eligible for listing in the California Register of Historical Resources, or in a local Register of Historical Resources as defined in Public Resources Code Section 5020.1(k), or</p>				✓
<p>b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>				✓

“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 October 2016.

2.19. Utilities and Service Systems

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project: a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities—the construction or relocation of which could cause significant environmental effects?				✓
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. There are no expected impacts to Utilities and Service Systems. Temporary impacts would be due to possible relocation efforts. It is anticipated that work associated with utility relocation would be short term.

2.20. Wildfire

Question	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</p> <p>a) Substantially impair an adopted emergency response plan or emergency evacuation plan?</p>				✓
<p>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</p> <p>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?</p>				✓
<p>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</p> <p>c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?</p>				✓
<p>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</p> <p>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?</p>				✓

“No Impact” determinations in this section are based on the scope, description, and location of the proposed project. The project area is classified as a Mediterranean climate. The area undergoes an extreme maritime effect, where the cold waters of the Pacific Ocean dictate the climate along the Northern California coast. Summers are often foggy and cool with daily high temperatures ranging from the mid-60’s (°F) and daily low temperatures in the low 40’s. Although there is little rainfall during summer, fog often coats the landscape, and skies tend to be overcast. Winters are slightly cooler and often rainy. Temperatures range from daily highs in the 50’s and daily lows in 40’s. The area receives an average of 43 inches of rainfall annually, most of which occurs between October and April. The area remains largely green throughout the year.

2.21. Mandatory Findings of Significance

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

The 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 effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

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

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." An EIR is required in all situations when a project might result in a "significant" direct, indirect, or cumulative impact on any resource. The analysis indicates the activities associated with the proposed project do not have the potential to have a direct, indirect, or cumulative impact on any resource. Given this, an EIR and CIA were not required for this project.



Chapter 3. Coordination and Comments

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

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

Coordination with Resource Agencies

Table 4. Agency Coordination and Professional Contacts

Date	Personnel	Notes
June 25, 2015	Sean Marquis, Lori McIntosh, Keith Pelfrey, Caltrans Biologists; Greg Schmidt USFWS	Field agency meeting to discuss resources present and level of consultation.
June 30, 2015	S. Marquis, Caltrans Biologist; Darren Howe, NMFS	Caltrans requested and received a species list from NMFS for the project area.
July 1, 2015	S. Marquis, Caltrans Biologist; D. Howe, NMFS	At Caltrans' request, a field review was scheduled with NMFS for July 14, 2015.
July 9, 2015	S. Marquis, Caltrans Biologist; Sean Gallagher, CDFW	Caltrans requested information from CDFW for salmonids which potentially may occur within the project area.
July 14, 2015	S. Marquis, Caltrans Biologist; D. Howe, NMFS	Field agency meeting to discuss resources present and level of consultation.

Date	Personnel	Notes
August 5, 2015	S. Marquis, Caltrans Biologist; D. Howe, NMFS	Phone meeting to discuss the project and potential effects.
September 4, 2015	S. Marquis, Caltrans Biologist; G. Schmidt, USFWS	S. Marquis sent email to USFWS with results of <i>Viola adunca</i> and <i>Hosackia gracilis</i> (butterfly host plant) surveys.
October 8, 2015	S. Marquis, Caltrans Biologist; D. Howe, NMFS	Phone meeting to discuss the project and potential effects.
April 27, 2016	S. Marquis, Caltrans Biologist; D. Howe, NMFS	Phone meeting to discuss the project and potential effects.
June 2, 2016	L. McIntosh, Caltrans Biologist; G. Schmidt, USFWS	L. McIntosh sent email to USFWS outlining how the project fits the Programmatic Letter of Concurrence (PLOC) for tidewater goby.
June 6, 2016	L. McIntosh, Caltrans Biologist; D. Howe, NMFS	L. McIntosh sent email to NMFS explaining results of preliminary Hydroacoustic Assessment.
June 14, 2016	Caltrans Project Development Team; City of Fort Bragg; California Coastal Commission	Phone meeting to discuss scope of work and potential impacts.
July 18, 2016	L. McIntosh, Caltrans Biologist; S. Gallagher, CDFW	Requested site-specific information on salmonid use of the action area. This information was received the same day.
August 2, 2016	L. McIntosh, Caltrans Biologist; Biologist with Campbell Timberland Management	Requested site-specific information on salmonids in the action area.
August 23, 2016	Caltrans Project Development Team; City of Fort Bragg; California Coastal Commission	Field review to discuss scope of work and potential impacts.

Date	Personnel	Notes
January 23, February 2, March 27, and June 22, 2018	Desiree Davenport, Caltrans Biologist; D. Howe NMFS	Caltrans requested and received an updated species list from NMFS for the project area; technical assistance on Essential Fish Habitat, Southern DPS Green Sturgeon, discussion of use of the Programmatic Biological Opinion via email.
August 21, 27-28, October 17, 2018	D. Davenport, Caltrans Biologist; G. Schmidt, USFWS	Technical assistance for Tidewater Goby via email.
August 29, 2018	D. Davenport, Caltrans Biologist; S. Frederickson Caltrans Senior Resource Specialist; G. Schmidt, USFWS	Met in person at the District Office to discuss use of the PLOC for Tidewater Goby. Concluded that the PLOC could not be used because pile driving was not included in the Programmatic Biological Assessment.
October 18, 2018	D. Davenport, Caltrans Biologist; D. Howe NMFS	Caltrans informed NMFS of the Project Development Team (PDT) decision to do pile driving and initiate consultation for potential impacts to fish.
November 15, 2018	Caltrans PDT members Frank Demling, Liza Walker, Desiree Davenport, Stephen Umbertis, Bryan Bet, Ryan Pommerenck and S. Frederickson; D. Howe, NMFS	Discussion over the phone regarding pile driving and drilling, and the potential impact to fish.
January 30, 2019	T. Walker, Caltrans Biologist; D. Howe and Elena Meza, NMFS	Email sent to NMFS to update them on pile driving impacts to salmonids at Pudding Creek Bridge and best strategy for level of consultation.
January 31, 2019	T. Walker, Caltrans Biologist; S. Frederickson, Caltrans Senior Resource Specialist; G. Schmidt, USFWS; Manna Warburton, Senior Biologist, ICF	Meeting at Caltrans to discuss impacts of pile driving at Pudding Creek Bridge to tidewater goby and appropriate level of consultation.
February 5, 2019	Tracy Walker, Caltrans Biologist; E. Meza, NMFS	Email received from Elena Meza at NMFS concurring with strategy to protect salmonids at Pudding Creek during pile driving.

Date	Personnel	Notes
February 28, 2019	Tracy Walker, Caltrans Biologist; S. Frederickson, Senior Resource Specialist; G. Schmidt, USFWS; Jamie Jackson, CDFW; E. Meza, NMFS; Mike Kelly, NMFS; M. Warburton, Senior Biologist, ICF	Level 1 Agency meeting at USFWS Arcata Office. Presented resource agencies with pile driving information and strategy at Pudding Creek.
May 30, 2019	Tracy Walker, Caltrans Biologist; S. Frederickson, Senior Resource Specialist; G. Schmidt, USFWS; J. Jackson, CDFW; Gordon Leppig, CDFW	Level 1 Agency meeting at Caltrans. Discussed with G. Schmidt whether presence of <i>V. adunca</i> within project buffer at Pudding Creek would require protocol butterfly surveys. CDFW also notified Caltrans that Jamie Jackson would replace Jen Garrison as CDFW liaison for this project.
June 4, 2019	T. Walker, Caltrans Biologist; Stephen Umbertis, Project Coordinator; E. Meza NMFS	Field agency meeting to discuss resources present and level of consultation at Pudding Creek.
July 17, 2019	T. Walker, Caltrans Biologist; S. Umbertis, Project Coordinator; J. Jackson, CDFW	Field agency meeting to discuss resources present and level of consultation at Pudding Creek.
July 23, 2019	T. Walker, Caltrans Biologist; J. Jackson, CDFW	Sent follow-up email to CDFW summarizing the field site review at Pudding Creek.
August 16, 2019	T. Walker, Caltrans Biologist; Shaun Thompson, CDFW	Email confirmation to CDFW to confirm presence of listed fish species (including species of special concern) in Pudding Creek.
September 26, 2019	T. Walker, Caltrans Biologist; E. Meza, NMFS	Second phone call to NMFS to discuss species present at each drainage and confirm levels of hydroacoustic analysis.
November 8, 2019	T. Walker, Caltrans Biologist; S. Frederickson, Caltrans Senior Resource Specialist; L. Walker, Caltrans Project Coordinator; E. Meza, NMFS	Conference call with NMFS to confirm levels of hydroacoustic analysis needed.

Date	Personnel	Notes
December 3, 2019	T. Walker, Caltrans Biologist; E. Meza, NMFS	Conference call with NMFS to confirm types of EFH required for the project.
January 21, 2020	T. Walker, Caltrans Biologist; Shaun Thompson, CDFW	Email to CDFW to discuss lack of Chinook salmon and designated habitat at Pudding Creek.



Chapter 4. List of Preparers

The following individuals performed the environmental work on the project:

California Department of Transportation

Saeed Aazami	Project Engineer
Phlora Barbash	Landscape Associate
Frank Demling	Project Manager
Tim Keefe	Senior Environmental Planner, Cultural Resources
Brandon Larsen	Office Chief
Lorna McFarlane	Associate Environmental Planner, Water Quality
Mark Melani	Associate Environmental Planner, Hazardous Waste
Kristine Pepper	Hydraulics Engineer
Ryan Pommerenck	Transportation Engineer
Liza Walker	Senior Environmental Planner
Tracy Walker	Associate Environmental Planner, Biologist
Quinn Wehrman	Transportation Engineer
Saeid Zandian	Transportation Engineer, Air and Noise



Chapter 5. Distribution List

Federal and State Agencies

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Arcata CA 95521

Jen Olson
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Eureka CA 95501

California State Clearinghouse
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Susan Stewart
North Coast Regional Water Quality Control Board
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403

Greg Schmidt
United States Fish and Wildlife Service
1655 Heindon Road
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Regional/County/Local Agencies

John Smith
City of Fort Bragg
416 North Franklin Street
Fort Bragg CA 95437

Julia Acker
Mendocino County Planning & Building Services
860 N Bush Street
Ukiah CA 95482

Chapter 6. References

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|---------------|--|
| April 2016 | Updated Initial Site Investigation |
| October 2016 | Historic Property Survey Report |
| March 2017 | Water Quality Assessment Report |
| January 2019 | Pudding Creek Hydroacoustic Assessment |
| December 2019 | Traffic Noise, Air Quality, Energy and Greenhouse Gas memo |
| March 2020 | Visual Impact Assessment |
| April 2020 | Natural Environment Study |
| May 2020 | Transportation Management Plan |
- American Association of State Highway and Transportation Officials (AASHTO). *GHG Mitigation Overview*. http://climatechange.transportation.org/ghg_mitigation/. Accessed January 2016.
- Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California*, Second Edition. University of California Press, Berkeley.
- Bolle, L. J., de Jong C. A. F., Bierman S. M., van Beek P. J. G., and O. A. van Keeken. 2012. Common Sole Larvae Survive High Levels of Pile-Driving Sound in Controlled Exposure Experiments. *PLoS ONE* 7(3): 33052.
- Buehler, D. A. 2000. Bald Eagle (*Haliaeetus leucocephalus*). In *The Birds of North America*, No. 564 (A. Poole and F. Gill, eds.). The Birds of North America Online, Ithaca, New York.
- Bulger, J. B., N. J. Scott Jr., and R. B. Seymour. 2003. Terrestrial activity and conservation of adult California Red-legged Frogs *Rana aurora draytonii* in coastal forests and grasslands. *Biological Conservation* 110:85–95.

- California Air Resources Board (CARB). 2019a. *California Greenhouse Gas Emissions Inventory—2019 Edition*. <https://ww3.arb.ca.gov/cc/inventory/data/data.htm>. Accessed: August 21, 2019.
- California Air Resources Board (CARB). 2019b. *California Greenhouse Gas Emissions for 2000 to 2017. Trends of Emissions and Other Indicators*. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf. Accessed: August 21, 2019.
- California Air Resources Board (CARB). 2019c. *SB 375 Regional Plan Climate Targets*. <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>. Accessed: August 21, 2019.
- California Department of Fish and Game (CDFG). 2004. Recovery Strategy for California Coho Salmon. Report to the California Fish and Game Commission. Sacramento, CA.
- _____. 2006. Stream Inventory Report. “Pudding Creek”. Accessed on June 15, 2019 from <https://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=Fisheries--StreamInventoryReports>.
- California Department of Fish and Wildlife (CDFW). 2020. Biogeographic Data Branch. California Natural Diversity Database (CNDDB) Rarefind 5 (Government Version). Retrieved on January 28, 2020 from <https://map.dfg.ca.gov/rarefind/view/RareFind.aspx>.
- _____. 2018. Protocols for Surveying and Evaluating Special Status Native Plant Populations and Natural Communities. Available: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>
- _____. 2010. California Department of Fish and Game Natural Communities List. Retrieved September 2019 from http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp
- California Department of Transportation. *Climate Action Program*. http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltans_Climate_Action_Program.pdf. Accessed September 2014.
- California Department of Transportation. 2015. *Standard Specifications*. <http://www.dot.ca.gov/des/oe/construction-contract-standards.html>.

California Department of Transportation (Caltrans). 2015. *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish*. November. (Contract 43A0306.) Sacramento, CA. Prepared by ICF International, Illingworth and Rodkin, Inc.

_____. 2016a. Pudding Creek Bridge Widening and Rail Upgrade Project, Preliminary Foundation Report. 01-MEN-PM 62.12. EA 43480. February 10, 2016.

_____. 2016b. *Technical Guidance for Assessment and Mitigation of the Effects of Highway and Road Construction Noise on Birds*. June. (Contract 43A0306.) Sacramento, CA. Prepared by ICF International, Sacramento, CA, Robert Dooling, Gaithersburg, MD, and Arthur Popper, Silver Spring, MD.

_____. 2018. Highway Design Manual – U.S. Customary Units. Sacramento, CA. [page 300-326]

California Herps. 2019. “Northern Red-Legged Frog - *Rana Aurora*.” URL:

<http://www.californiaherps.com/frogs/pages/r.aurora.html>

California Invasive Plant Inventory (Cal-IPC). 2019. Invasive plant inventory. URL:

<http://www.cal-ipc.org>

California Native Plant Society (CNPS), Rare Plant Program. 2020. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Accessed on January 28, 2020 from

<http://www.rareplants.cnps.org>.

Chamberlain, C.D. 2006. Environmental variables of northern California lagoons and estuaries and the distribution of tidewater goby (*Eucyclogobius newberryi*). U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata Fisheries Technical Report Number TR 2006-04, Arcata, California.

_____. 2011. Tidewater Goby investigations - 2010 North Coast populations. U.S. Fish and Wildlife Service. Arcata Fish and Wildlife Office, Arcata Fisheries Data Series Report DS-2011-21, Arcata, California.

Cochran, S. M. 2015. “Marine Survival of Coho Salmon (*Oncorhynchus kisutch*) from Small Coastal Watersheds in Northern California.” Humboldt State University.

- Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D. C. Biological Services Program.
- Craig, D. and P. L. Williams. 1998. Willow flycatcher (*Empidonax traillii*). In The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-Associated Birds in California. California Partners in Flight. Available: URL: http://www.prbo.org/calpif/htmldocs/species/riparian/willow_flycatcher.htm
- Doak, D., J. Borgeson, S. Danner, A. Graff, M. Kauffman, P. Shahani, and D. Thomson. 2000. Ecological factors affecting the recovery of Coastal milkvetch (*Astragalus tener* var. *titi*, Fabaceae), Hickman's cinquefoil (*Potentilla hickmanii*, Rosaceae) and Pacific Grove clover (*Trifolium polyodon*, Fabaceae); and ecological factors affecting the recovery of Gowen cypress (*Cupressus goveniana* ssp. *goveniana*, Cupressaceae) and Monterey clover (*Trifolium trichocalyx*, Fabaceae). Unpublished report prepared for California State Department of Fish and Game. 53 pp.
- Emmett, R. L., S. A. Hinton, S. L. Stone, and M. E. Monaco. 1991. Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries, Volume II: Species life histories summaries. ELMR Report No. 8., NOS/NOAA Strategic Environmental Assessment Division, Rockville, MD, 329 pp.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Vicksburg, MS: Waterways Experiment Station.
- Erickson, Gregg A., et al., 2002. Bat and Bridges Technical Bulletin (Hitchhiker Guide to Bat Roosts), California Department of Transportation, Sacramento CA.
- Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Federal Highway Administration (FHWA). 2019. *Sustainability*. <https://www.fhwa.dot.gov/environment/sustainability/resilience/>. Last updated February 7, 2019. Accessed: August 21, 2019.

- Federal Highway Administration (FHWA). No date. *Sustainable Highways Initiative*. <https://www.sustainablehighways.dot.gov/overview.aspx>. Accessed: August 21, 2019.
- Feldhamer, G. A. and J. A. Rochelle. 1982. Mountain beaver. Pages 167-175 in J. A. Chapman and G. A. Feldhamer (eds.), *Wild Mammals of North America: Biology, Management, Conservation*. Johns Hopkins University Press, Baltimore, Maryland.
- Fellers, G. M. 2005. *Rana draytonii* Baird and Girard 1852, California Red-Legged Frog. In M. Lannoo (ed.), *Amphibian Declines: The Conservation Status of United States Species*. Volume 2, pp. 552-554. University of California Press, Berkeley.
- Fisheries Hydroacoustic Working Group (FHWG). 2015. Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities. Memorandum to NOAA Fisheries, U.S. Fish and Wildlife Service, California/Washington/Oregon Departments of Transportation, California Department of Fish and Game, and U.S. Federal Highways Administration. Dated June 12, 2008.
- Gallagher, S. P. and D. W. Wright. 2012. Coastal Mendocino County salmonid life cycle and regional monitoring: monitoring status and trends for 2011. California State Department of Fish and Game, Coastal Watershed Planning and Assessment Program, 1487 Sandy Prairie Court, Suite A, Fortuna, CA 95540. 34 pp.
- Gallagher, S. P., Thompson, S., and Wright, D. W. 2012. Identifying factors limiting coho salmon to inform stream restoration in coastal Northern California. *California Fish and Game* 98(4): 185-201.
- Goertner, J. F., M. L. Wiley, G. A. Young, and W. W. McDonald. 1994. Effects of underwater explosions on fish without swimbladders. NSWC TR 88-114. Naval Surface Warfare Center. Silver Springs, MD.
- Griggs., F. T. 2009. *California Riparian Habitat Restoration Handbook* (2nd ed). River Partners, Sacramento, CA. 77 pp.
- Grumbles, B. H. and J. P. Woodley, Jr. 2007. Memorandum: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* and *Carabell v. United States*. June 5. 12 pp.

- Gutierrez, R. J., A. B. Franklin, and W. S. LaHaye. 1995. Spotted owl (*Strix occidentalis*). In A. Poole and F. Gill, editors. The Birds of North America 179. Washington, D.C., USA.
- Harris, J. H. 1991. Effects of Brood Parasitism by Brown-headed Cowbirds on Willow Flycatcher Nesting Success along the Kern River, California. *Western Birds* 22:13-26.
- Hastings, M. C., and A. N. Popper. 2005. ICF Jones & Stokes. Effects of Sound on Fish. Report provided to the California Department of Transportation, Sacramento, California.
- Hatfield, R., S. Jepsen, E. Mader, S. H. Black, and M. Shepherd. 2012. Conserving Bumble Bees: Guidelines for Creating and Managing Habitat for America's Declining Pollinators. The Xerces Society for Invertebrate Conservation. URL: <http://www.xerces.org/bumblebees/guidelines>.
- Hatler, D. F., Badry, M. and A. M. M. Beal. 2003. Management Guidelines for Furbearers in British Columbia: Fisher (*Martes pennanti*). In British Columbia Trappers Association Trapper Education Training Manual. British Columbia Ministry of Land, Water, and Air Protection.
- Hawkins, A. D., Pembroke, A., & Popper, A. 2015. Information gaps in understanding the effects of noise on fishes and invertebrates. *Reviews in Fish Biology and Fisheries*, 25, 39–64.
- Hickman, J. C., ed. 1996. The Jepson Manual: Higher Plants of California. University of California Press. Berkeley, CA
- Hunter, J. E., Fix, D., Schmidt, G. A., Power, J. C. 2005. Atlas of the Breeding Birds of Humboldt County, California. Redwood Region Audubon Society, Eureka, CA.
- International Union for Conservation of Nature (IUCN). 2019. The IUCN Red List of Threatened Species. URL: <http://www.iucnredlist.org/>. [Accessed September 10, 2019].
- Jennings, M., and M. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game & California Academy of Sciences.

- Johnson, S.R. 1971. Thermal regulation, microclimate, and distribution of the mountain beaver, *Aplodontia rufa pacifica* Merriam. Ph.D. Dissertation. Oregon State University, Corvallis, OR.
- Kinney, J. 1971. Environmental physiology of a primitive rodent (*Aplodontia rufa*). PhD Dissertation, University of Oregon, Eugene, OR.
- Kinziger, A. P. and Schmelzle, M. C. 2013. Final Report: Monitoring the Endangered Tidewater Goby (*Eucyclogobius newberryi*) using eDNA in Water Samples: Assay Development and Field Survey Design. Humboldt State University, Arcata, California.
- Layman, S. A., and M. D. Halterman. 1989. A Proposed Habitat Management Plan for Yellow-billed Cuckoos in California.
- McCraney, T. W., and A. P. Kinziger. 2009. Rampant Drift in the Endangered Tidewater Goby (*Eucyclogobius newberryi*): Comparing Genetic Variation of Naturally and Artificially Fragmented Populations. Humboldt State University, Department of Fisheries Biology, Arcata, California.
- Mendocino County. 2009. Resource Management Element of the Mendocino County General Plan, Adopted August 2009. Mendocino County Planning and Building Services, Ukiah, CA.
- Mendocino County. 1991. Coastal Element of the Mendocino County General Plan, Adopted November 5, 1985, Last Revised March 11, 1991. Mendocino County Planning and Building Services, Ukiah, CA.
- Moyle, P. B., R. M. Yoshiyama, J. E. Williams, and E. D. Wikramanayake. 1995. *Fish Species of Special Concern in California*. Second edition. Final report to CA Department of Fish and Game, contract 2128IF.
- National Marine Fisheries Service (NMFS) 1999. Designated Critical Habitat for Central California Coast and Southern Oregon/Northern California Coast Coho Salmon. 64 Federal Register 86: 24049-24061.
- _____. 2005. Endangered and Threatened Species. Determination of Endangered for the Central California Coast Coho Salmon. 70 Federal Register 86: 37160.

- _____. 2005. Endangered and Threatened Species. Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California, 70 Federal Register 170: 52488-52627.
- _____. 2006. Endangered and Threatened Species. Determination of Threatened Status for the Northern California Distinct Population Segment of Steelhead in California. 71 Federal Register 3: 834-862.
- _____. 2009. Endangered and Threatened Species. Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. 74 Federal Register 170: 52300-523.
- _____. 2012. Final Recovery Plan for Central California Coast Coho Salmon Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.
- _____. 2015. 5-year Review for the Southern Distinct Population Segment of the North American Green Sturgeon (*Acipenser medirostris*). National Marine Fisheries Service, West Coast Region, Long Beach, California.
- _____. 2016. Coastal Multispecies Final Recovery Plan. National Marine Fisheries Service, West Coast Region, Santa Rosa, California.
- _____. 2019. "Leatherback Sea Turtle (*Dermochelys coriacea*)." URL: www.fisheries.noaa.gov/pr/species/fish/leatherback-turtle.html. [Accessed November 12, 2019].
- _____. 2019. "Coastal Pelagic Species." URL: <https://www.fisheries.noaa.gov/species/coastal-pelagic-species>. [Accessed September 12, 2019].
- _____. 2019. "Essential Fish Habitat on the West Coast." URL: <https://www.fisheries.noaa.gov/west-coast/habitat-conservation/essential-fish-habitat-west-coast>. [Accessed September 12, 2019].
- _____. 2020. Intersection of USGS 7.5" Topographic Quadrangles with NOAA Fisheries ESA Listed Species, Critical Habitat, Essential Fish Habitat, and MMPA Species Data within California. Google Earth application. [updated: January 28, 2020].
- NMFS and USFWS. 2007. Green sea turtle (*Chelonia mydas*) 5-year review: summary and evaluation. NMFS Office of Protected Resources, Silver Spring and USFWS Southeast Region, Jacksonville.

- National Research Council (NRC). 2002. Riparian areas: functions and strategies for management. National Academy of Science. Washington, DC.
- Pacific Fishery Management Council. March 2016. Pacific Coast Salmon Fishery Management Plan. Portland, OR.
- Pickart, A. J., and J. Sawyer. 1998. Ecology and restoration of northern California coastal dunes. California Native Plant Society, Sacramento, California.
- Popper, A. N., and A. D. Hawkins. 2019. An Overview of Fish Bioacoustics and the Impacts of Anthropogenic Sounds on Fishes. *Journal of Fish Biology* 94 (5): 692–713.
- Sawyer, J. O., T. Keeler-Wolf, and J. Evens. 2009. A Manual of California Vegetation. 2nd Edition. Sacramento, CA: California Native Plant Society.
- State of California. 2018. *California's Fourth Climate Change Assessment*. <http://www.climateassessment.ca.gov/>. Accessed: August 21, 2019.
- State of California. 2019. *California Climate Strategy*. <https://www.climatechange.ca.gov/>. Accessed: August 21, 2019.
- Swift, C., J. L. Nelson, C. Maslow, and T. Stein. "Biology and Distribution of Tidewater Goby, *Eucyclogobius newberryi* of California". Contributions in Science. March 14, 1989. No. 404. Natural History Museum of Los Angeles County. Pp. 1-19.
- Taylor, W. 1914. A previously undescribed *Aplodontia* from the middle North Coast of California. University of California Publications in Zoology 12:297-300.
- Taylor, W. 1918. Revision of the rodent Genus *Aplodontia*. University of California Publications in Zoology 17:435-504.
- United States Army Corps of Engineers (USACE). 2005. Regulatory Guidance Letter: Ordinary High Water Mark Identification. December 7. (Letter 05-05.) URL: <http://www.usace.army.mil/cw/cecwo/reg/rgls/rgl05-05.pdf>
- _____. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), J. S. Wakeley, R. W. Lichvar, and C. V. Noble (eds). ERDC/EL TR-10-3. Vicksburg, MS: Research and Development Center.

- _____. 2016. National Wetland Plant List, version 3.3. Available at: <http://wetland-plants.usace.army.mil/>
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. URL: <http://websoilsurvey.sc.egov.usda.gov>. [Accessed June 22, 2019].
- U.S. Department of Transportation (U.S. DOT). 2011. *Policy Statement on Climate Change Adaptation*. June. https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm. Accessed: August 21, 2019.
- U.S. Environmental Protection Agency (U.S. EPA). 2018. *Inventory of U.S. Greenhouse Gas Emissions and Sinks*. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>. Accessed: August 21, 2019.
- U.S. Fish and Wildlife Service USFWS. 1982. Klamath River Fisheries Investigation Program. Annual Report 1981.
- _____. 1994. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Tidewater Goby, 59 Federal Register 24: 5494-5498.
- _____. 1997. Recovery plan for the Marbled Murrelet (*Brachyramphus marmoratus*) in Washington, Oregon, and California. U.S. Fish and Wildlife Service, Region 1, Portland, Oregon.
- _____. 1998. Recovery Plan for the Point Arena Mountain Beaver (*Aplodontia rufa nigra* (Rafinesque)). U.S. Fish and Wildlife Service, Portland, Oregon.
- _____. 2005. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*). U.S. Fish and Wildlife Service, Portland, Oregon.
- _____. 2006. Arcata Fish and Wildlife Office. Draft Guidelines for Habitat Assessments and Surveys for Behren's Silverspot Butterfly (*Speyeria zerene behrensii*).
- _____. 2007. Recovery plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius nivosus nivosus*): Vol. I, Sacramento, CA. 274 pp.
- _____. 2008. Recovery plan for the Short-tailed albatross (*Phoebastria albatrus*). Anchorage, AK, 105 pp.
- _____. 2009. 5-year Review for the Point Arena Mountain Beaver (*Aplodontia rufa nigra*). U.S. Fish and Wildlife Service, Portland, Oregon.

- _____. 2011. Revised Recovery Plan for the Northern Spotted Owl (*Strix occidentalis caurina*). URL: http://ecos.fws.gov/docs/recovery_plan/RevisedNSORecPlan2011_1.pdf.
- _____. 2013. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Tidewater Goby. 78 Federal Register 25: 8746-8819.
- _____. 2016. Recovery Plan for Behren's Silverspot Butterfly (*Speyeria zerene behrensii*). U.S. Fish and Wildlife Service, Pacific Southwest Regional Office, Region 8, Sacramento, California.
- _____. 2019. National Wetlands Inventory Website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.D. <http://www.fws.gov/wetlands/>.
- _____. 2020. Official Species List. Obtained from <http://ecos.fws.gov/ipac>. [updated January 28, 2020].
- U.S. Global Change Research Program (USGCRP). 2018. *Fourth National Climate Assessment*. <https://nca2018.globalchange.gov/>. Accessed: August 21, 2019.
- Wright, David W., Gallagher S.P., and Hannon, C. J. 2011. "Measurements of Key Life History Metrics of Coho Salmon in Pudding Creek, California." General Technical Report PSW-GTR-238.
- Xerces Society. 2012. Data accessed from Bumble Bee Watch, a collaborative website to track and conserve North America's bumble bees. Available at <http://www.bumblebeewatch.org/app/#/bees/lists>.
- Xerces Society. 2017. A Petition to the State of California Fish and Game Commission to List the Crotch bumble bee, Franklin's bumble bee, Suckley cuckoo bumble bee, and western bumble bee as Endangered under the California Endangered Species Act.
- Zielinski, W. J., R. L. Truex, J. R. Dunk, and T. Gaman. 2006. Using Forest Inventory Data to Assess Fisher Resting Habitat Suitability in California. *Ecological Applications*, 16(3): 1010-1025.

PERSONAL COMMUNICATIONS

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Transportation, North Region.

Ryan Pommerenck, Transportation Engineer, California Department of Transportation, North
Region.

Gregory Schmidt, Fish & Wildlife Biologist, Endangered Species Program, U.S. Fish and
Wildlife Service

Shaun Thompson, Fisheries Biologist, California Department of Fish and Wildlife

Appendix A. Title VI Policy Statement



DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
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SACRAMENTO, CA 94273-0001
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*Making Conservation
a California Way of Life.*

November 2019

**NON-DISCRIMINATION
POLICY STATEMENT**

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

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

For information or guidance on how to file a complaint, 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/business-and-economic-opportunity/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 Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

A blue ink signature of Toks Omishakin, consisting of a stylized 'T' followed by 'O' and 'A'.

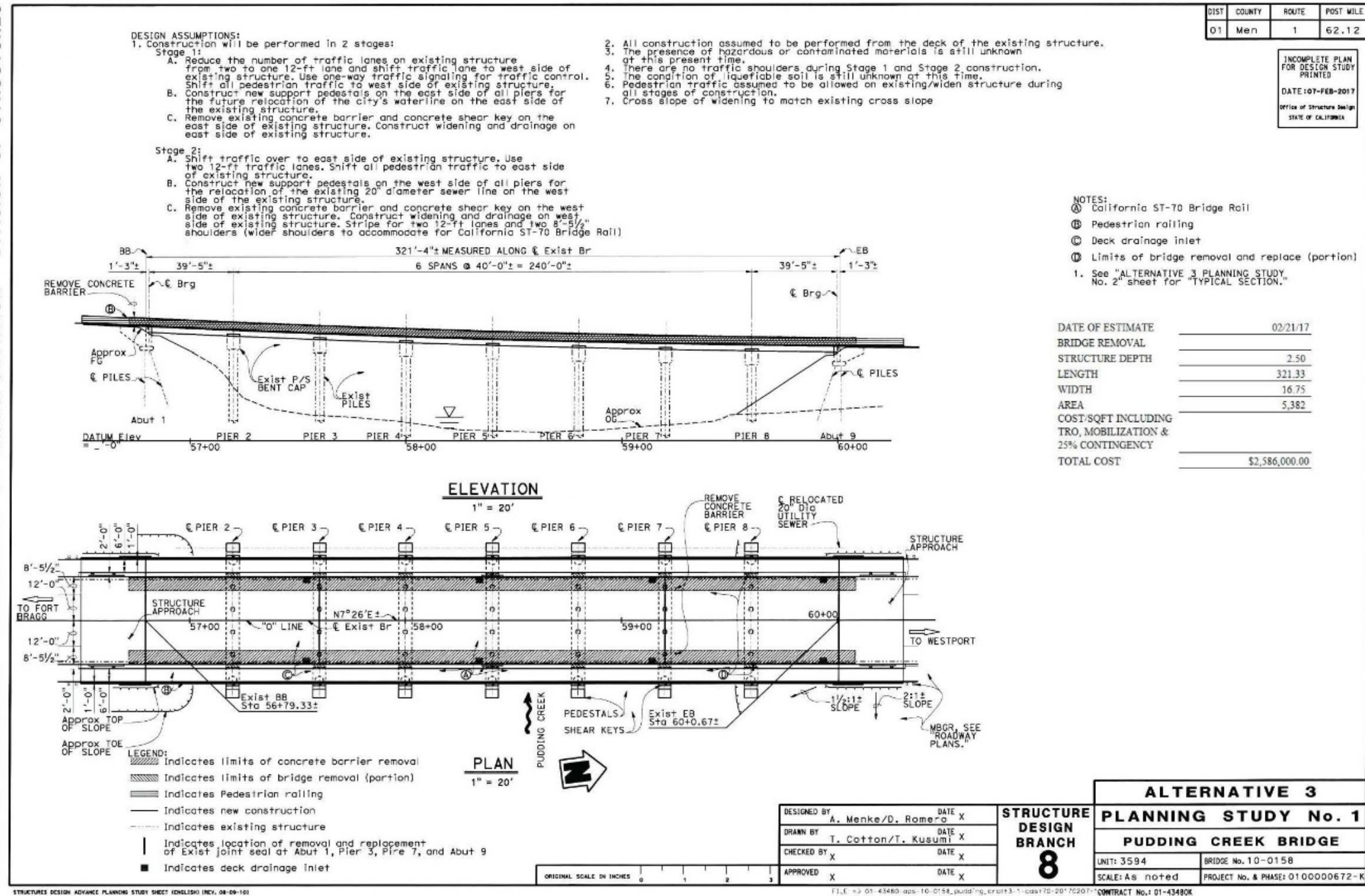
Toks Omishakin
Director

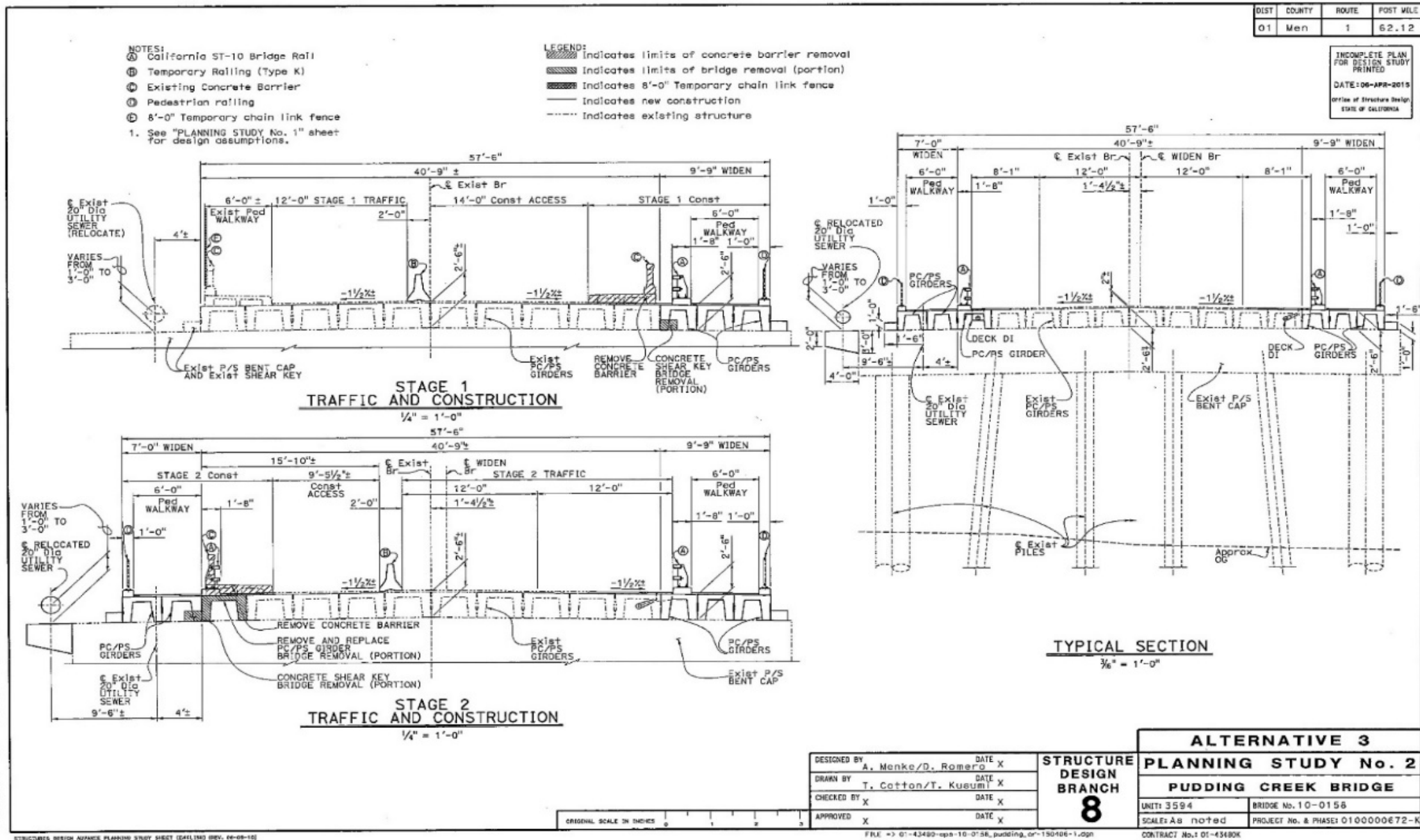
"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"



Appendix B. Layouts of Proposed Work









Appendix C. USFWS and NMFS Species List





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:

January 28, 2020

Consultation Code: 08EACT00-2019-SLI-0476

Event Code: 08EACT00-2020-E-00290

Project Name: Pudding Creek Bridge Widening

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road
Arcata, CA 95521-4573
(707) 822-7201

Project Summary

Consultation Code: 08EACT00-2019-SLI-0476

Event Code: 08EACT00-2020-E-00290

Project Name: Pudding Creek Bridge Widening

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: This plus the Jack Peters Creek Bridge will be widened.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.45469363270051N123.80612540727228W>



Counties: Mendocino, CA

Endangered Species Act Species

There is a total of 19 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
Fisher <i>Pekania pennanti</i> Population: West coast DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3651	Proposed Threatened
Point Arena Mountain Beaver <i>Aplodontia rufa nigra</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7727	Endangered

Birds

NAME	STATUS
Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Short-tailed Albatross <i>Phoebastria (=Diomedea) albatrus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered

Amphibians

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

Fishes

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Behren's Silverspot Butterfly <i>Speyeria zerene behrensii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/900	Endangered
Lotis Blue Butterfly <i>Lycaeides argyrognomon lotis</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5174	Endangered

Flowering Plants

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
Howell's Spineflower <i>Chorizanthe howellii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7607	Endangered
Menzies' Wallflower <i>Erysimum menziesii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2935	Endangered
Monterey Clover <i>Trifolium trichocalyx</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4282	Endangered
Showy Indian Clover <i>Trifolium amoenum</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> https://ecos.fws.gov/ecp/species/57#crithab	Final



Quad Name **Fort Bragg**

Quad Number **39123-D7**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **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 - **X**

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

ESA Whales

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

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
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 -	X

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 - X

MMPA Pinnipeds - X

Quad Name **Mendocino**

Quad Number **39123-C7**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) - **X**
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
CC Chinook Salmon Critical Habitat - **X**
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat - **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 - **X**

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

ESA Whales

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

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
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 -	X

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 - X

MMPA Pinnipeds - X



Appendix D. Botanical Survey Results



<i>Scientific_Name</i>	<i>Common_Name</i>	<i>Layer</i>	<i>Origin</i>
<i>Abies grandis</i>	Grand fir	Tree	native
<i>Abronia latifolia</i>	Yellow sand verbena	Herb	native
<i>Acacia melanoxylon</i>	Blackwood acacia	Tree	Invasive
<i>Acacia</i> sp.	Acacia	Tree	
<i>Aira caryophyllea</i>	Silver hair grass	Herb	introduced
<i>Alnus rubra</i>	Red alder	Shrub	native
<i>Ambrosia chamissonis</i>	Beach bur-sage	Herb	native
<i>Ammophila arenaria</i>	European beachgrass	Herb	invasive
<i>Anagallis arvensis</i>	Scarlet pimpernel	Herb	introduced
<i>Anaphalis margaritacea</i>	Pearly everlasting	Herb	native
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	Herb	invasive
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Lady fern	Herb	native
<i>Avena barbata</i>	Slender wild oat	Herb	invasive
<i>Avena fatua</i>	Wild oat grass	Herb	invasive
<i>Baccharis pilularis</i>	Coyote brush	Shrub	native
<i>Bellis perennis</i>	English daisy	Herb	introduced
<i>Brassica nigra</i>	Black mustard	Herb	invasive
<i>Briza maxima</i>	Rattlesnake grass	Herb	invasive
<i>Briza minor</i>	Small quaking grass	Herb	introduced
<i>Bromus carinatus</i>	California brome	Herb	native
<i>Bromus diandrus</i>	Ripgut grass	Herb	invasive
<i>Bromus hordeaceus</i>	Soft chess	Herb	invasive
<i>Calystegia soldanella</i>	Beach morning-glory	Herb	native
<i>Camissoniopsis cheiranthifolia</i> subsp. <i>cheiranthifolia</i>	Beach evening-primrose	Herb	native
<i>Cardamine oligosperma</i>	Western bittercress	Herb	native
<i>Carduus pycnocephalus</i>	Italian thistle	Herb	invasive
<i>Carex obnupta</i>	Slough sedge	Herb	native
<i>Carpobrotus edulis</i>	Freeway iceplant	Herb	invasive
<i>Ceanothus thyrsiflorus</i>	Blue blossom	Shrub	native
<i>Centaurium erythraea</i>	European centuary	Herb	introduced
<i>Chenopodium album</i>	Lamb's quarters	Herb	introduced
<i>Cirsium vulgare</i>	Bull thistle	Herb	invasive

<i>Cistus incanus</i>	Rock-rose	Shrub	introduced
<i>Claytonia perfoliata</i>	Miner's lettuce	Herb	native
<i>Conium maculatum</i>	Poison hemlock	Herb	invasive
<i>Cortaderia jubata</i>	Purple pampas grass	Herb	invasive
<i>Cotoneaster lacteus</i>	Late cotoneaster	Shrub	invasive
<i>Cotula coronopifolia</i>	Brass-buttons	Herb	invasive
<i>Cynosurus echinatus</i>	Bristly dogtail grass	Herb	invasive
<i>Cyperus eragrostis</i>	Tall flat-sedge	Herb	native
<i>Cytisus scoparius</i>	Scotch broom	Shrub	invasive
<i>Dactylis glomerata</i>	Orchard grass	Herb	invasive
<i>Daucus carota</i>	Queen Anne's lace	Herb	introduced
<i>Daucus pusillus</i>	Wild carrot	Herb	native
<i>Delairea odorata</i>	Cape ivy	Herb	invasive
<i>Distichlis spicata</i>	Coastal salt grass	Herb	native
<i>Elymus mollis</i> subsp. <i>mollis</i>	American dune grass	Herb	native
<i>Equisetum telmateia</i> subsp. <i>braunii</i>	Giant horsetail	Herb	native
<i>Erodium botrys</i>	Long-beaked storksbill	Herb	introduced
<i>Erodium cicutarium</i>	Redstem filaree	Herb	invasive
<i>Erythranthe guttata</i>	Seep monkeyflower	Herb	native
<i>Eschscholzia californica</i>	California poppy	Herb	native
<i>Eucalyptus globulus</i>	Blue gum	Tree	invasive
<i>Euphorbia</i> sp.	spurge	Herb	
<i>Festuca myuros</i>	Rattail sixweeks grass	Herb	invasive
<i>Festuca perennis</i>	Italian rye grass	Herb	invasive
<i>Fragaria vesca</i>	Wood strawberry	Herb	native
<i>Frangula purshiana</i>	Cascara	Shrub	native
<i>Galium aparine</i>	Goose grass	Herb	native
<i>Genista monspessulana</i>	French broom	Shrub	invasive
<i>Geranium dissectum</i>	Cut-leaved geranium	Herb	invasive
<i>Glebionis segetum</i>	Corn chrysanthemum	Herb	introduced
<i>Grindelia stricta</i> var. <i>platyphylla</i> *	Pacific gum plant	Herb	native

<i>Heracleum maximum</i>	Cow parsnip	Herb	native
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	Tree	native
<i>Holcus lanatus</i>	Common velvet grass	Herb	invasive
<i>Hordeum murinum</i>	Wall barley	Herb	invasive
<i>Hypericum perforatum</i> subsp. <i>perforatum</i>	Klamathweed	Herb	invasive
<i>Hypochaeris radicata</i>	Rough cat's-ear	Herb	invasive
<i>Ilex aquifolium</i>	English holly	Tree	invasive
<i>Iris</i> sp.	Iris	Herb	
<i>Juncus bufonius</i>	Toad rush	Herb	native
<i>Linum bienne</i>	Western blue flax	Herb	introduced
<i>Lonicera hispidula</i>	Pink honeysuckle	Shrub	native
<i>Lonicera involucrata</i> var. <i>involucrata</i>	Twinberry	Shrub	native
<i>Lotus corniculatus</i>	Bird's-foot treefoil	Herb	introduced
<i>Lupinus arboreus</i>	Yellow bush lupine	Shrub	native/invasive
<i>Lupinus rivularis</i>	Riverbank lupine	Herb	native
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	Herb	invasive
<i>Maianthemum dilatatum</i>	False lily-of-the-valley	Herb	native
<i>Malva arborea</i>	Tree mallow	Shrub	introduced
<i>Marah oregana</i>	Coast man-root	Herb	native
<i>Matricaria discoidea</i>	Pineapple weed	Herb	introduced
<i>Medicago polymorpha</i>	California burclover	Herb	invasive
<i>Melilotus indicus</i>	Sourclover	Herb	introduced
<i>Morella californica</i>	Wax myrtle	Shrub	native
<i>Notholithocarpus densiflorus</i> var. <i>densiflorus</i>	Tanoak	Tree	native
<i>Oenothera elata</i>	Evening primrose	Herb	Native
<i>Oxalis pes-caprae</i>	Bermuda buttercup	Herb	
<i>Parentucellia viscosa</i>	Yellow parentucellia	Herb	invasive
<i>Pinus muricata</i>	Bishop pine	Tree	native
<i>Pinus radiata</i>	Monterey pine	Tree	native/ invasive
<i>Plantago coronopus</i>	Cut-leaf plantain	Herb	introduced
<i>Plantago erecta</i>	Dotseed plantain or California plantain	Herb	native

<i>Plantago lanceolata</i>	English plantain	Herb	invasive
<i>Plantago major</i>	Common plantain	Herb	introduced
<i>Poa annua</i>	Annual blue grass	Herb	introduced
<i>Poa pratensis</i> subsp. <i>Pratensis</i> *	Kentucky blue grass	Herb	introduced
<i>Polypogon monspeliensis</i>	Annual beard grass	Herb	invasive
<i>Polystichum munitum</i>	Western sword fern	Herb	native
<i>Potentilla anserina</i>	Silverweed	Herb	native
<i>Prunella vulgaris</i>	Common self-heal	Herb	native
<i>Prunella vulgaris</i> var. <i>lanceolata</i> *	Self-heal (lg lvs/erect)	Herb	native
<i>Pseudognaphalium luteoalbum</i>	Weedy cudweed	Herb	introduced
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas-fir	Tree	native
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	Western bracken fern	Herb	native
<i>Ranunculus californicus</i>	California buttercup	Herb	native
<i>Raphanus sativus</i>	Wild radish	Herb	invasive
<i>Rhododendron sp.</i>	rhododendron (planted)		
<i>Ribes sanguineum</i> var. <i>glutinosum</i>	Red-flowering currant	Shrub	native
<i>Rosa californica</i>	California rose	Shrub	native
<i>Rosa sp.</i>	Rose	Shrub	
<i>Rubus armeniacus</i>	Himalayan blackberry	Shrub	invasive
<i>Rubus parviflorus</i>	Thimbleberry	Shrub	native
<i>Rubus ursinus</i>	California blackberry	Herb	native
<i>Rumex acetosella</i>	Sheep sorrel	Herb	invasive
<i>Rumex crispus</i>	Curly dock	Herb	invasive
<i>Salix lasiolepis</i>	Arroyo willow	Tree	native
<i>Sambucus racemosa</i> var. <i>racemosa</i>	Red elderberry	Shrub	native
<i>Schoenoplectus pungens</i> var. <i>longispicatus</i>	Common three- square bulrush	Herb	native
<i>Scrophularia californica</i>	California figwort	Herb	native
<i>Sonchus asper</i> subsp. <i>asper</i>	Prickly sow thistle	Herb	introduced
<i>Stachys ajugoides</i>	Hedge-nettle	Herb	native
<i>Stellaria media</i>	Common chickweed	Herb	introduced

<i>Streptanthus</i> sp.	Jewel flower	Herb	
<i>Toxicodendron diversilobum</i>	Poison-oak	Shrub	native
<i>Trifolium dubium</i>	Little hop clover	Herb	introduced
<i>Trifolium repens</i>	White clover	Herb	introduced
<i>Ulex europaeus</i>	Common Gorse	Shrub	invasive
<i>Vicia gigantea</i>	Giant vetch	Herb	native
<i>Vicia hirsuta</i>	Hairy vetch	Herb	introduced
<i>Vicia sativa</i> subsp. <i>sativa</i>	Spring vetch	Herb	introduced
<i>Vinca major</i>	Greater periwinkle	Herb	invasive
<i>Viola adunca</i>	Western dog violet	Herb	native
<i>Zantedeschia aethiopica</i>	Calla-lily	Herb	invasive

