

Big Lagoon Slipout Repair “Big Lagoon Wall”

STATE ROUTE 101 IN HUMBOLDT COUNTY
01-HUM-101 - PM 111.4/111.6
EA 0B430 / EFIS 0112000127

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation

August 2014



General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Humboldt County, California. The document describes the proposed project, the existing environment that could be affected by the project, potential impacts from the project, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this Initial Study.
- Additional copies of this document are available for review at the District 3 Office at 703 B Street, Marysville, at the District 1 Office at 1656 Union Street, Eureka, at the Eureka Public Library at 1313 3rd Street, Eureka, and at the Trinidad Public Library at 380 Janis Court, Trinidad. This document may be downloaded at the following website address: <http://www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm>.
- We would like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
- Submit comments via U.S. mail to:
Caltrans
Adele Pommerenck, Branch Chief
Environmental Management M2 Branch
703 B Street, Marysville, CA 95901
- Send comments via e-mail to adele.pommerenck@dot.ca.gov.
- Be sure to submit comments by the deadline: October 6, 2014

What happens next:

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

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: *Adele Pommerenck, Branch Chief, 703 B Street, Marysville, CA 95901; (530) 741-4215* Voice, or use the California Relay Service TTY number, 1-800-735-2929.

Big Lagoon Slipout Repair “Big Lagoon Wall”

Initial Study with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

Sandra Rosas, Office Chief
North Region Environmental Services, North (Eureka)
California Department of Transportation

Date of Approval

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), proposes permanent restoration of State Route 101 in Humboldt County in the Big Lagoon area from postmile (PM) 111.4 through PM 111.6. The project will reconstruct the southbound lane, the southbound shoulder and associated drainage elements. Three structures are proposed to restore and stabilize the project area: one timber lagging soldier pile ground anchor wall and two anchored pile systems. Temporary access roads will be constructed at each structure location. One-way controlled traffic with a temporary signal system will be used throughout the construction of all three structures.

Determination

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

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

- The proposed project would have no effect on aesthetics, agriculture/forest resources, air quality, cultural resources, geology/soils, hazards/hazardous materials, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, and utilities/service systems.
- The proposed project would have a less than significant effects with mitigation to biological resources and hydrology/water quality. Impacts would be offset through implementation of avoidance, minimization and mitigation measures and best management practices as well as compliance with permit requirements.

Sandra Rosas, Office Chief
North Region Environmental Services, North Eureka)
California Department of Transportation

Date

Section 1 – Proposed Project

Project Title

Big Lagoon Slipout Repair “Big Lagoon Wall” Project

Lead Agency & Project Sponsor’s Name, Address and Contact Person

California Department of Transportation

Attn: Adele Pommerenck

703 B Street

Marysville, CA 95901

Project Location

The project is located on State Route (SR) 101, in Humboldt County in the Big Lagoon area, approximately 0.25 miles south from the intersection of SR 101 and Kane Ridge Road and continuing south for approximately 1,031 feet.

Purpose and Need

The purpose of this project is to provide permanent restoration to three localized slope failure areas on SR 101 in Humboldt County. The project is needed to restore and stabilize the area to prevent future roadway failures from occurring after storm events.

Description of Project

The California Department of Transportation (Caltrans) proposes permanent restoration to SR 101 from PM 111.4 through PM 111.6 in Humboldt County. In March 2011, severe storm events resulted in three localized slope failures in the southbound lane and shoulder of SR 101. Two of the slope failures were observed at each end of an existing 200-foot long micropile buttress (steel micropiles, or mini piles (small diameter long steel rods or pipes), drilled and grouted into the ground to provide a deep, stable foundation) constructed in 2009; the third slipout location was further south of the existing micropile buttress, which resulted in the destabilization of the existing roadway. The project will reconstruct the southbound lane, the southbound shoulder and associated drainage elements. Three structures are proposed to restore and stabilize the project area: one timber lagging soldier pile ground anchor wall and two anchored pile systems. Temporary access roads will be constructed at each structure location. One-way traffic control with a temporary signal system will be used throughout construction of all three structures.



Picture of an existing micropile buttress, the anchor pile systems will look similar after construction.

Structure 1 – Soldier Pile Ground Anchor Wall with Timber Lagging

Approximately two miles north of the intersection of SR 101 and LP Mill Road, a soldier pile ground anchor wall with timber lagging. The soldier pile is used to ensure stability; lagging between the soldier piles are installed to retain the earth between the soldier piles; and the ground anchors are used for horizontal stabilization. When installed, the wall will be 140 feet in length and approximately 25 feet in height. Work includes approximately 20 cast-in-drilled hole (CIDH) H-piles that will be placed at approximately 8.25 foot intervals. The timber lagging will be placed using top down construction. Additionally, a 15-foot wide temporary access road will be constructed along the face of the wall for horizontal drilling and other construction activities. The construction of the temporary access road entails removal of the first two feet of existing topsoil then excavation to an elevation a few feet below the placement of ground anchors. The top two feet of topsoil will be stored for later use in temporary roadway removal and restoration. Potentially, areas of the temporary access road may include placement of temporary, clean, graded, crushed gravel for drainage and sediment control purposes. One or two walers (a horizontal timber or beam used to brace or support an upright member (soldier pile) along an excavation) will then be constructed utilizing the temporary access road. Approximately 20 ground anchors per waler will be placed with a horizontal drilling rig. The existing drainage system at PM 111.42 includes an 18"-diameter corrugated steel pipe (CSP) culvert that will be reconstructed. The existing 24" welded steel pipe (WSP) culvert that will intersect the proposed wall and will be protected in place and will extend through the wall. The proposed wall underdrain will connect with the new culvert, requiring that a two foot diameter alder tree be removed.

The face of the wall will be backfilled. A see-through matte galvanized metal barrier (ST-10) with an attached bicycle rail will be placed at the top of the wall. The proposed barrier and attached tubular bicycle rail combination was selected to maximize view shed opportunities since the project limits are within the Harry Merlo State Recreation area and the Pacific Coast Bike Route. Upon completion of the wall, the temporary access road will be removed and backfilled; the reserved topsoil will be placed and regraded; and the area replanted with native vegetation.



Similar soldier pile retaining wall post construction.

Structures 2 and 3 – Anchored Pile Systems

Approximately 2.08 miles north of the intersection of SR 101 and LP Mill Road, two proposed anchored pile systems will be installed to the south and to the north of the existing micropile buttress. There is an approximate 50-foot gap between the proposed anchor pile system and the existing micropile buttress at each end. A 15-foot wide temporary access road will be constructed below each of the anchored pile systems for construction access. The proposed anchor pile systems will require minimal excavation. The construction of the temporary access road entails removing the first two feet of existing topsoil, then excavating to the elevation where the anchor pile cap will be constructed. Potentially, areas of the temporary access road may include placement of temporary, clean, graded, crushed gravel for drainage and sediment control purposes. Each anchor pile system will have cast-in-drilled hole (CIDH) W-piles placed at five foot intervals. Ground anchors will be horizontally drilled at an angle 15 to 20 degrees from a horizontal plane into the soil. A reinforced concrete beam that will encase both the ground anchor and the exposed W-piles will be placed along the entire length of the anchor pile system and will be buried under minimal backfill.

The anchor pile system that is proposed south of the existing micropile buttress is approximately 320 feet long; has an angle point located at approximately 100 feet into the horizontal layout resulting in a slight flare along the wall toward the lagoon; and will be offset approximately 28 feet left of the centerline at the south end of the wall, transitioning to 36 feet left of the road centerline at the anchor pile system terminus. Approximately 65 CIDH piles will be installed for this anchor pile system.

The anchor pile system that is proposed to the north of the existing micropile buttress is approximately 205 feet long; will have an inflection point located at approximately 95 feet into the horizontal layout resulting in a slight flare; and will be offset approximately 33 feet left of the centerline at the south end of the wall transitioning to 29 feet left of the road centerline at the anchor pile system terminus. Approximately 40 CIDH piles for the southern anchor pile system will be installed.

Other work includes re-establishing the shoulder at all three structures, replacing the structural section at all three locations, placing crash attenuators at the ends of the soldier pile ground anchor wall, striping, and a final full width pavement overlay between the temporary signal systems due to wear and tear of mobilizing construction equipment in and out of the work zone. Caltrans is required to meet FHWA Safety standards where possible. For this project, the southbound shoulder will vary from four feet at the soldier pile retaining wall to eight feet for the remainder of the project. Increased shoulder widths have increased safety benefits since it provides additional recovery for errant vehicles and wider travel area for cyclists that choose to use the shoulder. The northbound shoulder will not be widened due to concerns regarding environmentally sensitive habitat and species. The length of construction is expected to be two construction seasons. The Soldier Pile ground anchor wall will be constructed in year one; and the anchor pile systems will be constructed in year two or in combination such that there is minimal disruption to the traveling public. Upon completion of the anchor pile systems, the temporary access roads will be removed, regraded, and replanted with native vegetation to match adjacent conditions. These structures are expected to have a design life of 75 years.

Staging, Storage and Disposal

Two staging areas have been identified: one pullout is located approximately 0.8 miles south of Kane Ridge Road at PM 111.87 and another pullout approximately 0.67 miles south of Kane Ridge Road at PM 111.72.

Excess soil will be disposed of at a commercial disposal site.

Equipment fueling and temporary storage of waste materials (i.e. drill spoils) on site will be necessary, and will be performed in accordance with current regulations, Best

Management Practices (BMPs), and an approved Storm Water Pollution Prevention Plan (SWPPP) will be required. Specific fueling and waste handling locations and procedures will be clearly identified in the SWPPP.

Traffic Control

Construction signs will be installed to warn the traveling public; as well as, stop signs and traffic control lights. During construction, temporary one-way reversible traffic control will be used during work hours. To heighten motorist awareness of cyclists traveling within the construction zone, “Share the Road” signs will be placed along the roadway and temporary traffic signal systems will be set so the cyclist’s travel speed is the controlling factor when calibrating the timing.

Construction Schedule

The number of construction seasons is dependent on permitting restrictions. Currently, construction is estimated to take 225 working days, over two construction seasons. The anticipated order of work is the soldier pile ground anchor wall with timber lagging is expected to occur in season one and the two anchor pile systems are scheduled in season two. The construction schedule will accommodate special events and/or holiday schedules.

Surrounding Land Uses and Settings

Existing land use within the project vicinity is Coastal Commercial Timberland. The surrounding areas are both state and state park land. There are a few rural residential parcels adjacent to the state park land approximately 0.25 miles from the project limits on SR 101. No alteration to present or planned land use would occur as a result of the proposed project.

According to the North Coast Area Plan of the Humboldt County Local Coastal Program the land use is designated to protect productive timberlands for long-term production of merchantable timber.

Permits and Approvals Needed

The following environmental permits and approvals are required for this project:

- Federal Endangered Species Act Section 7 Consultation, U.S. Fish and Wildlife Service
- 401 Water Quality Certification, North Coast Regional Water Quality Control Board
- Non-Reporting 404 Permit, United States Army Corps of Engineers

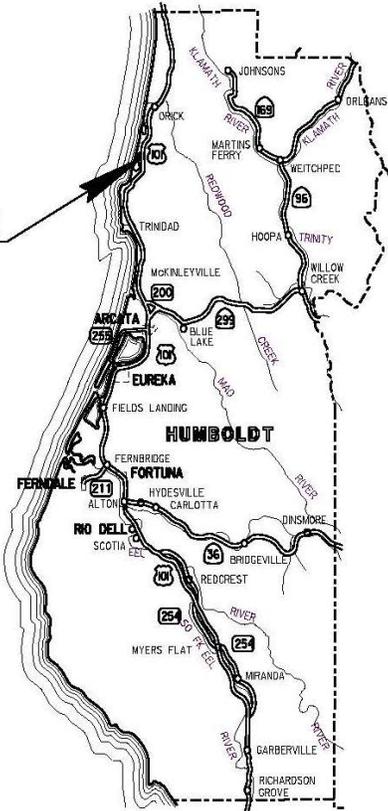
- 1602 Streambed Alteration Agreement, California Department of Fish and Wildlife
- Humboldt County Local Coastal Development Permit

Zoning

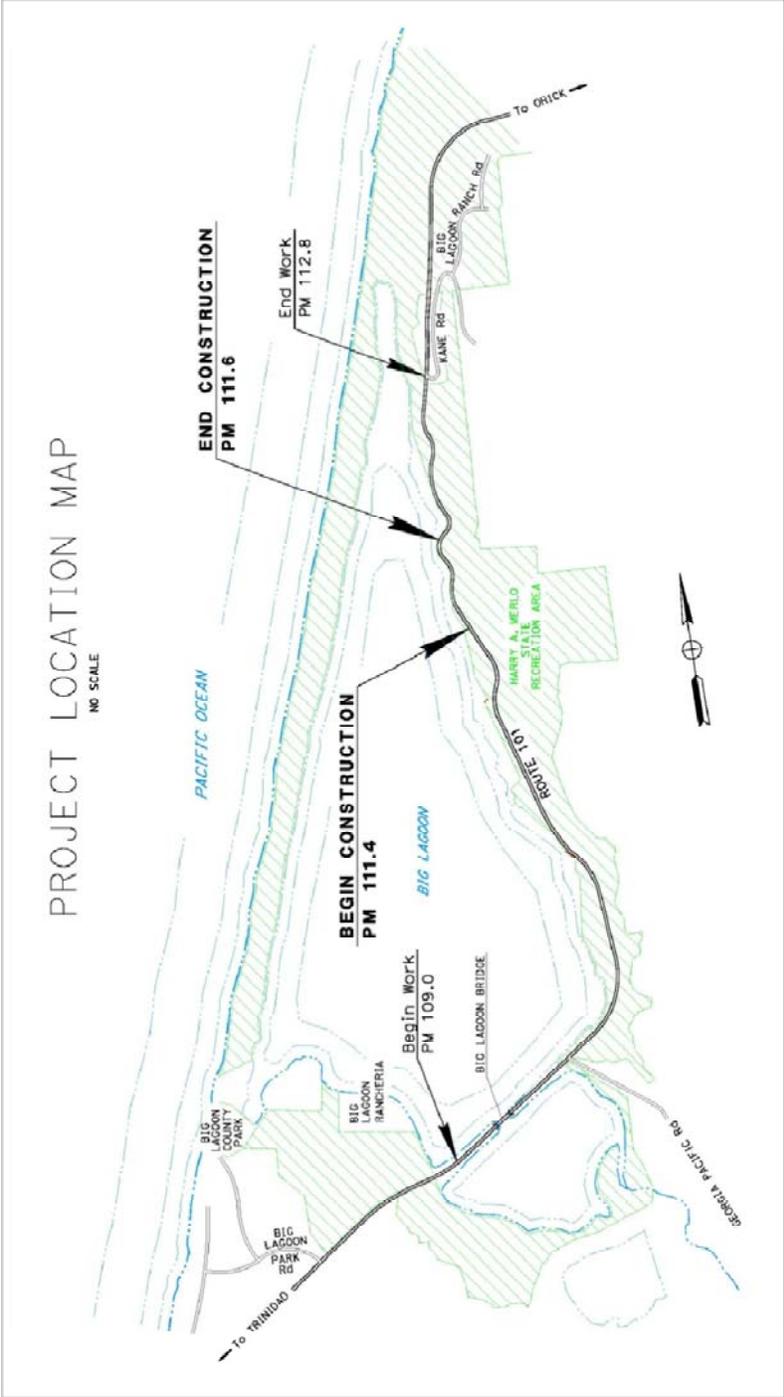
The proposed project area is zoned as “Public Recreation” under the Humboldt County General Plan and the North Coast Area Plan of the Humboldt County Local Coastal Program.

VICINITY MAP

PROJECT LOCATION
HUM-101-PM 111.4/111.6



No Scale



Section 2 – Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project. Please see the CEQA checklist for additional information. Any boxes not checked represent issues that were considered as part of the scoping and environmental analysis for the project, but for which no significant impacts were identified. Therefore, no further discussion of these issues is in this document.

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

Section 3 – CEQA Checklist

01-HUM-101

111.4/111.6

01-0B430

Dist.-Co.-Rte.

P.M/P.M.

E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

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

Explanation: "No Impact" determinations in this section are based on the information provided in the Visual Impact Assessment dated July 31, 2014.

II. AGRICULTURE AND FOREST RESOURCES 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: The project is located within California State Parks' boundaries; however, based on the scope, description, and location of the proposed project a "no Impact" determination is made in this section.

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" determinations in this section are based on the Air Quality Assessment Report dated January 22, 2014.

IV. BIOLOGICAL RESOURCES: 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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations and “Less Than Significant with Mitigation” determinations in this section are based on information provided in the Natural Environment Study (NES) dated August, 2014, and further discussion begins on page 22.

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations in this section are based on the Cultural Resources Report dated March 24, 2014.

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

VII. GREENHOUSE GAS EMISSIONS: Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. Further discussion begins on page 61.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: "No Impact" determinations in this section are based on the information contained in the Initial Site Assessment prepared in February 28, 2013.

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Explanation: “No Impact” determinations and “Less Than Significant Impact” determinations in this section are based on information provided in the Water Quality Assessment Report dated July 2014 and the Flood Plain Evaluation Report Summary dated July 10, 2013.

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

XI. MINERAL RESOURCES: 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--	--------------------------------	---------------------------------------	------------------------------	-----------

XII. NOISE: Would the project result in:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Explanation: "No Impact" determinations in this section are based on the information provided in the Noise Assessment Report dated January 22, 2014.

XIII. POPULATION AND HOUSING: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

XIV. PUBLIC SERVICES:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

XV. RECREATION:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

XVI. TRANSPORTATION/TRAFFIC: Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--------------------------------	---------------------------------------	------------------------------	-----------

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Section 4 – Affected Environment, Environmental Consequences, and Mitigation Measures

Biological Resources

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. This section also includes information on wildlife corridors and habitat fragmentation.

Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species and [Wetlands and Other Waters] are also discussed below.

Coastal “Environmentally Sensitive Habitat Areas” (ESHAs)

The Humboldt Bay Local Coastal Development Program (LCP) defines an ESHA as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activities and developments” (Coastal Act Section 30107.5).

These include:

- Rare and Endangered Species habitat
- Coastal wetlands and lagoons

Several of these areas exist within the project’s Biological Study Area (BSA) including; listed species habitat, coastal wetlands, riparian habitat, NCSC, and Big Lagoon.

Potential impacts to these resources are discussed below.

Redwood Forest

Affected Environment

The Sequoia Sempervirens Forest Alliance (Redwood Forest) present within the study area is dominated by redwoods (*Sequoia sempervirens*) with other trees present in the canopy including grand fir (*Abies grandis*), Sitka spruce (*Picea sitchensis*) and Cascara (*Frangula purshiana*). A thick stratum of shrubs including evergreen huckleberry (*Vaccinium ovatum*), salal (*Gaultheria shallon*), red elderberry (*Sambucus racemosa*), Thimbleberry (*Rubus parviflorus*), and Salmonberry (*Rubus spectabilis*) is present in the

understory with ferns and herbaceous flowering plants including lady fern (*Athyrium filix-femina*), sword fern (*Polystichum munitum*), wild ginger (*Asarum caudata*) candy flower (*Claytonia sibirica*) and California vanilla grass (*Anthozanthum occidentale*). Redwood forest is ranked as G3 S3 and is considered a Natural Community of Special Concern (CDFG2010). CDFW's natural community rarity rankings follow NatureServe's 2009 NatureServe Conservation Status Assessment: Methodology for Assigning Ranks, in which all alliances are listed with a global (G) and state(S) rank. Natural Community of Special Concern are those natural communities that are ranked S1 to S3 (CDFG 2010), where 1 is critically imperiled, 2 imperiled, and 3 vulnerable.

Environmental Consequences

Impact criteria define the level of direct and indirect impacts on Natural Communities. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

Does the project result in:

- Substantial loss of common natural communities that provide habitat for wildlife?
- Substantial reduction in habitat for fish, wildlife, or plants?
- Disruption of natural wildlife movement corridors?
- Fragmentation or isolation of wildlife habitats, especially riparian, oak woodland, and wetland habitats?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impacts to the Redwood forest are expected to be minimal. None of the dominant tree species in these alliances will be impacted, and the majority of the ground disturbance will occur in previously disturbed areas and/or areas close to the highway.

Avoidance, Minimization, and/or Mitigation Measures

- The roadway will not be upgraded to standard shoulders in any areas where trees associated with a NCSC would be impacted.
- Measures to avoid the introduction and spread of invasive species will be employed and any known invasive species within the project area (i.e. scotch broom [*Cytisus scoparius*], pampas/ jubata grass [*Cortaderia selloana*] and Spanish heather [*Erica lutistanica*]) will be removed, contained and disposed of properly.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion. Three 6-8 inch dbh Alder trees will be

removed by the project and will be replaced in kind onsite (see Table 1 “Impacts to Vegetation Communities and Trees in the Project Area”).

With the incorporation of these minimization measures there will be a less than significant impact to the Redwood Forest.

Sitka Spruce Forest

Affected Environment

The *Picea sitchensis* Forest Alliance (Sitka spruce Forest), present within the study area is dominated by Sitka spruce and grand fir with other trees including red alder (*Alnus rubra*) and coast redwood. The understory is dominated by shrubs, ferns and herbaceous vegetation including evergreen huckleberry, twinberry honeysuckle (*Lonicera involucrata*), coast silk tassel (*Garrya elliptica*), California blackberry (*Rubus ursinus*), Thimbleberry, oceanspray (*Holodiscus discolor*) wild cucumber (*Marah fabaceus*), sword fern, bracken fern (*Pteridium aquilinum*), and false lily-of-the-valley (*Myanthemum dilatatum*). Sitka Spruce Forest is ranked G5S2 and is considered a NCSC (CDFG2010).

Environmental Consequences

Impacts to Grand fir-Sitka spruce forest are expected to be minimal. None of the dominant tree species in these alliances will be impacted, and the majority of the ground disturbance will occur in previously disturbed areas and/or areas close to the highway.

Avoidance, Minimization, and/or Mitigation Measures

- The roadway will not be upgraded to standard shoulders in any areas where trees associated with a NCSC would be impacted.
- Measures to avoid the introduction and spread of invasive species will be employed and any known invasive species within the project area (i.e. scotch broom, pampas/ jubata grass and Spanish heather) will be removed, contained and disposed of properly.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion Three 8-12 inch dbh Alder trees will be removed by the project and will be replaced in kind onsite (see Table 1 “Impacts to Vegetation Communities and Trees in the Project Area”).

With the incorporation of these minimization measures there will be a less than significant impact.

Riparian

Affected Environment

A riparian area exists within the area required for access to construct the timber lagged soldier pile tieback wall. This riparian area is associated with the unnamed ephemeral drainage that flows through the culvert on the southbound side of the highway.

Environmental Consequences

Impacts within the riparian area occur as the result of access necessary to construct the soldier pile tie back wall. These impacts include approximately 1747 square feet of ground disturbance, including the removal of the shrubs, saplings and herbs. One two-foot alder will require removal due to grading associated with drainage installation. Impacts to the riparian area will be temporary, as the entire area will be restored and revegetated upon completion.

Avoidance, Minimization, and/or Mitigation Measures

- The roadway will not be upgraded to standard shoulders in any areas where trees associated with a NCSC would be impacted.
- Measures to avoid the introduction and spread of invasive species will be employed and any known invasive species within the project area (i.e. scotch broom, pampas/ jubata grass and Spanish heather) will be removed, contained and disposed of properly.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion. One two-foot Alder tree will be removed by the project and will be replaced in kind onsite (see Table 1 “Impacts to Vegetation Communities and Trees in the Project Area”).

With the incorporation of these minimization measures there will be a less than significant impact.

Table 1: Impacts to Vegetation Communities and Trees in the Project Area.

	Area		Trees		
	SF	Acreage	#	species	Dbh
Redwood Forest Alliance					
	5704	0.13	3	Alder	6-8in
Riparian					
	1747	0.04	1	Alder	24in
Sitka Spruce Forest Alliance					
	8594	0.20	3	Alder	8-12 in

WETLANDS AND OTHER WATERS OF THE UNITED STATES

Regulatory Setting

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

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar 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 Nationwide Permit may be permitted under one of USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 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, this EO states that a federal agency, such as the 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.

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

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

Affected Environment

The wetland study area contained three jurisdictional Other Waters of the U.S.; a vegetated roadside ditch, a wetland area associated with the ditch and a seasonal drainage that crosses SR 101 at the southern end of the project footprint. One single parameter wetland (Coastal) also exists within the project area. Three wetland or jurisdictional Other Waters of the U.S. features were observed during the wetland delineation survey and determined to be jurisdictional under sections 401 and 404 of the CWA. These features consisted of the following categories of jurisdictional features:

- Relatively Permanent Waters (RPWs)- waters that flow continuously at least seasonally (typically at least 3 months of the year) and are not navigable, but are tributaries to a Traditional Navigable Water ¹.
- Non-RPWs- waters that do not have continuous flow at least seasonally but have a significant nexus to a Traditional Navigable Water.
- Wetlands- areas that are inundated or saturated with surface or ground water at a frequency and duration sufficient to support and typically do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are considered jurisdictional under the CWA if they have three parameters (hydrophytic vegetation, hydric soils and hydrology) characteristic of these features and have a significant nexus to a Traditional Navigable Water.

Seasonal Drainage (RPW)

A seasonal drainage exists within the project footprint study *area* and is considered an RPW. This drainage begins on the east side of SR 101, flowing underneath the highway through a culvert at PM 111.43. The culvert outlets approximately 15 feet downslope of the highway then flows into Big Lagoon (approximately 300 feet away). This drainage typically has no flow for the majority of the dry season.

Drainage Ditch (Non-RPW)

A drainage ditch exists along the northbound shoulder of the highway within the project study area. The ditch begins to the south of the project limit and continues north to the culvert inlet/seasonal drainage at PM 111.43. The northern most portion of the ditch flows into the culvert at PM 111.43 and the southernmost portion of the ditch flows south into a culvert/unnamed drainage outside the project limits near PM 111.05. This ditch collects primarily roadside drainage; however, it has a significant nexus to Big Lagoon (a traditional navigable water), and is therefore jurisdictional.

USACE Wetland (Drainage Ditch)

A USACE jurisdictional wetland exists within the project study *area*, associated with the drainage ditch. The wetland vegetation is dominated by marsh baccharis (*Baccharis glutinosa*), Coltsfoot (*Petasites frigidus*) and creeping buttercup (*Ranunculus repens*). The wetland is directly adjacent to the drainage ditch (Non-RPW) with a significant nexus to Big Lagoon (a traditional navigable water).

Coastal Wetland (1 Parameter)

A one parameter wetland exists within a compacted graveled pullout within the project footprint study area. This area is dominated with facultative wetland species such as

Traditional Navigable Water include all waters subject to the ebb and flow of the tide, or waters that are presently used, have been used in the past, or may be used in the future to transport interstate or foreign commerce, and all waters that are navigable in fact under federal law for any purpose.¹

coltsfoot, creeping buttercup, and velvet grass, which are very common in coastal environments. Only one obligate wetland species, hedge nettle (*Stachys ajugoides*) existed in a very small quantity (5% cover in the herb stratum). This area qualifies as a coastal wetland; however, it is not providing the functions and values a typical wetland would provide and it is not of high quality.

Table 2: Wetlands and Waters in the Project Area

	Present within Study Area	
	Length (ft)	Area (Sq.ft/Ac.)
OWUS		
<i>RPW</i>	131 ft	524 SF/0.012 ac
<i>culverted RPW</i>	70 ft	140 SF/0.003 ac
<i>Non RPW</i>	348 ft	696 SF/0.016 ac
Wetlands		
<i>USACE</i>	<i>n/a</i>	345 SF/ 0.008 ac
<i>Coastal</i>	<i>n/a</i>	2,160 SF/0.05 ac.

Environmental Consequences

Impact criterias define the level of direct and indirect impacts on Wetlands and other waters of the U.S.. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

Does the project result in:

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

The proposed project is expected to temporarily impact approximately 0.01 acres of OWUS resulting from construction access and other activities required for constructing the soldier pile ground anchor wall with timber lagging. The project is also expected to result in approximately 30 SF (0.001 ac) permanent impacts to culverted OWUS; however, these impacts will be beneficial as they will shorten the length of the culvert and increase the length of the open channel drainage by approximately 15 feet. Therefore, permanent impacts to RPWs are expected to be self mitigating.

Impacts to coastal wetlands are minimal (0.009 ac), and will result in only a temporal loss of low quality, marginal coastal wetlands. Impacts to all wetlands and other waters are summarized in the table below.

Table 3: Impacts to Wetlands and Waters in the Project Area

	Temporary		Permanent		Total	
	Length (ft)	Area (SF/Ac.)	Length (ft)	Area (SF/Ac.)	Length (ft)	Area (SF/Ac.)
OWUS						
<i>RPW</i>	88 ft	352 SF/ 0.008 ac	0	0	88 ft	352 SF/ 0.008 ac
<i>Culverted RPW</i>	55 ft	110 SF/ 0.002 ac	~15 ft	30 SF/0.001 ac	70 ft	140 SF/ 0.003 ac
<i>Non RPW</i>	0	0	0	0	0	0
Wetlands						
<i>USACE</i>	0	0	0	0	0	0
<i>Coastal</i>	n/a	373 SF/ 0.009 ac	0	0	n/a	373 SF/ 0.009 ac

- Impacts to coastal wetlands would be mitigated onsite, offsite and/or at a approved mitigation bank at a ratio to be determined.

ANIMAL SPECIES

Regulatory Setting

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

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Impact criteria define the level of direct and indirect impacts on animal species. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

Does the project result in:

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

Migratory Birds

Affected Environment

The Federal Migratory Bird Treaty Act (MBTA) protects migratory birds, their nests, and eggs from disturbance or destruction.

Environmental Consequences

The proposed project should not result in any direct impacts to migratory birds or their nests. Implementation of the Avoidance and Minimization measure listed below, impacts to nesting birds are expected to be minimal.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to Migratory birds:

- Vegetation will be removed outside of the nesting season (February 1 and September 15). If vegetation has not been cleared outside of the breeding season, the following guidelines will be observed:
 - Surveys will be conducted (no earlier than two days prior to vegetation removal) by a qualified biologist to identify and locate nesting birds
 - If bird nests are found:
 - Buffer areas will be established around active nests so construction activities that disturb birds will not occur within the buffer area.
 - The areas will be marked as environmentally sensitive and nests will be monitored by a qualified biologist for disturbance behaviors.

With the incorporation of these avoidance and minimization measures there will be less than significant impacts on migratory birds.

Del Norte Salamander (DNS)

The Del Norte salamander (*Plethodon elongatus*) is a California species of special concern. DNS' occur in cool, moist mixed conifer/hardwood forests dominated by large trees, with a stable micro-climate, deep litter layer and closed multi-storied canopy. These species are often associated with mesic talus slopes and road fills or under woody debris (Stebbins, 2003).

Affected Environment

The mesic coastal forest within the project BSA is likely to provide habitat for this species. Although this species is likely to occur in areas within the BSA and project footprint, DNS is less likely to occur in the northern part of the project where the majority of impacts from the anchor pile buttress will occur since these areas are more open, arid and disturbed and more highly influenced by edge effects associated with the highway.

Environmental Consequences

The proposed project has potential to directly impact DNS; however with proper implementation of the avoidance and minimization measures listed below, the likelihood of direct impacts to this species will be reduced.

Avoidance, Minimization, and/or Mitigation Measures

- A qualified biologist will be onsite prior to, and during any initial disturbance (i.e. clearing /grubbing and/or grading) of areas where DNS are likely to occur.
- Any DNS located during construction of the project will be relocated to a safe and appropriate off-site location determined by a qualified biologist.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Del Norte salamander.

Northern red-legged frog (NRLF)

The Northern red legged frog (*Rana aurora*) is a California species of special concern. NRLF occur in humid forests, woodlands and stream sides, usually near permanent water in dense riparian cover. During the non-breeding season, NRLF are found in damp forests/woods and meadows.

Affected Environment

Habitat for the species is likely to exist in the dense ground cover in the mesic coastal forest within the project BSA. Although this species is likely to occur in areas within the

BSA and project footprint, NRLF is less likely to occur in the northern part of the project where the majority of impacts from the anchor pile buttress will occur; since these areas are more open, arid, disturbed and more highly influenced by edge effects associated with the highway. The southern portion of the project where the seasonal drainage exists (at proposed soldier pile ground anchor wall with timber lagging location) provides better cover for this species.

Environmental Consequences

The proposed project has potential to directly impact NRLF; however, with proper implementation of the avoidance and minimization measures listed below, the likelihood of direct impacts to this species will be reduced.

Avoidance, Minimization, and/or Mitigation Measures

- A qualified biologist will be onsite prior to, and during any initial disturbance (i.e. clearing /grubbing and/or grading) of areas where NRLF could occur, to clear the area of any NRLF.
- Any NRLF located during construction of the project will be relocated to a safe appropriate off-site location determined by a qualified biologist.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Northern red-legged frog.

White-footed vole (WFV)

The white-footed vole (*Arborimus albipies*) is a California species of special concern. This species prefers mature coastal forest near small, clear streams with dense alder and shrubs. WFV occupy the habitat from the ground surface to the canopy and feed in all layers and nests on the ground under logs or rocks.

Affected Environment

The preferred habitat for the species is likely to exist in the dense shrub layer and ground cover in the mesic coastal forest within the project BSA. WFV is likely to occur within the project area.

Environmental Consequences

The proposed project has potential to directly impact WFV; however, with proper implementation of the avoidance and minimization measures listed below, the likelihood of direct impacts to this species will be reduced.

Avoidance, Minimization, and/or Mitigation Measures

- A qualified biologist will be onsite prior to and during initial disturbance (i.e. clearing /grubbing and/or grading) to clear any areas where WFV could occur.

- Any WFV located during construction of the project will be allowed to escape or will be relocated to a safe appropriate off-site location.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the White-footed vole.

Humboldt marten

The Humboldt marten (*Martes americana humboldtensis*) is a California species of special concern that may meet criteria for listing. This species is associated with late successional coniferous forest in the coastal redwood zone. They prefer forests with low overhead cover, typical of old growth forests.

Affected Environment

Although the mesic coastal forest within the project BSA and project footprint provides many of the preferred habitat components associated for this species (large trees with structure, coarse woody debris and dense shrub layer), it is highly unlikely to occur since the BSA is open and fragmented.

Environmental Consequences

The proposed project is unlikely to impact the Humboldt marten and will have no effect on the habitat. Any potential impacts to this species would result from indirect noise disturbance; however, even noise impacts to this species are highly unlikely. Proper implementation of the avoidance and minimization measures will further reduce the likelihood of direct impacts to this species.

Palid bat

Silver-haired bat

Yuma myotis

Affected Environment

No protocol surveys were conducted for Bat Species of Special Concern. Palid bat (*Antrozous palidus*), Silver-haired bat (*Lasionycteris noctivivans*), and Yuma myotis (*Myotis yumansis*). Large trees within the BSA likely provide cavities and/or crevices that could be used by bat species for day roosts, night roosts and, in the summer months, maternity roosts.

Environmental Consequences

The proposed project will not result in any direct impacts to bats or bat habitat. Any impacts to these species would occur as the result of indirect auditory disturbance associated with construction noise levels. Due to the high levels of noise disturbance that exists on site and the significant increase in noise levels that would occur by the structure during roosting habitat, noise impacts to bats are expected to be minimal.

However, implementation of the following avoidance and minimization measures will further reduce impacts to the species.

Avoidance, Minimization, and/or Mitigation Measures

- No trees that could provide night roosting or maternity roost habitat will be removed or altered by project activities.
- No proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels (ambient noise plus activity-generated noise) above 90 decibels (with the exception of back-up alarms) will occur within 165 feet of a known maternity roost.
- A tree assessment will be conducted to assess trees within a 165 foot buffer of project activities and determine if they provide the structural components required for roosting bats. Any trees suitable for maternity roosts will be examined for any signs or presence of bats, and follow-up surveys will be conducted.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Palid bad, Silver-haired bat and the Yuma myotis.

THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, 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 2081 of the 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 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 the CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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

Marbled Murrelet (MAMU)

Affected Environment

Marbled Murrelet (*Brachyramphus marmoratus*) is federally listed as threatened and listed as endangered by the State. No protocol surveys were conducted for marbled murrelet (MAMU). Habitat suitability for MAMU was examined within a 0.25 mile buffer of the project footprint (BIOS 2014). Potential suitable nesting/roosting habitat occurs within the 0.25 mile buffer of the project area.

Only marginal habitat for MAMU occurs within the BSA and Action Area (165 foot buffer of project activities). Although mature redwoods, sitka spruce and grand fir with large lateral limbs are present within the Action Area and could provide the structure needed to support nesting MAMU, the majority of the habitat within the Action Area is open and fragmented and the canopy closure is insufficient to provide protection from predators and the weather.

The closest documented MAMU observation is less than 0.5 miles to the north on SR 101. Numerous observations have been made offshore to the west of the project, as well as, inland within Redwood National Park (approximately 3.5 miles east of the

project on Forty-four Creek). Although the habitat within the projects Action Area is unlikely to be used by MAMU for nesting, it cannot be ruled out. Also, MAMU are very likely to fly through the area during their daily migrations between nesting areas inland and foraging areas off the coast. MAMU presence within the BSA and Action Area is assumed.

The project is located within designated critical habitat for MAMU. No trees or any other primary constituent elements will be altered; therefore no impacts to critical habitat will result from the project activities.

Impact criteria define the level of direct and indirect impacts on animal species. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

Does the project result in:

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

Environmental Consequences

The proposed project will not result in any direct impacts to MAMU or MAMU habitat. All impacts to this species are the result of indirect auditory disturbance associated with construction noise levels.

Using the FWS 2006 Guidance *Estimating the Effects of Auditory and Visual Disturbance to Marbled Murrelets in Northwestern California*, a comparison was made between the ambient noise level and the noise level a nesting MAMU would likely be subjected to as a result of implementing the project. Ambient noise level of the project area is estimated to be *moderate* (~71-80dB) to *high* (~81-90 dB). Noise levels from construction activities are estimated to also fall within the moderate to high ranges as well as the very high range (~91-100 dB) when considering backup alarms². Thus, the harassment distance for MAMU is estimated to take place within 50 meters (165 feet) of the project for all work including back-up alarms, this area is considered the project *Action Area* (i.e., the maximum area affected directly or indirectly by the project).

² USFWS Caltrans Routine Maintenance Programmatic Letter of Concurrence (USFWS 2014) excludes equipment back up alarms from the noise disturbance criteria.

The proposed project has potential to result in harassment of MAMU within the 165 foot noise disturbance buffer. However, because it is unlikely that MAMU's nest within the action area, and because no construction related noise is over 90 dB (with the exception of back-up alarms), or noise greater than 20 dB over ambient will occur during the MAMU nesting season, effects to MAMU are expected to be insignificant. Activities that generate very high levels of noise, such as guardrail installation, will occur after August 20 and within daylight hour restrictions.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to MAMU:

- No trees that could provide suitable nesting or roosting habitat for this species will be removed or altered.
- No proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels (ambient noise plus activity-generated noise) above 90 decibels (except back-up alarms) may occur during the nesting season (March 24 to September 15) (Service 2006). In addition, no human activities shall occur within visual line-of-sight of 131 feet or less from a nest (Service 2006).
- Between August 20 (date when most marbled murrelets have fledged in coastal Northern California) and September 15 (end of marbled murrelet nesting season) of any year, project activities that will generate noise above ambient levels will observe a daily work window beginning two hours post-sunrise and ending two hours pre-sunset. However, prep work that does not generate noise above ambient levels can occur during all hours.
- Guardrail installation will occur after August 20 and within daylight hour restrictions.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Marbled Murrelet.

Northern Spotted Owl (NSO)

Affected Environment

The Northern Spotted Owl (*Strix occidentalis caurina*) is listed as a threatened species by the United States Fish and Wildlife Service and as a candidate species by the California Department of Fish and Wildlife.

No protocol surveys were conducted for the NSO. Habitat suitability for NSO was examined within a 0.25 mile buffer of the project footprint. Potential suitable

nesting/roosting habitat occurs within the 0.25 mile buffer of the project area. The majority of the habitat directly adjacent to the project is too open and fragmented to provide high quality nesting/roosting habitat for this species. However, marginal potential nesting/roosting habitat for the NSO does occur within the BSA and Action Area.

The closest documented NSO observation is approximately 0.6 miles to the northeast of the project on Kane Ridge Road. This single bird was observed in 1999 and recorded as a male. The closest Activity Center is located approximately 1.5 miles to the southeast of the project near McDonald Creek. This Activity Center (HUM0840) was known to be active in 1998, all observations from 1999-2011 have been negative. A second Activity Center (HUM0743) is located two miles directly east of the project (two ridges over) in the upper drainage of an unnamed tributary to McDonald Creek. According to CDFW BIOS, the last recorded positive observation of a single owl was in 2000. NSO presence within the BSA and Action Area is assumed.

Environmental Consequences

The proposed project will not result in any direct impacts to NSO or NSO nesting/roosting habitat. All project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels.

Using the FWS 2006 Guidance *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owl in Northwestern California*, a comparison was made between the ambient noise level and the noise level a nesting NSO would likely be subjected to as a result of implementing the project. Ambient noise level of the project area is estimated to be *moderate* (~71-80dB) to *high* (~81-90 dB). Noise levels from construction activities are estimated to also fall within the moderate to high ranges as well as the very high range (~91-100 dB) when considering back-up alarms³. Thus, the harassment distance for NSO is estimated to take place within 165 feet of the project for all work, including back-up alarms. This area is considered the project Action Area (i.e., the maximum area affected directly or indirectly by the project).

The proposed project is expected to result in harassment of NSO within the 165 foot noise disturbance buffer. However, because it is unlikely that NSO nest within the action area, and because no construction-related noise over 90 dB (with the exception of back up alarms) or noise greater than 20 dB over ambient will occur during the NSO nesting season, effects to NSO are expected to be insignificant.

³ USFWS Caltrans Routine Maintenance Programmatic Letter of Concurrence (USFWS 2014) excludes equipment back up alarms from the noise disturbance criteria.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to NSO:

- No trees that could provide suitable nesting or roosting habitat for this species will be removed or altered.
- No proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels above 90 decibels (except back-up alarms) may occur during the NSO nesting season (February 1 to July 31)(Service 2006). In addition, no human activities shall occur within a visual line-of-sight of 131 feet or less from a known nest location (Service 2006).
- Guard rail installation will occur after July 15 and before February 1.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Northern Spotted Owl.

Bald Eagle (BAEA)

Affected Environment

The Bald Eagle (*Haliaeetus leucocephalus*) is currently listed as Endangered and fully protected by the State and has been delisted under the Federal Endangered Species Act. No protocol surveys were conducted for BAEA. A nest exists a little over one mile south of the project area. No nests exist within the BSA; however, an individual was observed flying over the project area on May 8, 2014, during a botanical survey. Trees within the project BSA could provide the structure required for nesting and Big Lagoon provides foraging habitat. It is unlikely that BAEA would nest in the project BSA since the species have a high tendency to return to the same nest year after year. Also, BAEA are not expected to nest within 300 feet of areas with human disturbance. (USEPA 1993, Buehler 2000, DeGraaf and Yamasaki 2001).

Environmental Consequences

The proposed project will not result in any direct impacts to BAEA or BAEA habitat. Any project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels, which is not anticipated to effect nesting pairs since the known nest is over one mile away. These impacts are not expected to result in State take of this species.

Impacts to Bald Eagles will be less than significant.

Little Willow Flycatcher (WIFL)

Affected Environment

The Little Willow Flycatcher (*Empidonax traillii brewsteri*) is listed as Endangered by the State. No protocol surveys were conducted for WIFL. The potential habitat that exists within the BSA is marginal and unlikely to support this species; however, minimal habitat requirements are present. WIFL require less than 20% cover of riparian scrub, or at least 0.25 acre of contiguous shrub cover adjacent to a permanent water source or wet meadow. Areas within and adjacent to the BSA located along the margin of the Lagoon and in the willow scrub riparian area to the north of the project meet these needed habitat components. The closest documented WIFL observation is over 80 miles south of the project in a dense willow thicket along the South Fork Eel River within Humboldt Redwoods State Park.

Environmental Consequences

The proposed project will not result in any direct impacts to WIFL or WIFL habitat. Any project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels. These impacts are not expected to result in State take of this species.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to WIFL:

- No willow riparian habitat suitable for WIFL will be removed or altered by project activities.
- No proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels (ambient noise plus activity-generated noise) above 90 decibels (except back-up alarms) will occur from February 1 to July 31, which includes the WIFL nesting season.
- Pre-construction WIFL surveys will occur prior to construction to determine presence/absence. If nesting WIFL is detected, CDFW will be contacted and a disturbance buffer will be established around the nest and the nest will be monitored.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Little Willow Flycatcher.

Pacific Fisher (Fisher)

Affected Environment

The Pacific fisher (*Martes pennanti pacifica*) is currently a Candidate for listing under both the State and Federal Endangered Species Act. No surveys were conducted for Pacific fisher. Although the forest areas within the BSA likely provide the down logs, snags and cavities required for resting/denning for this species, the forested habitat is too open and fragmented, and therefore, is unlikely to be used by this species for denning. Although use of this marginal habitat within the project's BSA is unlikely, it cannot be ruled out. Fisher may use areas within the BSA for long range movements to access portions of their large territories. The closest documented Fisher observation is approximately eight miles east of the project, within the Redwood National Park.

Environmental Consequences

The proposed project will not result in any direct impacts to Pacific fisher or Pacific fisher habitat. Any project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels. These impacts are not expected to result in harm to this species.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to the Pacific fisher:

- No trees, snags, or logs that could provide fisher denning or resting habitat will be removed or altered by project activities.
- No proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels (ambient noise plus activity-generated noise) above 90 decibels will occur within 165 feet of a known den.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Pacific fisher.

Townsend's Big-Eared Bat (TBEB)

Affected Environment

The Townsend's big-eared bat (*Corynorhinus townsendii*) is currently a candidate for listing under CESA. No protocol surveys were conducted for TBEB. Large trees within the BSA likely provide cavities and/or crevices that could be used by TBEB and other bat species for day roosts and, in the summer months, maternity roosts. The closest documented observation was the result of a road kill approximately 65 miles south of the project off SR 101, just south of Scotia.

Studies have shown parturition (giving birth) begins in late May in California, mid-July in Washington state, and June in Texas (Kunz and Martin 1982). Parturition occurs mid-summer, coinciding with periods of high prey availability, and can vary year-to-year

depending on the weather. Single pups are born in May and June with births peaking in late May. The young are weaned at six weeks, and begin to fly in 2.5-3 weeks after birth (Zeiner et al. 1988). In south central Oregon, the maternity period is May through August (Kerwin 2007). Parturition in Grizzly Creek State Park was estimated to occur on June 17, 2000; due to an observation of a 4-day old pup on June 21.

Environmental Consequences

The proposed project will not result in any direct impacts to TBEB or TBEB habitat. Any project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels. These impacts are not expected to rise to the level of State take for this species due to the relatively high level of noise disturbance existing on site and the increases in noise level would likely be greatly attenuated by the structure of the roosting habitat itself.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to TBEB:

- No trees that could provide day roosting or maternity roost habitat will be removed or altered by project activities.
- A tree assessment will be conducted to assess trees within a 165 foot buffer of project activities to determine if they provide the structural components required for roosting Townsends Bats. Any trees suitable for maternity roosts will be examined for the presence of bat sign; if a tree or trees is suspected to contain a maternity roost, then follow-up exit surveys and audio detection (sonabat) surveys will be conducted.
- No proposed activity generating noise levels 20 or more decibels above ambient noise levels or with maximum noise levels (ambient noise plus activity-generated noise) above 90 decibels (except back-up alarms) will occur before July 31. If a maternity roost is discovered within 165 feet of the project, then this noise restriction will be extended until the end of August.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact to the Townsends big-eared bat.

Listed Fish Species

Affected Environment

Several listed and sensitive fish species are either known to be present, or have high potential to occur in Big Lagoon within the BSA including Tidewater goby (*Eucyclogobius newberryi*), coast cutthroat trout (*Oncorhynchus clarki clarki*), Northern California steelhead (*Oncorhynchus mykiss*), and Coho salmon (*Oncorhynchus kisutch*). However, no work will be conducted in Big Lagoon.

Environmental Consequences

Since fish are not present within the Project Footprint, and appropriate erosion control measures and storm water BMP's will be employed, there are no impacts to listed fish species.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to prevent impacts to listed fish species:

- A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project and appropriate BMPs will be employed to protect water quality.
- All disturbed areas will be treated with appropriate erosion control methods. All areas available for revegetation will be planted to reduce the potential for future erosion.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact.

HYDROLOGY AND WATER QUALITY

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source⁴ unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

⁴ A point source is any discrete conveyance such as a pipe or a man-made ditch.

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

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

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar 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 Nationwide Permit may be permitted under one of the USACE’s Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency’s Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the 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. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent⁵ standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA

⁵ The U.S. EPA defines “effluent” as “wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall.”

determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

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

State Water Resources Control Board and Regional Water Quality Control Boards

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

- **National Pollutant Discharge Elimination System (NPDES) Program**

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department’s MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

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

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs). The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

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

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

Affected Environment

A Water Quality Assessment Report was prepared in July 2014. The project is located adjacent to Big Lagoon in Humboldt County. It is situated in the Big Lagoon Hydrologic Area in Trinidad Hydrologic Unit. The project is located in the McDonald Creek watershed. The hydrologic information of the project is summarized below in Table 4. Runoff from the project discharges to Big Lagoon.

Table 4. Hydrologic Information

Route	Post Mile	Hydrologic Unit	Hydrologic Area	Hydrologic Area Name	Watershed	Average Annual Precipitation (Inches)
101	111.4-111.6	Trinidad	108.10	Big Lagoon	McDonald Creek	50

Impact criteria define the level of direct and indirect impacts on water quality, hydrology, and storm water runoff. The purpose of establishing criteria is to help determine when an impact is significant under CEQA. The following general criteria were used to evaluate the impacts of the proposed project on water quality, hydrology, and storm water runoff:

- Violate any water quality standards or waste discharge requirements?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- 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?
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?

Environmental Consequences

There is the potential for temporary water quality impacts to occur during the improvement activities due to work adjacent to Big Lagoon. Tree and vegetation removal, including redwoods within Big Lagoon State Park, would be necessary to allow for the improvement activities. Without implementation of best management practices (BMPs), construction activities associated with the proposed project have the potential to impact water quality through the release of pollutants such as sediment, soil stabilization residues, oil and grease, and trash and debris. Any type of soil disturbance would expose soil to erosion from wind and water that could result in sedimentation to receiving waters.

Permanent water quality and hydromodification impacts can also occur as a result of the increase in impervious surface and an associated increase in storm water runoff volume. However, the increase in impervious surface is not known at this time. Permanent water quality impacts may also result from pollutants typically generated from transportation-related projects including sediment/turbidity, nutrients, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, and metals.

Avoidance, Minimization, and/or Mitigation Measures

To prevent potential pollution to receiving waters as a result of construction activities and/or operations related to this project, pollution prevention BMPs would be incorporated. Compliance with the standard requirements of the Caltrans NPDES Permit and Construction General Permit would be required to minimize potential short-term construction-related and permanent impacts.

The minimum anticipated temporary and permanent BMP measures for this project are described below.

- Sediment and erosion-control BMPs will be implemented in compliance with the Caltrans NPDES and Construction General permits. Anticipated temporary sediment and erosion control measures for this project include the following:
 - Silt fence
 - Fiber rolls
 - Sandbag barrier
 - Gravel bag berm
 - Rolled erosion-control product (e.g., netting)
- Specific pollution prevention measures will be implemented for the project to help minimize pollution in storm water runoff, including preservation of existing vegetation as much as possible, planting on disturbed areas and newly constructed slopes to re-establish vegetation, slope/surface protection systems (permanent soil stabilization), and designated material storage areas.

- The project will be regulated by North Coast RWQCB through Caltrans Statewide NPDES Permit (Order No. 2012-0011-DWQ). Caltrans would implement the programs specified in its approved Storm Water Management Plan to minimize potential temporary and permanent impacts.
- A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented in accordance with the Construction General Permit to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP identifies the sources of pollutants that may affect the quality of storm water; includes construction site BMPs to control sedimentation, erosion, and potential chemical pollutants; provides for construction materials management, non-storm-water BMPs, and includes routine inspections and a monitoring and reporting plan. Post-construction standards to address hydromodification impacts may also be required under this permit.
- All construction site BMPs will follow the latest edition of the Storm Water Quality Handbook: Construction Site Best Management Practices Manual (Caltrans 2003) to control and minimize the impacts of construction-related activities, materials, and pollutants on the watershed.
- The project will comply with Caltrans Standard Specifications for Water Pollution Control and Job Site Management (Caltrans 2010). The project would implement storm water and water pollution control training, routine BMP inspections, spill prevention and control, materials and waste management, and non-storm water management. Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan if the disturbed soil area is less than one acre. This plan would meet the standards and objectives to minimize water pollution impacts set forth in Caltrans' Standard Specifications.

By implementing the BMPs as described above and in compliance with applicable permits and regulations, the Big Lagoon Wall Project would meet federal, state, and local storm water management and water quality protection regulations by minimizing the potential for pollutant transport.

With the incorporation of these avoidance and minimization measures there will be a less than significant impact on hydrology and water quality.

COASTAL ZONE

Regulatory Setting

This project has the potential to affect resources protected by the Coastal Zone Management Act of 1972 (CZMA). The CZMA is the primary federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which

coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the CZMA: they include the protection and expansion of public access and recreation; the protection, enhancement, and restoration of environmentally sensitive areas; the protection of agricultural lands; the protection of scenic beauty; and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Just as the federal CZMA delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments to enact their own local coastal programs (LCPs). LCPs determine the short- and long-term use of coastal resources in their jurisdiction consistent with the California Coastal Act goals. A federal consistency determination may be needed as well.

Affected Environment

The project is located in the Big Lagoon area (approximately 0.25 miles south from the intersection of SR 101 and Kane Ridge Road, and continues south for approximately 1,031 feet). The "Coastal Resources" map below identifies the coastal zone boundary (according to the North Coast Area Plan of the Humboldt County Local Coastal Program) and the proposed project location. Since the project location is within the Humboldt County Local Coastal Boundary, a local coastal development permit will be required.

A one parameter wetland exists within a compacted graveled pullout within the project footprint. This area is dominated with facultative wetland species such as coltsfoot, creeping buttercup and velvet grass which are very common in coastal environments. Only one obligate wetland species, hedge nettle (*Stachys ajugoides*) existed in a very small quantity (5% cover in the herb stratum). This area qualifies as a coastal wetland; however, it is not providing the functions and values a typical wetland would provide, and it is not of high quality.

Environmental Consequences

The project is expected to temporarily impact approximately 0.01 acres of Other Waters of the U.S. (OWUS) resulting from construction access and other activities required for constructing the soldier pile ground anchor wall with timber laggings. The project is

also expected to result in approximately 30 SF (0.001 ac) permanent impacts to culverted OWUS; however, these impacts will be beneficial as they will result in shortening the length of the culvert and increasing the length of open channel drainage by approximately 15 feet. Therefore, permanent impacts to Relatively Permanent Waters (RPW) are expected to be self mitigating.

Impacts to coastal wetlands are minimal (0.009 ac) and will result in only a temporal loss of low quality, marginal coastal wetland. No designated coastal access exists throughout the project limits. Impacts to all wetland and other waters are summarized in Table 3 “Impacts to Wetlands and Waters in the Project Area Table”.

Avoidance, Minimization, and/or Mitigation Measures

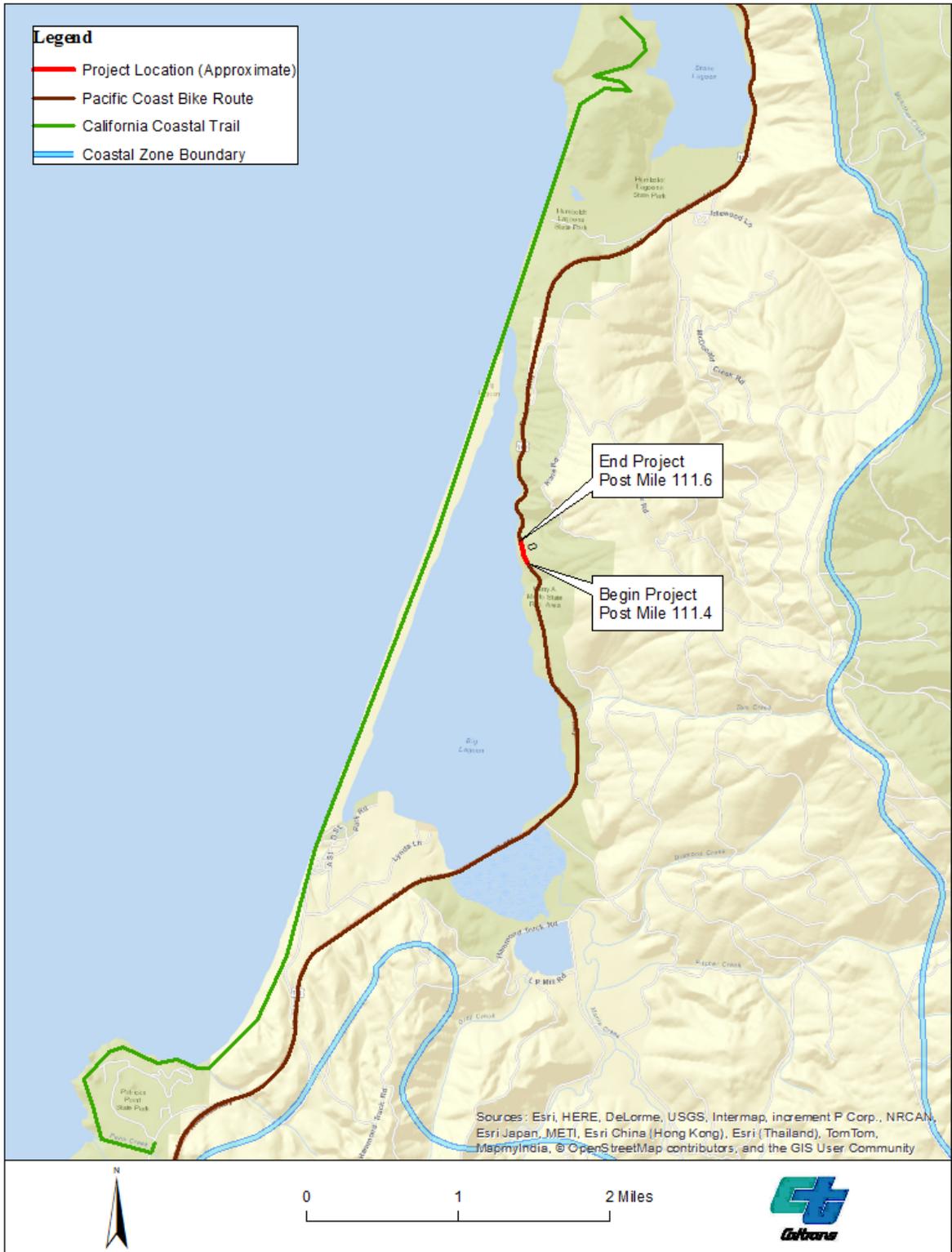
The following avoidance and minimization measures will be implemented to prevent and/or reduce impacts to coastal resources:

- Appropriate Caltrans BMPs will be implemented to protect water quality.
- The roadway will not be upgraded to standard shoulders in any areas where wetlands or waters would be impacted, thus avoiding the non-RPW drainage ditch and associated 3-parameter wetland.
- The project would include appropriate barrier and bicycle rail features to blend into the surrounding environment, preserving the coastal view and natural surroundings. In addition, Caltrans will coordinate with Humboldt County to obtain a Local Coastal Development Permit, which would include conditions to avoid impacts to the coastal zone resources.

California Coastal Trail/Pacific Coast Bike Route:

The California Coastal Conservancy has prepared a plan, at the direction of the State Legislature, to complete the “California Coastal Trail (CCT).” The trail is intended to be a continuous public right-of-way along the California coastline for hiking. “Nearly half complete, CCT is currently comprised of discontinuous segments along the coastline. When completed, the CCT will extend the length of California’s 1200 mile coastline along beaches, bluffs, seaside roads, and through coastal towns and communities.” (Humboldt County Coastal Trail Implementation Strategy (January, 2011)). As shown on the “Coastal Resources” map below, the project area runs parallel to the “completed segment” of the CCT on SR 101 in Humboldt County, from Patrick’s Point State Park, north to Stone Lagoon. The Pacific Coast Bike Route runs along SR 101. The wider shoulders would improve bicycle accommodations on the Pacific Coast bicycle route.

Coastal Resources



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 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)⁶.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.⁷

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

⁶ http://climatechange.transportation.org/ghg_mitigation/

⁷ http://www.fhwa.dot.gov/environment/climate_change/mitigation/

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

Executive Order (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 the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

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

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

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

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from 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 for the achievement of the emissions target for their region.

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

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis.⁸ FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity. Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the “National Clean Car Program” and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

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

⁸ To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.⁹

The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO₂ emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

Project Analysis

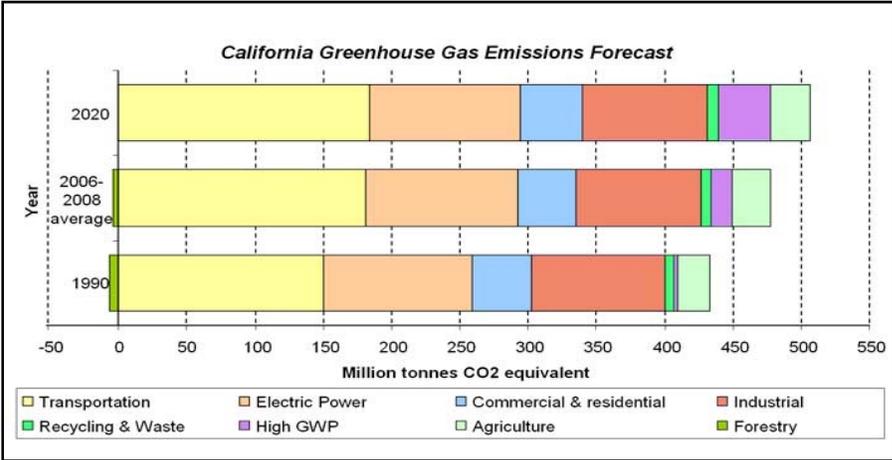
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental*

⁹ <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>

change in emissions when combined with the contributions of all other sources of GHG.¹⁰ 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. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

FIGURE 1 California Greenhouse Gas Forecast



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and

¹⁰ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

is implementing the Climate Action Program at Caltrans that was published in December 2006.¹¹

This project is a road safety and reconstruction project that was a result of slope failures occurred after severe storm events in 2011. No additional lanes are planned to be constructed. The capacity of the roadway will not increase and, thus, the operation of the project will have a low- to no-potential for an increase in GHG emissions.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

CEQA Conclusion

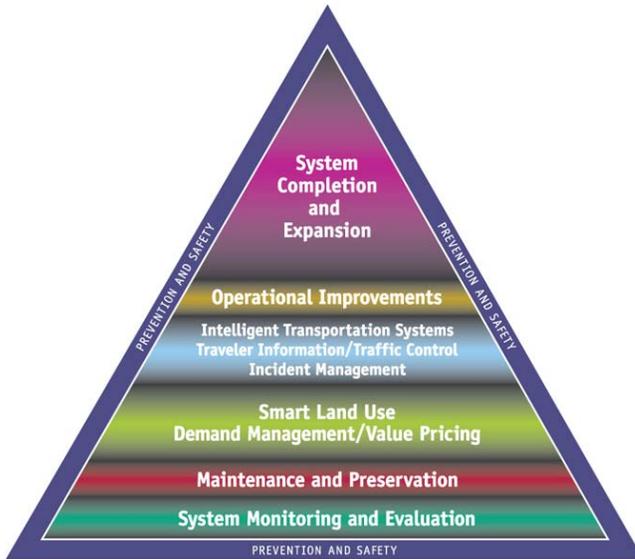
While the project will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. However, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

¹¹ Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

Greenhouse Gas Reduction Strategies

The Department continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set

forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for



California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in The Mobility Pyramid (*shown above*).

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. The Department works closely with local jurisdictions on planning activities, but does not have local land use planning authority. The Department assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and ARB. The Department is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table below summarizes the Departmental and statewide efforts that the Department is implementing to reduce GHG emissions. More detailed information about each strategy is included in the [Climate Action Program at Caltrans](#) (December 2006).

Climate Change/CO₂ Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone ceme mix 25% fly ash cement m > 50% fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Climate Change (June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)¹² provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

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

1. According to Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.
2. Caltrans Standard Specifications, a required part of all construction contracts, should effectively reduce and control emission impacts during construction under the provisions of Section 7-1.02C "Emission Reduction" and Section 14-9.03 "Dust Control". Provision 14-9.02 "Air Pollution Control" requires the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.
3. All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion. Trees removed by the project will be replaced in kind onsite.

Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can 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 intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011¹³,

¹² http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

¹³ <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>
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outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks .

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009)¹⁴, which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

¹⁴ <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>
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The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report¹⁵ to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is located in the coastal region along the inland side of Big Lagoon. While, sea level rise forecasts show that Big Lagoon adjacent waterways will be inundated with sea water, the project area is not expected to be in the area of inundation, as shown in Figure 2.

¹⁵ *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at http://www.nap.edu/catalog.php?record_id=13389.

FIGURE 2



Source: Cal-Adapt 2014¹⁶

Coastal areas are vulnerable to a range of natural hazards, including storms, extreme high tides, cliff erosion, and projected rising sea levels. According to several sea level rise projection maps, sea level rise (SLR) in the next century may inundate certain areas along the California coastline, affecting land uses and roadway infrastructure. The potential for projected SLR within the proposed Project vicinity through the years 2050 and 2100 may exacerbate existing natural hazards within the project area that will

¹⁶ <http://cal-adapt.org/sealevel/>
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need to be addressed on a regional level through collaboration between Caltrans and local agencies with land use authority. The existing roadway is outside of the shaded blue and yellow areas shown on the attached sea level rise map taken from the California Energy Commission's Cal-Adapt web interface. This map shows the areas of direct impacts due to existing flooding potential or projected sea level rise inundation. This project proposes to realign and reinforce an existing structure with an approximated design life of approximately 75 years. A comprehensive planning and adaptation plan approach will be required through collaboration efforts between Caltrans and the local land use planning agencies to ensure future plans for infrastructure and the surrounding land uses consider sea level rise.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Section 5 – Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency 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 the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

The Initial Study with Proposed Negative Declaration will be made available for public and agency review and comment for 30 days. Caltrans has ensured that the document will be made available to all appropriate parties and agencies, including the following: 1) Responsible agencies, 2) Trustee agencies that have resources affected by the project, 3) other state, federal and local agencies which have regulatory jurisdiction, or that exercise authority over resources which may be affected by the project, 4) the general public. Copies of the document will be made available at the Caltrans District 3 Office of Environmental Management (M-2) located at 703 B St., Marysville, at the District 1 Office at 1656 Union Street, Eureka, at the Eureka Public Library at 1313 3rd Street, Eureka, and at the Trinidad Public Library at 380 Janis Court, Trinidad. This document may be downloaded at the following website address:

<http://www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm>

Federal Endangered Species Act Consultation Summary

Section 7 Consultation for effects to NSO and MAMU and Designated Critical Habitat for MAMU is in progress. The project is not expected to affect any other federally listed species. Caltrans has determined that the project is "not likely to adversely affect" both NSO and MAMU and that the project will not result in an adverse modification of designated critical habitat for MAMU.

USFWS's Programmatic Letter of Concurrence

This project's activities will be covered under the USFWS-Caltrans Routine Maintenance Programmatic Letter of Concurrence (PLOC) (USFWS 2014). The PLOC covers specific maintenance activities (including construction of retaining walls, and permanent restoration of storm damage) that "may affect but are not likely to adversely affect" specific federally listed species including both NSO and MAMU (as well as other federally listed species that do not occur within the proposed project's Action Area .

The PLOC covers the proposed project's activities and their potential effects to NSO and MAMU, with the condition that the specific Avoidance and Minimization Measures that are outlined in the PLOC for each applicable species (NSO and MAMU) can be complied with.

California Endangered Species Act Consultation Summary

Coordination with California Department of Fish and Wildlife for effects to State Listed Species and candidate species is currently in progress. Impacts to State Listed and Candidate species are not anticipated to rise to the level of take under California Endangered Species Act.

Wetlands and Other Waters Coordination Summary

A Jurisdictional Determination Report will be sent to US Army Corps of Engineers and Regional Water Quality Control Board (RWQCB) for review and verification. A Coastal Wetland Delineation report will be submitted to the California Coastal Commission for their review.

California Coastal Act Coordination

Project Activities must be consistent with California Coastal Act and the Humboldt Bay Area local Coastal Program. Proposed development occurring within areas containing "Environmentally Sensitive Habitats"(ESHA) shall be subject to conditions and requirements of Humboldt Bay LCP.

The Humboldt Bay Local Coastal Plan defines ESHA's as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Coastal Act Section 30107.5). These include:

- *Areas of special biological significance* (RWQCB)
- Rare and Endangered Species habitat
- Coastal wetlands and lagoons

A Coastal Wetland Delineation report, as well as an analysis of ESHA's Existing in the project area report will be submitted to the California Coastal Commission for their review.

The Humboldt Bay Area Local Coastal Plan also requires that all road projects employ "suitable techniques and measures necessary to prevent erosion and minimize surface runoff". Caltrans will incorporate specific measures (BMP's) to prevent erosion.

Section 6 – List of Preparers

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

Brady, Marie, Project Engineer. Contribution: Project Design.

Cardiff, Darrell, Associate Environmental Planner (Archaeology). Contribution: Cultural Resource Report.

Hodgson, Talitha, Project Manager. Contribution: Project Coordination.

Lazzaratto, Laura, Landscape Architect. Contribution: Visual Impact Assessment.

Melendrez, David, Supervising Transportation Engineer. Contribution: Water Quality Assessment Report.

Pepper, Kristine, Hydraulics Engineer. Contribution: Floodplain Evaluation Report.

Pitts, Cassandra, Associate Environmental Planner (Coordinator). Contribution: Initial Study.

Pommerenck, Adele, Senior Environmental Planner. Contribution: Environmental Branch Chief.

Thoreson, Katie, Associate Environmental Planner (Natural Science). Contribution: Project Biologist, Natural Environment Study,

Werner, Steve, Hazardous Waste Specialist. Contribution: Initial Site Assessment.

Zandian, Saeid, Air and Noise Specialist. Contribution: Air and Noise Assessment.