Lagoons Slip and Slide

U.S. ROUTE 101 IN HUMBOLDT COUNTY
01-HUM-101 - PM 110.58/113.76
EA 0B420 / EFIS 0112000126

Initial Study
with Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

June 2015

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SCH#
01-HUM-101-PM 110.58/113.76
EA: 0B420 / EFIS: 0112000126

Lagoon Slip and Slide

Storm Damage Restoration Project on U.S. Route 101 in Humboldt County

Initial Study with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

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

3/24/2015
Date of Approval

MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes permanent restoration of U.S. Route 101 (U.S. 101) in Humboldt County at two locations: postmile (PM) 110.58 (Location 1) and PM 113.76 (Location 2). The project will restore the roadway to prestorm conditions. Work associated with the slope, the culvert, and the downdrain will be accessed from the top of the slope from U.S. 101. A road providing access to the lagoon begins at approximately PM 110.5 and then runs along the lagoon beach in front of the project; however, this road will not be used due to high water levels that cause overtopping, making the road inaccessible. Installation of construction signs warning the traveling public of construction and one-way traffic control restrictions will be utilized throughout construction.

Determination

An Initial Study has been prepared by Caltrans. On the basis of this study it is determined that the proposed action, with the incorporation of the identified avoidance and minimization measures; would not have a significant effect on the environment for the following reasons:

- The project would have no effect on agriculture/forest resources, air quality, cultural resources, hazards/hazardous materials, land use/planning, mineral resources, noise, population/housing, recreation, transportation/traffic, and utilities/service systems.

- The project would have less than significant effects to aesthetics, and public services.

- The project would have less than significant effects with mitigation to biological resources, geology/soils 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

6/30/2015
Date

Section 1 – Proposed Project

Project Title

Lagoon Slip and Slide Project

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

California Department of Transportation
Attn: Adele Pommerenck, Branch Chief
703 B Street
Marysville, CA 95901

Project Location

The project locations are within and adjacent to Humboldt Lagoons State Park and the Harry A. Merlo State Recreation Area on U.S. 101 in Humboldt County.

Purpose and Need

In March 2011, severe storm events resulted in two localized slope failures along the southbound lane on U.S. 101. The purpose of this project is to restore and stabilize the roadway to pre-storm damage conditions. The project is needed to repair the damaged culverts caused by slope failures, and to prevent roadway failures from occurring in future storm events.

Description of Project

The California Department of Transportation (Caltrans) proposes permanent restoration to U.S. 101, at PM 110.58 (Location 1) and PM 113.76 (Location 2) in Humboldt County. Work proposed at each of these locations is described in detail below.

<u>Location 1 (PM 110.58)</u>

U.S. 101 along the north side of Big Lagoon is built on geologically unstable uplifted marine sediments. Maintenance of this section of highway has been problematic since the establishment of this route in 1922. Various locations have failed due to the unstable geology. The current location is approximately one (1) mile north of the intersection of U.S. 101 and LP Mill Road (west of Tom's Creek). The last time this section failed was in 1982.

Proposed work at this location includes replacing the existing 90 foot long, 18-inch diameter corrugated steel pipe (CSP) culvert that separated due to fill slope failure. Culvert removal and installation is anticipated to be half-width construction (a construction strategy wherein half of a symmetrical (or nearly so) roadway is reconstructed (refurbished) as a phase without encroachment on the other half) with one-way traffic control restrictions on U.S. 101 within the work area under flagging.

The culvert outlet connects to a 35 foot long downdrain. The failed slope will be excavated to prepare for replacement of the damaged downdrain. Placement of 0.25 ton Rock Slope Protection (RSP) at a 1:1.5 slope mixed with select imported fill will be placed around the downdrain to fill in existing voids and provide for revegetation. Work on the outlet (lagoon) side of the culvert will be accessed from U.S. 101. At the inlet side of the culvert, proposed work includes replacing the drainage inlet and reconnecting to an existing underdrain. Upon completion of the drainage work, the roadway will be restored to existing conditions and disturbed soil areas will be revegetated with native plant species.

Removal of Invasive Plants and Revegetation – Invasive jubata grass (Cortederia jubata) will be removed within the project limits including an approximately 0.93 acre area on the downslope side of the highway, above the lagoon. Removal will be done by hand, and where accessible, by equipment. Native trees and shrubs will be protected if at all possible. The tops of the Jubata grass will be cut with chainsaws and removed from the site prior to the bird nesting season and prior to going to seed. The entire root systems will then be removed (either by hand or with equipment) to minimize regrowth. The site will then be prepped for planting, treated for erosion control and planted with appropriate native species for the site.

Access

Work associated with the slope, the culvert, and the downdrain will be accessed from the top of the slope from U.S. 101. A road providing access to the lagoon starts/begins at approximately PM 110.5 and then runs along the lagoon beach in front of the project; however, this road will not be used due to high water levels that cause overtopping, making the road inaccessible.

Location 2 (PM 113.76)

The current alignment of U.S. 101 between Kane Road on the north end of Big Lagoon and McDonald Creek, the primary tributary to Stone Lagoon, was established in 1971.

The highway alignment along the headlands between Big Lagoon and Stone Lagoon was first established in 1922. Similar to Location 1, the highway in this area is built on extremely unconsolidated and unstable uplifted marine sediments. Alignments of the highway near Dry Lagoon were changed in 1938 and 1943. Major work was done in 1954 and 1955 and through the late 1950s and 1960s until the current alignment was created.

The culvert at PM 113.79 conveys the water of a small drainage locally known as the “Truttman Sink”. The fill prism constructed in 1971 is massive. The existing 42-inch diameter CSP culvert at the bottom of the fill severely separated due to embankment slope failure. Abandonment of the existing culvert and removal of the drainage inlet and downdrain is recommended. Trenchless technique (drilling sub-horizontally through roadway fill) for culvert installation has been recommended at this location. A 40 foot by

40 foot jacking pit will be excavated adjacent to the existing culvert. The microtunnel boring (drilling sub-horizontally through roadway fill) machine used to install the proposed culvert will be located within the pit.

To dewater and stabilize the fill slope in this area, Caltrans proposes to install a radial array of 11 horizontal drains from a 30 foot by 20 foot drilling pad located within the Truttman Sink Maintenance Yard. The location of the horizontal drilling pad will be approximately 100 feet northeast of the proposed “jacking” pit location.

After the bored culvert is installed, a drain inlet will be placed. The remainder of the culvert to the downdrain will be placed by the cut and fill method. The drain inlet will connect and carry the discharge from both the culvert and horizontal array. The downdrain will be approximately 120 feet long and will remain unburied for future ease of maintenance and to minimize disturbance to the steep slope and associated impacts to trees and vegetation. The outlet of the downdrain will terminate into an approximately 23 foot by 10.5 foot rock energy dissipater within the Caltrans Right-of-Way. The area within and around the rock energy dissipater and along the edge of the downdrain will be vegetated with appropriate species.

At the culvert inlet (south of U.S. 101), an existing access road will be utilized for transporting equipment and materials during construction. A cofferdam or similar structure will be used to dewater the work area where the inlet with headwall will be constructed. Any water diverted from the existing culvert will be carried by a small pipe within the existing culvert. The diverted water will be piped along the Truttman Sink Maintenance Yard access road and pumped to the nearest drain inlet to the northeast, or a containment tank where sediment can settle. A right-to-enter permit has been requested from State Parks for the removal of an existing riser (vertical extension to the culvert which provides relief when the main entrance is plugged) (located outside of Caltrans’ right-of-way) and also to allow the parking of contractor vehicles and equipment along State Parks’ road located just downslope from Truttman Sink. The inlet of the new culvert and headwall are located within Caltrans’ right-of-way. All disturbed soil areas will be treated with erosion control and revegetated with appropriate native plant species.

Staging, Storage and Disposal

All staging and storage will occur on previously-disturbed graveled pullouts adjacent to the project area (Location 1) or within the Truttman Sink maintenance yard (Location 2).

If any excess fill is generated by the project, the contractor will be responsible for identifying an approved and environmentally-cleared commercial site to which it will be trucked.

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

management practices. An approved Storm Water Pollution Prevention Plan (SWPPP) will be required, which will clearly identify specific fueling and waste handling locations and procedures.

Traffic Control

During construction, temporary one-way traffic control restrictions and construction warning signs will be installed to alert the traveling public within the work area. To heighten motorist awareness of cyclists traveling within the construction zone, "Share the Road" signs will be placed along the roadway and cyclists will be directed through the temporary work zone during hours of construction.

Construction Schedule

Construction is estimated to take between 40 and 60 working days (one construction season) depending on environmental restrictions and the type of trenchless culvert installation determined to be necessary. The construction schedule will accommodate special events and/or holiday schedules for the traveling public.

Surrounding Land Uses and Settings

Existing land use within the project area vicinity includes state park land, residential and commercial land. No alteration to present or planned land use would occur as a result of the proposed project.

Permits and Approvals Needed

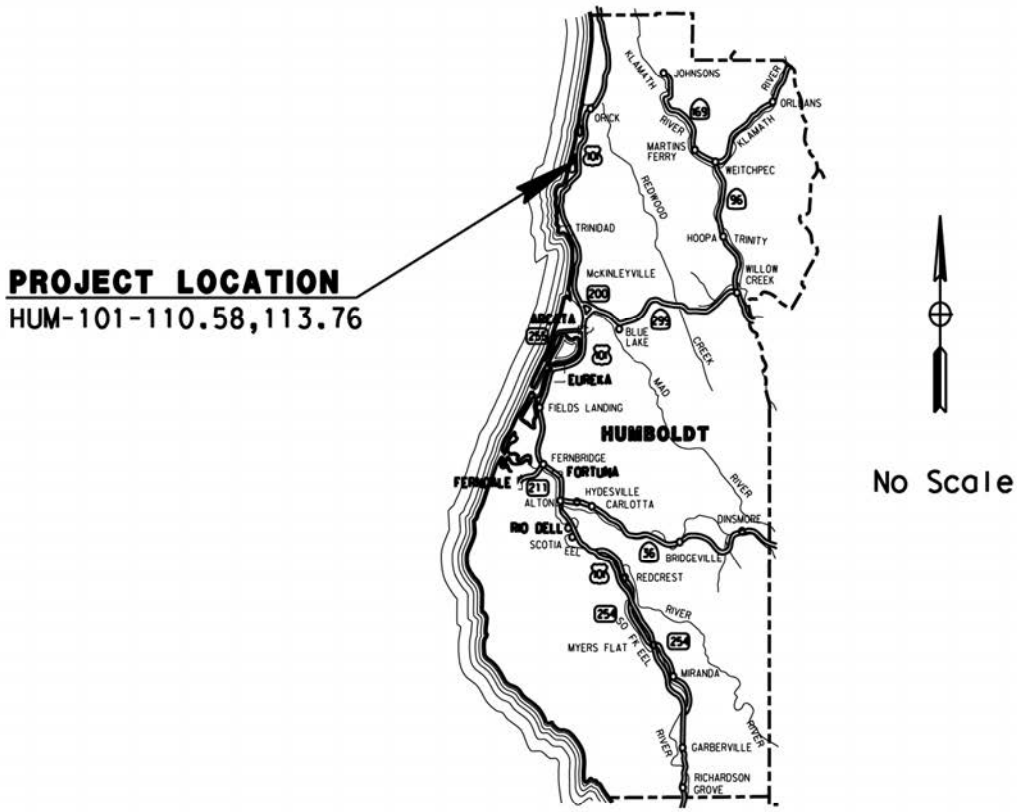
The following environmental permits and approvals are required for this project:

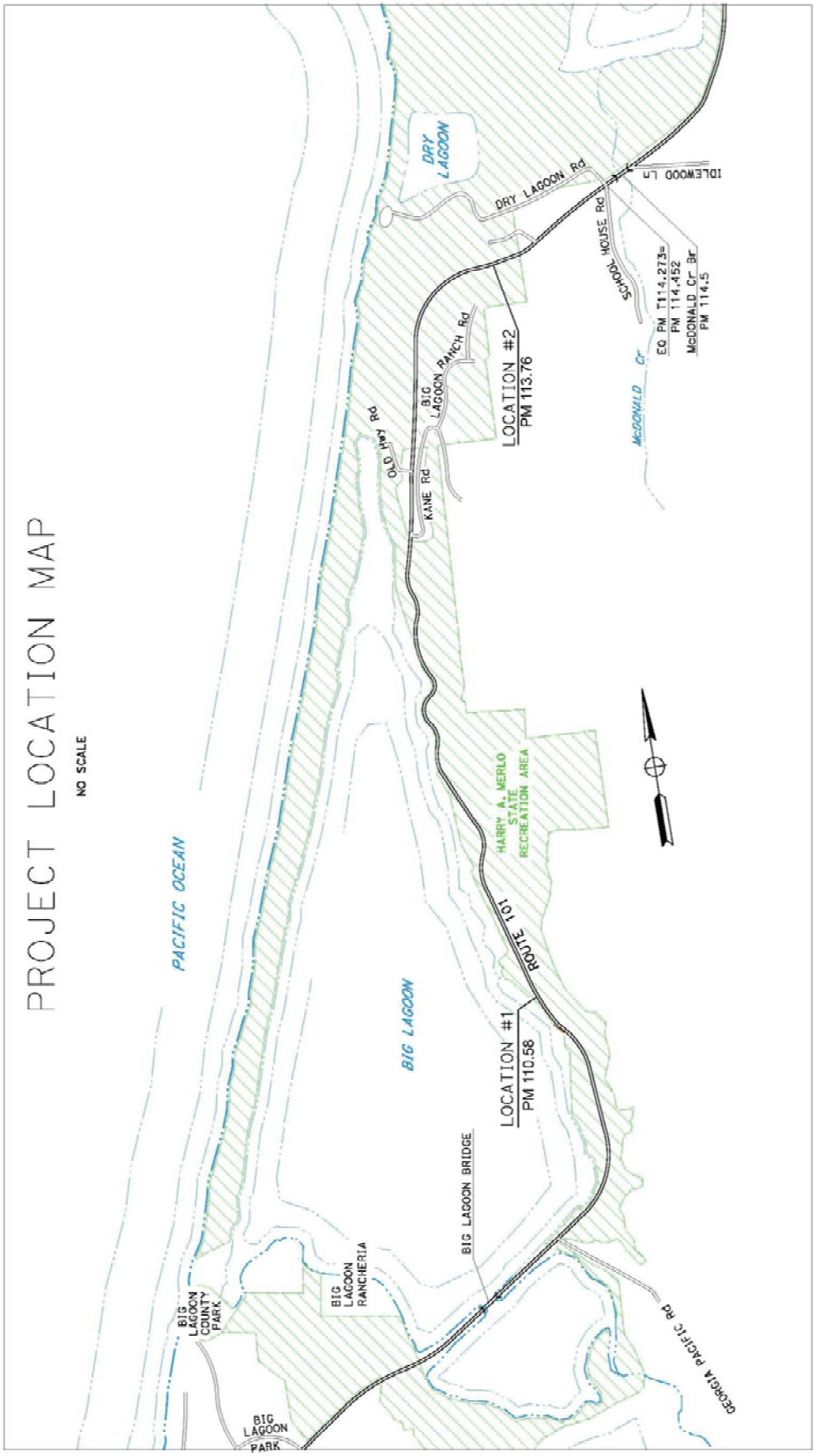
- Federal Endangered Species Act Section 7 Consultation, U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration (NOAA Fisheries Service)
- 401 Water Quality Certification, North Coast Regional Water Quality Control Board
- Nationwide 404 Permit, United States Army Corps of 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 MAP
NO SCALE
PACIFIC OCEAN
BIG LAGOON
DRY LAGOON
HARRY A. MERLO STATE RECREATION AREA
ROUTE 101
LOCATION #1
PM 110.58
LOCATION #2
PM 113.76
BIG LAGOON BRIDGE
BIG LAGOON COUNTY PARK
BIG LAGOON RANCHERIA
BIG LAGOON PARK
KANE Rd
OLD HWY Rd
BIG LAGOON RANCH Rd
DRY LAGOON Rd
SCHOOL HOUSE Rd
IDLEWOOD LN
McDONALD Cr
EQ PM T114.273=
PM 114.452
McDONALD Cr Br
PM 114.5
GEORGIA PACIFIC Rd

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.

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

Section 3 – CEQA Checklist

01-HUM-101	110.58/113.76	01-0B420
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	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Explanation: "No Impact" and "Less than Significant with Mitigation" determinations in this section are based on the information provided in the Visual Impact Assessment dated September 17, 2014. Temporary visual effects will occur; however, with restoration and revegetation measures for the jubata site, the visual quality will be enhanced.

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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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.

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?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
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)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Explanation: "No Impact" determinations in this section are based on the Air Quality Assessment Report dated March 28, 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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☒	☐	☐

	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?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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 December, 2014, and discussed further in Section 4.

V. CULTURAL RESOURCES: Would the project:

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

Explanation: "No Impact" determinations in this section are based on the Cultural Resources Report dated September 15, 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:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Explanation: "No Impact" determinations and "Less Than Significant with Mitigation" determinations in this section are based on the scope, description, and location of the proposed project. All disturbed soil areas will be treated with erosion control measures and revegetated with appropriate native plant species.

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. See Section 4 for further discussion.

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?	☐	☐	☐	☒

	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Explanation: "No Impact" determinations in this section are based on the Information contained in the Initial Site Assessment prepared In March 10, 2014.

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
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)?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐

	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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

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 October 2014 and the Flood Plain Evaluation Report Summary dated June 26, 2014.

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) 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?	☐	☐	☐	☒

Explanation: "No Impact" determinations in this section are based on the information provided in the Noise Assessment Report dated March 28, 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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

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:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

Explanation: "No Impact" and "Less Than Significant Impact" determinations in this section are based on an agreement with State Parks. All the land will be fully restored to a condition at least as good as what existed prior to the project and will be replanted with native vegetation adhering to the California State Park's genetic integrity guidelines.

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

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?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

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

Biological Resources

NATURAL COMMUNITIES

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

The ***action area*** is the maximum area that would be directly or indirectly affected by the project activities (including a 165 foot noise disturbance buffer). The project footprint is entirely included within this area. The action area for the proposed project is approximately 53 acres (approximately 15 acre action area for Location 1 and approximately 38 acre action area for Location 2).

The ***Biological Study Area*** (BSA) is the outermost area studied by Caltrans biologists or consultant biologists. This area varies among projects, depending on potential resources in question and project components. This area encompasses the entire project action area. The BSA for the proposed project includes a 0.25 mile buffer around the project footprint and is larger than the projects' action area.

The term ***study area*** is used in reference to a particular study that was performed. This area varies depending on the study in question. Typically this area extends beyond the boundaries of the project footprint.

Coastal "Environmentally Sensitive Habitat Areas" (ESHAs)
The project lies within the North Coast Area Plan of the Humboldt County Local Coastal Program. This Area Plan uses the California Coastal Act definition of 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, streams and lagoons

Several of these areas exist within the project's biological study area (BSA), including listed species habitat, coastal wetlands, riparian habitat, natural communities of special concern (NCSC), Big Lagoon beach and State Park natural preserves. Potential impacts and avoidance and minimization measures for these resources are discussed below.

Redwood Forest
Affected Environment

*The Sequoia sempervirens f*orest (redwood forest), present within the botanical study limits 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*), red huckleberry (*V.parviflorum*), salal (*Gaultheria shallon*)*,* Thimbleberry (*Rubus parviflorus),* and Salmonberry *(Rubus spectabilis)* are present in the understory with ferns and herbaceous flowering plants, including lady fern (*Athyrium filix-femina*), swordfern (*Polystichum munitum*)*,* and wild ginger *(Asarum caudatum).* An infestation of jubata grass exists along the highway shoulder at the edge of the redwood forest at Location 1. Redwood forest is considered a natural community of special concern (NCSC) (CDFG 2010) and is therefore considered a coastal ESHA.

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

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

- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?
- Would the project have a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Would the project have a 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 redwood forest are anticipated to be approximately 0.02 acre at Location 1; however, this portion of redwood forest consists primarily of disturbed roadside vegetation with jubata grass. No redwood trees are expected to be impacted by the project; therefore, impacts to redwood forest are expected to be minimal.

Root Impact Analysis
An evaluation was conducted to determine whether work (i.e. placement of fill or excavation) within a buffer of five times the diameter at breast height (dbh) of any mature trees greater than 24 inches dbh would be required. Trees greater than four inches dbh were surveyed, and any mature trees with buffer zones that exist in

proximity of the proposed repair work were mapped (with their corresponding five times dbh buffers) to determine if further analysis of potential impacts would be required. It was determined that work will occur within the Root Health Zone (RHZ) (five times dbh) and the Structural Root Zone (SRZ) (three times dbh) of one six foot dbh redwood at Location 1 within the jubata grass removal area. No heavy equipment will be used within the RHZ of this tree. Jubata grass will be removed by hand in these areas. No other work will be required within the RHZ or SRZ of any other mature trees.

Since the redwood forest will be not be cut as part of this project and no roots of mature redwoods will be impacted, there will be a less than significant impact to redwood forest.

Avoidance, Minimization, and/or Mitigation Measures

- Only hand work will occur within the Root Health Zone or the Structural Root Zone of any tree greater than 24 inch dbh.
- Measures to avoid the introduction and spread of invasive species will be employed, and all known, non-herbaceous invasive species within the project area (i.e. Jubata grass, Scotch broom) will be removed, contained and disposed of properly.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion.
- Construction access will be limited to the smallest area feasible.
- Natural Communities of Special Concern and other sensitive areas adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing.
- Approximately 1.02 acres of jubata grass will be removed from the disturbed hillside above Big Lagoon and will be replacement with native species to offset any potential impacts to adjacent sensitive resources including redwood forest.
- A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted with permit applications.

Impacts to redwood forest will be further reduced with the implementation of the avoidance and minimization and mitigation measures above.

Red Alder Forest

Affected Environment

The stand of red alder forest, *Alnus rubra* forest, at Location 2 has a dense canopy dominated by mature red alder (*Alnus rubra*), sometimes mixed with Sitka spruce, arroyo willow and cascara. Shrubs in the understory include red elderberry,

salmonberry, thimbleberry, California blackberry (*Rubus ursinus*), twinberry (*Lonicera involucrata*), with ferns and herbaceous flowering plants, including sword fern, lady fern, slough sedge, coast manroot (*Marah oregana*), sweet coltsfoot (*Petasites frigidus*), giant horsetail, Pacific water parsley (*Oenanthe sarmentosa*) and skunk cabbage (*Lysichiton americanus*). The red alder forest within the project area contains species diagnostic of *Alnus rubra/Rubus spectabilis-sambucus racemosa* association and is considered a NCSC.

Environmental Impacts

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

The following CEQA Checklist items were used to evaluate the impacts of the proposed project on the red alder forest:

- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?
- Would the project have a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Would the project have a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Approximately 0.42 acres of temporary impacts to the red alder forest are anticipated at Location 2. The impacts will occur as a result of the removal of sections of the old buried downdrain and accessing the slope to install the unburied replacement downdrain. This is expected to result in the removal of a maximum of 66 trees (four inches in dbh or greater) within the red alder forest at Location 2. Detailed information regarding the size and species of trees that may be impacted is provided in Table 1 below.

Table 1: Impacts to Trees in the Project Area

Size	Species		
DBH	**Alder**	**Spruce**	**Total**
4-6 in	21	2	**23**
6–8 in	13	1	**14**
7-12 in	19	5	**24**
13-18 in	4	1	**5**
Total	**57**	**9**	**66**

Impacts to red alder forest will be minimized to the greatest extent feasible. The new downdrain with rock energy dissipater is expected to result in 0.02 acre of permanent impacts to the red alder forest. All temporarily disturbed areas will be revegetated upon project completion.

Avoidance, Minimization, and/or Mitigation Measures

- Measures to avoid the introduction and spread of invasive species will be employed, and all known, non-herbaceous invasive species within the project area (i.e. Jubata grass, Scotch broom) will be removed, contained and disposed of properly.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion.
- Construction access will be limited to the smallest area feasible.
- NCSC and other sensitive resources adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing.
- Approximately 1.02 acres of jubata grass will be removed from the disturbed hillside above Big Lagoon (at Location 1) and replaced with native species to offset any potential impacts to NCSC and other sensitive resources including ESHAs.
- A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted with permit applications.

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

Arroyo Willow Thicket
Affected Environment

The *Salix lasiolepis* forest (willow thicket), present within the botanical study limits at Location 1 is dominated by arroyo willow but also includes Scouler's willow (*Salix scouleriana*). Plant species in the understory include saltmarsh bulrush (*Bolboschoenus maritimus* ssp. *paludosus*), Pacific-aster (*Symphyotrichum chilense*), ox-eye daisy *(Leucanthemum vulgare),* Pacific silverweed *(Potentilla anserina*) and cow's clover (*Trifolium wormskioldii*). A large portion of this thicket is growing through or around the RSP used to armor the hillslope along the bank of the lagoon.
This thicket most closely resembles the Salix lasiolepis/Baccharis pilularis – Rubus ursinus association, which is not a NCSC. This area is considered an ESHA because it is riparian and classifies as a coastal wetland.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on arroyo willow thicket:

- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?
- Would the project have a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Would the project have a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The project will result in a maximum of 0.05 acre of temporary disturbance to arroyo willow thicket (Salix lasiolepis shrubland alliance) due to trimming and other disturbance related to equipment access to replace the downdrain; specifically, trimming for access and crushing and/or breaking of willow branches could occur during the replacement. Disturbance, including trimming of branches and removal of roots, is also likely to occur during removal of the jubata grass. Arroyo willow thicket areas that will be trimmed are expected to survive and re-grow. If feasible, additional willow thicket will be planted in areas available for revegetation (and appropriate for willow) once the jubata grass is removed.

Because only a small area of willow will be trimmed as a result of project activities, and because this area is expected to regrow, there will be a less than significant impact to this ESHA. Impacts to this area will be further reduced with the implementation of the avoidance and minimization and mitigation measures below.

Avoidance, Minimization, and/or Mitigation Measures

- Measures to avoid the introduction and spread of invasive species will be employed, and all known, non-herbaceous invasive species within the project area (i.e. jubata grass, scotch broom) will be removed, contained and disposed of properly.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion.
- Construction access will be limited to the smallest area feasible.

- Natural communities of special concern and other sensitive areas adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing.
- Approximately 1.02 acres of jubata grass will be removed from the disturbed hillside above Big Lagoon (at Location 1) and replaced with native species to offset any potential impacts to this ESHA (and other sensitive resources). A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period.
- A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted with permit applications.

Lagoon Beach

Affected Environment

Lagoon beach is present within the study area at Location 1. This area is inundated with water when the lagoon levels are high. When the water level is low, vegetation becomes established along the beach areas used as an access road to the Lagoon. Vegetated areas along the beach are dominated by salt grass (*Distichlis spicata*), three-square (*Schoenoplectus pungens*), and miniature tule (*Isolepis cernua*), with spike rush (*Eleocharis microstachys*), marsh gum plant (*Grindelia stricta*), Pacific aster (*Symphyotrichum chilense*), Pacific Silverweed (*Potentilla anserine),* fleshy jaumea (*Jaumea carnosa*), birdfoot trefoil (*Lotus corniculatus*), slough sedge (*Carex obnupta*) and seaside arrow-grass (*Triglochin maritma*). This vegetation association classifies most closely as *Distichlis spicata* Herbaceous Alliance which is not a NCSC.

Environmental Impacts

No construction access will occur on the Lagoon Beach; therefore, there will be no impacts to Lagoon Beach.

Avoidance, Minimization, and/or Mitigation Measures

- Access to the work area at Location 1 will be from the highway. No heavy equipment will access the Lagoon beach.
- Measures to avoid the introduction and spread of invasive species will be employed, and all known, non-herbaceous invasive species within the project area (i.e. jubata grass) will be removed, contained and disposed of properly.

- Construction storm water Best Management Practices (BMPs) will be in place to ensure that no pollutants or other deleterious materials enter the Lagoon beach.
- Erosion control and slope stabilization BMPs will be implemented, to prevent sediment and other materials/debris from entering the Lagoon beach.

Wet Meadow

Affected Environment

Two wet meadow areas are present at PM 113.8. Wet meadow #1 is 0.26 acre located immediately west of the maintenance area along an old access roadbed/maintenance area. It is dominated by velvet grass (*Holcus lanatus*), soft rush (*Juncus effusus*), creeping buttercup (*Ranunculus repens*), and flatsedge (*Cyperus eragrostis*). Other species present include Pacific aster, English plantain (*Plantago lanceolata*), Curly dock (*Rumex crispus*), Slough sedge and Ox-eyed daisy. Wet meadow #2 is 0.15 acre located in the northeast portion of the maintenance area near the gated entrance. This area is dominated by seep monkeyflower (*Mimulus guttatus*), watercress (*Nasturtium officinale*), pale spikerush (*Eleocharis macrostachya*), brown-headed rush (*Juncus phaeocephalus*), and white sweetclover (*Melilotus albus*).

A vegetated drainage ditch flows from these areas to a culvert located midway between them and is dominated by a similar suite of species.

Environmental Impacts

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

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

- Would the project 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?

The project is expected to temporarily impact approximately 0.02 acre of wet meadow (1) due to construction of the cut and cover portion of the culvert installation. Approximately 0.25 acre of wet meadow (1) is proposed for enhancement/restoration to compensate for a portion of the impacts to wetlands. These impacts are also discussed in Impacts to Wetlands and Waters below.

Avoidance, Minimization, and/or Mitigation Measures

- Wet meadow (1) will be enhanced/restored with appropriate native wetland species upon project completion to offset impacts to wetlands resulting from project activities.

- A Mitigation and Monitoring Plan with specific success criteria will be developed for this area and submitted with permit applications.
- Maintenance (including weeding and additional plantings) of this area will be implemented until success criteria are met.
- Measures to control invasive species will be employed, and all known, non-herbaceous invasive species within the project area will be removed.
- Natural communities of special concern and other sensitive areas adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing.
- A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted with permit applications.

Freshwater Marsh

Affected Environment

A 0.36 acre freshwater marsh is located in the southern portion of the study area of Location 2 within the Red Alder Forest and is associated with the unnamed drainage that flows through the damaged culvert. This area is dominated by Western sweet coltsfoot, fowl managrass (*Glyceria elata*), lady fern, and small fruited bulrush (*Scirpus microcarpus*) with pig-a-back plant (*Tolmeia menziesii*), Giant horsetail (*Equisetum telmateia*), Pacific waterparsley and Salmonberry. This community most resembles coastal and valley freshwater marsh as described by Holland (1986); the Sawyer et.al. Alliance and is considered a NCSC (CDFG 2010).

Environmental Impacts

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

The following CEQA Checklist items were used to evaluate the impacts of the proposed project on freshwater marsh:

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

The project is expected to temporarily impact approximately 0.13 acre of freshwater marsh at Location 2 due to construction access required for the construction of the head wall and removal of the existing riser. Approximately 30 square feet of permanent impacts to freshwater marsh will result from the headwall. These impacts are also discussed in Impacts to Wetlands and Waters below.

Only a 30 square foot area (less than 0.001 acre) of this wetland will be permanently impacted. Areas temporarily impacted will be restored and revegetated with native species. Since the area was previously disturbed during the initial construction of the existing culvert/inlet and access road and because of the hydrology present in the area, there is a high probability that the temporarily impacted areas will return to pre-project conditions. Due to the reasoning above and with incorporation of the avoidance, minimization and mitigation measures there will be a less than significant impact to freshwater marsh.

Avoidance, Minimization, and/or Mitigation Measures

- Access to the work area will be minimized to the greatest extent feasible.
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion.
- Natural communities of special concern and other sensitive areas adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing.
- Construction storm water Best Management Practices (BMPs) will be in place to ensure that no pollutants or other deleterious materials enter the wetlands or waters.
- Erosion control and slope stabilization BMPs will be implemented to prevent sediment and other materials/debris from entering the freshwater wetland.
- Wet meadow (1) will be enhanced/restored with appropriate native wetland species upon project completion to offset impacts to wetlands resulting from project activities.
- A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted with permit applications.

With the exception of jubata grass patches, all habitat types/vegetation communities observed within the project ESL are considered ESHAs, because of their classification as a NCSC, designation as a California State Park natural preserve, and/or status as wetlands or waters. Table 2 summarizes areas of impacts. Avoidance, minimization

and/or mitigation measures are included under the detailed description for each under each resource.

Table 2: Impacts to Vegetation and Natural Communities of Special Concern in the Project Area.

	Area		
	Temporary	**Permanent**	**Total**
	SF/ Ac	**SF/ Ac**	**SF/ Ac**
Redwood Forest			
	887/0.02	50/<0.01	**937/0.02**
Jubata Grass Patches *			
	0	44,367/1.02	44,367/1.02
Arroyo Willow Thicket			
	2316/0.05	0	2316/0.05
Lagoon Beach *			
	0	0	**0**
Red Alder Forest			
(Salmon berry –red elderberry Association)	17,160/0.39	1106/0.02	**18266/0.42**
Wet Meadow			
	855/0.02**		**855/0.02****
Fresh Water Marsh			
	5560/0.13	30/>0.001	**5590/0.13**

*Vegetation not included as a NCSC.
**Impacts to wet meadow do not include the area that will be enhanced/planted for mitigation (only impacts resulting from culvert replacement.

Figures 1 and 2 show vegetation communities within the project footprint and study limits.

Figure 1

Lagoon Slip and Slide 01-0B420

Location 2: HUM-101 PM 113.76

Figure 2

Harry A. Merlo State Recreational Area (SRA) Natural Preserves
Affected Environment

Harry A. Merlo SRA contains significant natural features, including approximately 193 acres of old-growth forest, which were proposed for designation as *Natural Preserves* in the *Humboldt Lagoon State Park and Harry A. Merlo SRA General Plan* (California State Parks, 1986). Natural preserve designations receive the highest protection of California State Parks Lands and consist of "*distinct areas of outstanding natural or scientific significance."* These areas are established with the purpose *"to preserve such features as rare or endangered plant and animal species and their supporting ecosystems, representative examples of plant or animal communities existing in California prior to the impact of civilization".*

Three natural preserves have been proposed within the Harry A. Merlo SRA because they contain "*the best known example of an unusual old-growth forest association of coast redwood, grand fir, and Sitka spruce."*

Location 1 is within and adjacent to State Parks Natural Preserves within the Harry A. Merlo SRA.

Environmental Impacts

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

The following CEQA Checklist items were used to evaluate the impacts of the proposed project on the natural preserves:

- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?
- Would the project have a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Would the project have a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Potential impacts to the natural preserves are expected to be similar to those of natural communities of special concern. Impacts to natural preserves are expected to be minimal for the following reasons:

- The project will not result in the removal of any of the old growth/mature tree species for which these preserves were designated; and

- No significant widening, alignment shift or removal of forested areas within Caltrans right-of-way that is adjacent to these natural preserves that could further contribute to edge effects will occur as part of this project.

Potential impacts that could occur would only be positive due to the removal of a large area of jubata grass that is adjacent to the preserve. This area will be restored and revegetated with native species. Also, the following avoidance and minimization measures will be employed to control/reduce the spread of non-native, invasive species. Therefore, the project will result in a less than significant impact to State Park Natural Preserves.

Avoidance, Minimization, and/or Mitigation Measures

- Construction access will be limited to the smallest area feasible.
- Only hand work will occur within the Root Health Zone or the Structural Root Zone of any tree greater than 24-inch dbh.
- Measures to avoid the introduction and spread of invasive species will be employed and all known, non-herbaceous invasive species within the project area will be removed, contained and disposed of properly.
- Approximately 1.02 acres of jubata grass will be removed from the disturbed hillside above Big Lagoon (at Location 1) and replaced with native species to reduce potential impacts resulting from the spread of invasive species to State Parks preserves and other sensitive resources.
- Sensitive habitats (NCSC and State Park Preserves) adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing
- All temporarily disturbed areas will be restored and revegetated with appropriate native species upon project completion. If feasible, locally sourced natives will be used.
- A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted with permit applications.

The incorporation of these avoidance and minimization measures will further reduce the potential for impacts to the natural preserves.

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 Impacts.

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 Wildlife 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

Several wetlands or other waters of the U.S. (OWUS) were observed during the wetland delineation survey and determined to be jurisdictional under Sections 401 and 404 of the CWA. Permanent impacts to jurisdictional wetlands and OWUS will occur as a result of fill from the installation of the downdrain, as well as construction of the headwall, the drainage inlet, and the rock energy dissipater. The wetlands and OWUS in the project area consist of the following categories of jurisdictional features:

- Traditional Navigable Water (TNW) - includes 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 under federal law for any purpose.

- Relatively Permanent Waters (RPWs) - waters that flow continuously at least seasonally (typically at least three months of the year) and are not navigable, but are tributaries to or have a significant nexus to a Traditional Navigable Water.

- USACE 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 (hydrophitic vegetation, hydric soils and hydrology) characteristic of these features and have a significant nexus to a Traditional Navigable Water.

- Coastal Wetlands- considered jurisdictional under the California Coastal Act if they have at least one of the three parameters (hydrophitic vegetation, hydric soils or hydrology) characteristic of wetlands. All USACE wetlands are also considered coastal wetlands.

These features are described in detail below for each location.

Location 1

The study area at Location 1 contains a portion of Big Lagoon, which is classified as OWUS. This feature is described in detail below:

- OWUS #1 (TNW): Portions of Big Lagoon below the ordinary high water mark (OHWM) are considered jurisdictional OWUS. Several partially-vegetated areas exist seasonally below the OHWM along the lagoon beach; however, these areas are inundated when the Lagoon levels are high and below the OHWM, and therefore, are classified as OWUS.

- *Arroyo Willow Thicket* (Coastal only Wetland): Arroyo willow thicket exists within the project area at the base of the hillside (above the Lagoon beach) at Location 1. A large portion of this thicket is growing through or around RSP used to armor the hillslope. Plant species found in this coastal wetland are described in more detail above.

Location 2

A large portion of the study area within Location 2 classifies as jurisdictional wetlands. Three OWUS and 10 wetland features exist within Location 2. A single parameter wetland (Coastal wetland) also exists within the project area. These features are as follows:

Wetlands

- Red Alder slope wetland #1 (2.05 acres): This feature exists on the bottom portion of the slope on the upslope side of the Truttman sink maintenance yard. Most of this feature exists on the western side of the maintenance area where the slope becomes less steep below the road fill; this feature continues east along the bottom portion of the steep hillside (fillslope) and above the ditch. This area is dominated with red alder, with some Sitka spruce and an understory with cascara, twinberry, salmonberry, slough sedge, sweet coltsfoot, taperfruit shortscale sedge (*Carex leptapoda*) and swordfern.

- Red Alder slope wetland #2 (0.68 acre): This feature exists on the slope below the maintenance yard and above McDonald Creek Road. Vegetation within this wetland feature is similar to that described above. A bench exists as a result of

an old slide that supports a somewhat dense understory of slough sedge with ladyfern and skunk cabbage. The damaged downdrain is also located on this slope, and in some spots water from this drainage is surfacing and flowing down the hillside.

- *Wet meadow #1* (0.26 acre): This feature exists in the western portion of the maintenance yard; a portion of this wetland is within the western portion of the "jacking pit." This wetland is connected to the inboard ditch that runs the length of the maintenance yard and is dominated by non-native species including velvet grass and creeping buttercup.
- *Wet meadow #2* (0.15 acre): This feature is similar to the velvet grass dominated wet meadow described above, however it exists along a disturbed area in the northeast portion of the maintenance area near the gated entrance and is dominated by weeds as well as rushes, seep monkeyflower and watercress. This wetland is also associated with the inboard ditch.
- *Slide Wetland (coastal only wetland)* (0.25 acre): Two wetland areas exist adjacent to the northbound shoulder of U.S. 101 on the upper portion of a slip where the road prism is failing. These wetland features are dominated by non-native species, including velvet grass as well as rushes and sedges.
- *Freshwater Marsh* (0.36 acre): This feature exists at the southernmost portion of the project area and is associated with the unnamed drainage that flows through the damaged culvert and downdrain. The vegetation associated with this feature is described in more detail above.
- *Wet Access road (coastal wetland)* (0.13 acre): This feature is located on the southern portion of the project area and consists of an old road bed that was used for access to the culvert inlet. The road bed is saturated during a large portion of the year and has since become vegetated with wetland species.
- *Ditch Wetland #*1 (0.13acre): A wetland exists along the edges of a ditch that runs the length of the maintenance yard from east to west. This wetland is dominated by species such as seep monkey flower, panicled bulrush, pacific water-parsley, and watercress, with pacific aster and reed canary grass (*Phalaris arundinacea*).
- *Ditch Wetland #2* (0.11 acre): This wetland feature exists along the edges of the inboard ditch that runs along the eastbound side of McDonald Creek Road. This wetland is dominated by species including creeping buttercup, pig-a-back plant, and small fruited bulrush, with pacific water-parsley, skunk cabbage, and stinging nettle.

Waters (OWUS)

- *Unnamed Drainage/*Culverted OWUS **(RPW)**: This unnamed drainage originates at the south of the project, flows through the damaged culvert/downdrain and into the inboard ditch (Ditch #2, below) along McDonald Creek Road. Within the study area, approximately 820 feet are culverted and the other 115 linear feet of this feature are open channel.

- Ditch #1 **(RPW):** A 1,200 feet long ditch runs the length of the maintenance yard from east to west within the project area and carries flow for the majority of the year. This ditch connects to the drainage inlet that is part of the damaged culvert system that carries the unnamed drainage described above.
- Ditch #2 **(RPW)**: This ditch runs along McDonald Creek Road and carries water for the majority of the year. Some flow from this ditch enters a culvert that outlets on the other side of McDonald Creek Road. Approximately 270 feet of this ditch is included within the project ESL.

Environmental Impacts

Impact criteria define the level of direct and indirect impacts on wetlands and Other Waters of the United States. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on wetlands and Other Waters of the United States:

- Would the project 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?

The project is expected to have impacts to wetlands and OWUS and State, as well as impacts to Coastal Wetlands. These impacts are described per location below:

Location 1:

The project will result in a maximum of 0.05 acres of temporary impacts to a single parameter Coastal only wetland (arroyo willow thicket) due to trimming and other disturbance related to equipment access to replace the downdrain and remove jubata grass.

Location 2:

Permanent impacts to Wetlands and OWUS at Location 2 will occur as a result of:

- Fill from the replacement/abandonment of the culvert and downdrain.
- Construction of the rock energy dissipater at the outlet and the headwall at the inlet.
- Construction of the drainage inlet.
- Installation of the horizontal drains.

Temporary impacts to Wetlands and OWUS as well as Coastal only wetlands will occur as the result of construction of the jacking pit and drilling pad and construction access.

The project is expected to result in approximately 0.01 acre of temporary impacts to OWUS, which include two ditches and the unnamed drainage upstream and downstream of the culvert as a result of construction access. Also, 0.07 acre of permanent impacts is anticipated to culverted OWUS as a result of the culvert and downdrain replacement, and approximately 0.001 acre of permanent impacts to OWUS for the installation of the rock energy dissipater.

Wetlands

Approximately 0.39 acre of Red Alder slope wetland will be temporarily impacted due to construction access to the hillside required for replacement of the downdrain and construction/excavation of the jacking pit for the trenchless culvert installation. Permanent impacts to this area are estimated to be approximately 0.02 acre resulting from fill from the placement of the downdrain and rock energy dissipater.

Approximately 0.13 acre of the freshwater marsh wetland will be temporarily impacted due to construction access required to construct the headwall and remove the existing riser. Construction of the headwall will result in approximately 30 square feet (SF) of permanent impacts to this feature.

Approximately 0.02 acre of the wet meadow wetland will be temporarily impacted due to access required to construct the jacking pit and install the cut and cover portion of the culvert. Approximately 0.24 acre of this disturbed wetland is proposed to be enhanced for on-site mitigation.

Approximately 0.02 acre of wetlands associated with drainage ditches #1 and #2 will be temporarily impacted due to construction of the drilling pad for the horizontal drain installation (Ditch 1), and for construction access for the downdrain installation and rock energy dissipater. No permanent impacts to these features are anticipated.

Approximately 0.13 acre of temporary impacts to Coastal only wetland is expected at Location 2 resulting from use of the existing access road to access the culvert inlet for construction of the head wall and removal of the existing riser. Approximately 0.06 acre of permanent impacts to coastal only wetlands (slide wetland) is expected as a result of the reconstruction of the roadway and shoulder.

Table 3: Impacts to Wetlands in the Project Area				
	Temporary		**Permanent**	
	SF	Ac.	SF	Ac.
Location 1				
USACE	0	0	0	0
Coastal only	2316	0.05	0	0
Location 2				
USACE	24,534	0.56	1121	0.03
Coastal only	5,868	0.13	2500	0.06
Total	30,402	0.69	3621	0.09

Table 4: Impacts to Other Waters of the US in the Project Area					
	Temporary		**Permanent**		**Total**
	Location 1 (ft)	Location 2 linear ft./ac.	Location 1 (ft)	Location 2 linear ft./ac	(ft)
TNW	0	0	0	0	
RPW	0	103/ 0.01	0	23/ <0.001	**126 ft**
Culverted RPW	0	0	0	820/0.07	**820 ft**
Totals		**103/ 0.01**		**843/0.07**	

Avoidance, Minimization, and/or Mitigation Measures

- Appropriate Caltrans BMPs will be implemented to protect water quality.
- All work areas will be dewatered prior to starting work to minimize potential impacts to water quality in adjacent wetlands/waters.
- The downdrain at Location 2 will remain unburied to minimize disturbance to the existing slope wetland and to minimize potential future impacts.
- All disturbed areas will be treated for erosion control and will be restored/ revegetated upon project completion to prevent future erosion into wet areas.

Compensatory Mitigation

The proposed onsite mitigation includes enhancement of a 0.25 acre of the disturbed wet meadow area (1) within the Truttman sink maintenance area at Location 2. Additional offsite mitigation required for this project is proposed to be fulfilled as part of a larger Caltrans' Humboldt Bay area mitigation effort; at a US Army Corps of Engineers and Coastal Commission approved 80-acre mitigation area, planned to be developed in 2018. The proposed mitigation site is located in the Arcata bottoms, near the Mad River Slough Wildlife Area. The site consists of previously diked bay lands that were used for

cattle grazing that will be restored to palustrine forested, palustrine scrub-shrub wetland mosaic, including seasonally flooded freshwater marsh. Permanent impacts to wetlands will be mitigated at a 4.2:1 (onsite) and 5.1:1 (offsite) ratio (restored wetland to impacted wetland); these ratios were developed using USACE guidance (SPD Mitigation Ratio Setting Checklist [12501.1]). A 1:1 mitigation ratio is proposed for all temporarily disturbed areas as these areas will be re-planted within the same growing season.

With the incorporation of these avoidance, minimization and mitigation measures there will be a less than significant impact to Wetlands and Other Waters of the United States.

PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section 4 in this document for detailed information about these species.

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

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Wildlife Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Wildlife Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), CA Public Resources Code, Sections 2100-21177.

Affected Environment

No Special Status Plant Species were observed during the protocol rare plant surveys; therefore, none are anticipated to be impacted by the proposed project.

Environmental Impacts

None.

Avoidance, Minimization, and/or Mitigation Measures
None.

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 Oceanic and Atmospheric 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 3503.5, 3511, 3513, 4700, 5050, and 5515 of the California Fish and Game Code

Migratory Birds

Affected Environment

Focused surveys for nesting birds have not been conducted for this project.

Environmental Impacts

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

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

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in

local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

- Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The proposed project has the potential to directly impact migratory birds or their nests. With the implementation of the standard measures listed below, impacts to nesting birds are expected to be minimal and less than significant.

Avoidance, Minimization, and/or Mitigation Measures

The following standard measures are required by Federal and State regulations including the Migratory Bird Treaty Act and Fish and Game Code Section 3503 and 3503.5 protecting migratory birds:

- Vegetation will be removed outside of the nesting season (from September 16 to January 31) and will be kept trimmed and/or cleared prior to, as well as, during construction to discourage nesting.
- For contingency purposes, a plan will be developed prior to construction of the project to determine the protocol to be followed if any nesting birds are discovered in the project area, or if it is determined that additional vegetation will need to be removed during construction. This plan will be developed in coordination with the appropriate regulatory agencies. The plan will be based on following guidelines:
    - 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.

Del Norte Salamander

Affected Environment

The Del Norte salamander (*Plethodon elongatus*) is a California species of special concern. The mesic coastal forest within the project BSA is likely to provide habitat for this species. Although this species has some potential to occur at both locations, the Del Norte salamander is much less likely to occur on the jubata grass covered hillside at Location 1 where the majority of ground disturbance will occur, primarily because this area is more disturbed, provides less cover, is more arid and is of lower quality than adjacent habitat. The Del Norte salamander is more likely to use areas within Location 2.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on the Del Norte salamander:

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

The proposed project has potential to directly impact Del Norte salamanders. However, because there is sufficient suitable habitat for this species in the surrounding areas and because habitat will only be temporarily impacted, any direct take of individuals present in the project area would not substantially affect the population. Therefore there would be a less than significant impact to this species.

As part of its stewardship responsibilities and policies, however, Caltrans will implement the following avoidance and minimization measures to further reduce any potential impact:

Avoidance and Minimization Measures

- A qualified biologist will be on-site prior to, and during, any initial disturbance (i.e. clearing/grubbing and/or grading) of areas where the Del Norte salamander is likely to occur.
- Any Del Norte salamanders located during construction of the project will be relocated to a safe and appropriate off-site location determined by a qualified biologist.
- All holes and/or steep-walled trenches will be completely covered or fitted with escape ramps at the end of each work day to ensure no wildlife becomes trapped or harmed.

In addition, the removal and restoration of the 1.02 acre area of jubata grass could provide a benefit to the species.

Northern red-legged frog

Affected Environment

The northern red-legged frog (*Rana aurora*) is a California species of special concern. The freshwater marsh, riparian areas, wetland ditches and adjacent coastal forest within the project BSA provides habitat for this species. Although this species could occur at both locations, northern red-legged frog is less likely to occur on the jubata grass-covered hillside at Location 1, primarily because this area is more disturbed,

provides less cover, is more arid and is overall of lower quality than adjacent habitat. Several adults and metamorphs have been observed in and around aquatic areas at Location 2.

Environmental Impacts

Impact criteria define the level of direct and indirect impacts on northern red-legged frog. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on northern red-legged frog:

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

The proposed project has potential to directly impact northern red-legged frog; however, because this species is locally abundant, there is sufficient suitable habitat for this species in the surrounding areas and impacts to habitat will be mostly temporary, any direct take of individuals present in the project area would not substantially affect the population. Therefore there would be a less than significant impact to this species.

As part of its stewardship responsibilities and policies, however, Caltrans will implement the following avoidance and minimization measures to further reduce any potential impact:

Avoidance and Minimization Measures

- A qualified biologist will be on-site prior to, and during, any initial disturbance (i.e. clearing/grubbing and/or grading) of areas where northern red-legged frog could occur to clear the area of any northern red-legged frog.
- Any northern red-legged frog located during construction of the project will be relocated to a safe appropriate off-site location determined by a qualified biologist.
- All holes and/or steep-walled trenches will be completely covered or fitted with escape ramps at the end of each work day to ensure no wildlife becomes trapped or harmed.

White-footed vole

Affected Environment

The white-footed vole (*Arborimus albipies*) is a California species of special concern. The mesic coastal alder forest within the project's BSA and within the project footprint at Location 2, with a somewhat dense shrub layer and ground cover, provides many of the

habitat components preferred by this species. White-footed vole is likely to occur within the project area at Location 2.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on white-footed vole:

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

The proposed project has potential to directly impact white-footed vole; however, because there is sufficient suitable habitat for this species in the surrounding areas and impacts to habitat will be temporary, any direct take of individuals present in the project area would not substantially affect the population. Therefore there would be a less than significant impact to this species.

As part of its stewardship responsibilities and policies, however, Caltrans will implement the following avoidance and minimization measures to further reduce any potential impact:

Avoidance and Minimization Measures

- A qualified biologist will be on-site prior to and during initial disturbance (i.e. clearing /grubbing and/or grading) to clear any areas where white-footed vole could occur.
- Any white-footed vole located during construction of the project will be allowed to escape or will be relocated to a safe appropriate off-site location determined by a qualified biologist.
- All holes and/or steep-walled trenches will be completely covered or fitted with escape ramps at the end of each work day to ensure no wildlife becomes trapped or harmed.

Pallid bat, Silver-haired bat, Yuma myotis

Affected Environment

No protocol surveys were conducted for Bat Species of Special Concern; Pallid bat (*Antrozous palidus*), Silver-haired bat (*Lasionycteris noctivicans*), and Yuma myotis (*Myotis yumansis*). However, a habitat assessment was conducted within the project footprint. The mature redwood forest adjacent to Location 1 within the project footprint contained at least 12 trees with cavities that could be used by bat species for day

roosts, night roosts and, in the summer months, maternity roosts. No guano or urine staining was observed during the habitat assessment.

In an old growth forest in Del Norte County, a study examining bat use of trees with basal hollows observed indications of at least some amount of bat use in every tree sampled, with no apparent effect relating to distance to the highway (Gleman and Zelinsk, 1996). Although the area directly adjacent to the highway was not sampled in this study, bats are known to roost in bridges and other structures near highways, and therefore, highway disturbance is likely not an important factor in roost suitability.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on bat species of special concern:

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

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 currently exists on site and the fact that any increase in noise levels caused by the project would likely be reduced by the roosting structure, noise impacts to bats are expected to be minimal.

There will be a less than significant impact to the Pallid bat, Silver-haired bat and the Yuma myotis, or any other bat species of special concern.

Avoidance, Minimization, and/or Mitigation Measures

None.

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 (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 Wildlife 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 Wildlife 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 Wildlife 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 Wildlife 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

Affected Environment

The marbled murrelet (*Brachyramphus marmoratus*) is federally listed as threatened and listed as endangered by the State. No protocol surveys were conducted for marbled murrelets. Habitat suitability for the marbled murrelet 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. Both project locations are within areas designated as critical habitat for the marbled murrelet.

Location 1

Potential marbled murrelet habitat exists adjacent to Location 1 on the northbound side of U.S. 101 within Harry A. Merlo State Recreation Area. This area consists of an approximate 800-foot wide band of mature redwood forest that extends along the highway. This stand contains trees with large lateral limbs and other habitat characteristics preferred by the marbled murrelet. The habitat within the action area could be used by marbled murrelets for nesting. Also marbled murrelets may fly through the project footprint and action area during their daily migrations between nesting areas inland and foraging areas off the coast.

Location 2

The habitat within the Location 2 action area is very unlikely to be used by marbled murrelets for nesting because none of the trees are mature enough to provide the large lateral limbs marbled murrelets require for nesting. The majority of the trees within the action area are alder; however, a few stands of spruce are located near the edge of the action area. These stands are made up of primarily 1.5-2.5 foot dbh Sitka spruce and are not suitable for nesting. Marbled murrelets are very likely to fly through the area during their daily migrations between nesting areas inland and foraging areas off the coast.

Environmental Impacts

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

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

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

The proposed project will not result in any direct impacts to marbled murrelets or marbled murrelet habitat; however, marbled murrelet presence within the BSA and action area is inferred. All impacts to this species would be the result of indirect auditory disturbance associated with construction noise levels. It is anticipated that the project *may affect, but is not likely to adversely affect* marbled murrelet. The project activities and potential impacts to MAMU are covered under the USFWS-Caltrans Routine Maintenance Programmatic Letter of Concurrence (PLOC). Projects covered under the PLOC must adhere to Species-Specific Avoidance and Minimization Measures (AMM) which are outlined in the PLOC and listed below.

Using the USFWS 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 (~71-80 dB) 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 alarms[1]. Thus, the harassment distance for the marbled murrelet is estimated to take place within 165 feet of the project for all work, including back-up alarms.

The proposed project has potential to result in disturbance of marbled murrelets within the 165 foot noise disturbance buffer. However, no habitat for this species will be removed or modified, and no construction-related noise over the thresholds established by USFWS will occur during the marbled murrelet nesting season; therefore, effects to the species are expected to be minimal.

Avoidance, Minimization, and/or Mitigation Measures

As required by the PLOC, the following applicable species-specific protective measures will be implemented to ensure that potential effects to marbled murrelet are not significant:

- No proposed activity generating noise levels 20 or more decibels above ambient noise levels <u>or</u> with maximum noise levels (ambient noise plus activity-generated noise) above 90 decibels may occur during the nesting season (March 24 to August 19) (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 and September 15, project activities that will generate noise greater than or equal to 10 dBs above ambient levels will observe a daily work window beginning two hours after sunrise and ending two hours before sunset. Work that does not generate noise above ambient levels can occur outside of this daily work window.

As part of its stewardship responsibilities and policies, Caltrans will implement the following additional work window restrictions/avoidance and minimization measures to further reduce any potential impact:

- The following seasonal work restrictions will be observed:
  - <u>Location 1:</u> No work will occur from March 24 to July 31.
- All trash will be properly contained in wildlife-proof containers and removed from the project site daily to avoid attracting predators such as Steller's jays and ravens.

[1] *USFWS Caltrans Routine Maintenance Programmatic Letter of Concurrence* (USFWS 2014) excludes equipment back-up alarms from the noise disturbance criteria.

The project is located within designated critical habitat for marbled murrelet. No primary constituent elements will be altered; therefore, no impacts to critical habitat will result from the project activities.

Northern Spotted Owl

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 northern spotted owl (NSO). Habitat suitability for NSO was examined within a 0.25 mile buffer of the project footprint and the California Natural Diversity Database (CNDDB) was reviewed to determine any known northern spotted owl activity centers in the vicinity of the project (BIOS 2014). Potential suitable nesting/roosting habitat occurs within the 0.25-mile buffer of the project area. No potential nesting or roosting habitat for NSO occurs within the project footprint at either location. However, potential nesting/roosting habitat does occur within the BSA of both locations and the action area of Location 1. The majority of the habitat adjacent to Location 2 (within the action area) is too fragmented and does not provide the structure characteristic of high quality nesting/roosting habitat.

Location 1

Potential nesting/roosting habitat for northern spotted owl exists to the south of this location on the northbound side of U.S. 101. This area consists of an approximately 800-foot wide band of mature redwood forest that extends along the highway. This area is bordered by recently logged Green Diamond property to the south.

Location 2

Marginal northern spotted owl habitat exists to the south of Location 2. The habitat in this area consists of a 20-acre stand of 1.5-2.5 foot dbh Sitka spruce forest bordered by red alder forest. This stand could provide foraging habitat and roosting/dispersal habitat; however, it is unlikely that Northern spotted owl would use this area to nest.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on northern spotted owl:

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

The proposed project will not result in any direct impacts to northern spotted owl or northern spotted owl nesting/roosting habitat. All project impacts to this species would be the result of indirect auditory disturbance associated with construction noise levels. It is anticipated that the project *may affect, but is not likely to adversely affect* northern spotted owl. The project activities and potential impacts to NSO are covered under the USFWS-Caltrans Routine Maintenance Programmatic Letter of Concurrence (PLOC). Projects covered under the PLOC must adhere to Species-Specific Avoidance and Minimization Measures (AMM) which are outlined in the PLOC and listed below.

Using the USFWS 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 Northern spotted owl would likely be subjected to as a result of implementing the project. Ambient noise level of the project area is estimated to be moderate (~71-80 dB) 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 alarms[2]. Thus, the harassment distance for northern spotted owl is estimated to take place within 165 feet of the project for all work; this area is considered the project *Action Area*.

The proposed project is expected to result in harassment of northern spotted owl within the 165 foot noise disturbance buffer (i.e. action area). However, because no habitat for this species will be removed or modified and because no construction-related noise over 90 dB (with the exception of back up alarms) or noise greater than 20 dB over ambient is expected to occur during the northern spotted owl nesting season, effects to this species are expected to be minimal.

Avoidance, Minimization, and/or Mitigation Measures

As required by the PLOC, the following applicable species-specific avoidance and minimization measures will be implemented to ensure effects to northern spotted owl are not significant:

- No proposed activity generating sound levels 20 or more decibels above ambient noise levels <u>or</u> with maximum sound levels above 90 decibels(excluding back up alarms) may occur during the majority of the Northern spotted owl nesting season (February 1 to July 9)(Service 2006).
- No human activities shall occur within a visual line-of-sight of 131 feet or less from any known nest locations (Service 2006).
- No work will occur at Location 1 will occur during the Northern spotted owl nesting season (February 1 - July 31).

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

Bald Eagle

Affected Environment

The bald eagle (Haliaetus leucocephalus) is currently listed as endangered and fully protected by the state but has been delisted under the federal Endangered Species Act. No protocol surveys were conducted for the bald eagle. A nest exists approximately 0.5 mile south of Location 1. No known nests exist within the BSA; however, an individual was observed flying over the U.S. 101 to the north of Location 1 on May 8, 2014, during a botanical survey. Trees within the project action area could provide the structure required for nesting, and the Lagoons provide quality foraging habitat. It is unlikely that bald eagle would nest in the project BSA because the nest nearby would likely continue to be occupied because pairs generally return to the same site. Furthermore, an additional pair is unlikely to nest so close to a nearby nest.

Environmental Impacts

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

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

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

The proposed project will not result in any direct impacts to the bald eagle or bald eagle habitat. Any project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels, which is not anticipated to affect nesting pairs since the known nest is over 0.5 mile away. These impacts are not expected to result in state take of this species; therefore the impact of the proposed project on the bald eagle would be less than significant.

No additional avoidance and minimization measures are needed to further reduce any potential impact beyond those already established for northern spotted owl and marbled murrelet.

Little Willow Flycatcher

Affected Environment

The little willow flycatcher (*Empidonax traillii brewsteri*) is listed as Endangered by the State. No protocol surveys were conducted for the little willow flycatcher. Potential habitat exists within the project's BSA and portions of the project action area. At Location 1, the potential habitat within the action area is marginal, and unlikely to support this species; however, minimal habitat requirements are present. Potential habitat exists at

Location 2 to the north of the project area. Little willow flycatcher require greater than 20 percent cover of riparian scrub or at least 0.25 acre of contiguous shrub cover adjacent to a permanent water source or wet meadow (CDFW, 2004). Areas within and adjacent to the BSA meet the minimum necessary habitat components.

A small portion of willow scrub may be removed at Location 1 as part of the culvert repair; however, the likelihood that the little willow flycatcher would use the areas affected by the project is very low.

The closest documented little willow flycatcher observation is over 80 miles south of the project in a dense willow thicket along the South Fork Eel River.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on the little willow flycatcher:

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

The proposed project will not result in any direct impacts to the little willow flycatcher or little willow flycatcher habitat. Any project impacts to this species are the result of indirect auditory disturbance associated with construction noise levels and temporary impacts to marginal potential habitat. These impacts are not expected to result in state take of this species; therefore, the potential for the proposed project to impact the little willow flycatcher would be insignificant.

No additional avoidance and minimization measures are needed to further reduce any potential impact beyond those already established for northern spotted owl and marbled murrelet.

Pacific Fisher

Affected Environment

The Pacific fisher *(Martes pennanti pacifica)* is currently proposed for listing as Federally Threatened, and is a State Candidate for listing. The closest documented occurrence is approximately eight miles east of the project, in Redwood National Park.

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 and denning for this species.

The habitat adjacent to Location 1 is of better quality, as the adjacent forest is dominated by mature redwoods with basal hollows, as well as snags and down logs that could potentially be used for denning. At Location 2, the habitat within the project action area (i.e. noise disturbance buffer) is dominated by alder forest with some stands of Sitka spruce forest located on the outer portions. The stands of spruce forest present are somewhat fragmented and lack the complex structure associated with late succession forests, and therefore, are unlikely to be used by this species for denning. Areas within the project action area at Location 2 could be used for home range movements and could provide foraging habitat for this species. However, the proximity of both of the locations to heavily traveled U.S. 101 makes it unlikely that fisher would den within the action area, although use of the habitat within the project's action area for each location cannot be ruled out.

Environmental Impacts

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

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

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

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; therefore, the proposed project will have no impact on the pacific fisher.

Townsend's Big-Eared Bat

Affected Environment

The Townsend's big-eared bat *(Corynorhinus townsendii)* is currently a candidate for listing under CESA. No surveys were conducted for the Townsend's big-eared bat, however; a habitat assessment was conducted within the project action area. The old growth redwood forest adjacent to Location 1 within the project action area shows characteristics of a late succession forest with a substantial fire history and contained at least 12 trees with cavities that could be used by bat species for day roosts, night roosts and, in the summer months, maternity roosts. No guano or urine staining was observed during the habitat assessment. The BSA and action area provide cavities that could be used by the Townsend's big-eared bat and other bat species.

The closest documented observation of the Townsend's big-eared bat was the result of a road kill, approximately 65 miles south of the project off U.S. 101, just south of Scotia.

Parturition (giving birth) occurs mid-summer, coinciding with periods of high prey availability, and can vary from 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).

Environmental Impacts

Impact criteria define the level of direct and indirect impacts on the Townsend's big-eared bat. The purpose of the establishing criteria is to help determine when an impact is significant under CEQA.

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on the Townsend's big-eared bat:

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

The proposed project will not result in any direct impacts to the Townsend's big-eared bat or the Townsend's big-eared bat 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 because increases in noise level would likely be greatly reduced by the structure of the roosting habitat itself. Therefore, the proposed project will have a less than significant impact on the Townsend's big-eared bat.

Avoidance and Minimization Measure

Because Townsend's big eared bat young are capable of flying by July 31, the work window proposed for northern spotted owl at Location 1 will further reduce any potential impact to this species.

Special Status Fish Species

Affected Environment

Green Sturgeon

There are two populations of North American green sturgeon (*Acipenser medirostris*) in California, a northern Distinct Population Segment (nDPS) and a southern Distinct Population Segment (sDPS). The sDPS green sturgeon spawn in the Sacramento, Feather, and possibly the Yuba rivers. The nDPS green sturgeon spawn in the Rogue, Klamath, and historically in the Eel and Umpqua rivers. The sDPS is listed as Federally threatened and the nDPS is considered a FESA Species of concern by NMFS and a Species of Special Concern (SSC) by CDFW.

Big Lagoon is within the present range of the nDPS green sturgeon. Therefore, the Lagoon is presumed to provide habitat for this species. Although the Lagoon remains cut off from the ocean for the majority of the year, it may provide foraging habitat for sturgeon when it breaches. No green sturgeon spawning habitat occurs in the project action area, as green sturgeon spawn in deep pools of large river systems.

Northern California Steelhead

Big Lagoon is within the current range of Northern California steelhead DPS, which is listed as threatened under the FESA. Steelhead in the Big Lagoon/ Maple Creek basin are dependent on the lagoon breaching for both upstream migration (adults) and out-migration (juveniles)— occurring most years during high water levels in the fall and winter, but does not occur every year.

California Coastal Chinook Salmon

California Coastal Chinook salmon are listed as Threatened under the FESA. This evolutionarily significant unit (ESU) includes naturally spawned Chinook salmon originating from rivers and streams south of the Klamath River to and including the Russian River.

Big Lagoon is within the current extant range of California Coastal Chinook (PISCES database, 2014), and is considered critical habitat for the species. Big Lagoon is likely used by adults for staging and physiological transformation (required for returning to fresh water) and used by juveniles for foraging, refugia and physiological transformation (required for transition to a marine environment). Spawning habitat is small shaded streams with gravel substrates; no spawning habitat exists within the project area.

Coho Salmon

The Southern Oregon–Northern California Coast (SONCC) coho salmon *(Oncorhynchus kisutch)* Ecologically Significant Unit (ESU) is listed as Threatened under the FESA as well as the CESA. Big Lagoon is within the observed range of this species ESU, and is also within designated critical habitat for this species ESU.

Big Lagoon, and the estuarine environment, is likely used by adults for staging and physiological transformation (required for returning to fresh water) and used by juveniles for foraging, refugia and physiological transformation (required for transition to a marine environment). Spawning habitat is small shaded streams with gravel substrates; no spawning habitat exists within the project area.

Tidewater Goby

Tidewater goby was listed as federally endangered on March 7, 1994, and on March 13, 2014, it was reclassified as threatened. Tidewater goby inhabit semi-closed estuaries and lagoons of small coastal streams and are restricted to waters with low to moderate salinities. The tidewater goby is a short-lived species that has been documented in Big Lagoon, with a relatively large population occurring at the southern

end of the Lagoon near the boat ramp (California Department of Fish and Wildlife, 2008). Big Lagoon has been designated as critical habitat for tidewater goby.

Coastal Cutthroat Trout

The population of coastal cutthroat trout at Big Lagoon is regulated by the California Department of Fish and Wildlife as a species of special concern and as a sport fish.

Environmental Impacts

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

The following CEQA Checklist item was used to evaluate the impacts of the proposed project on special status fish species:

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

Impacts to special status fish species resulting from project activities are expected to be low due to the following reasons:

- No work will occur within the OHWM of Big Lagoon (or any other fish-bearing water) as part of this project.
- No work that would result in hydroacoustic effects to fish (i.e. impact pile driving, hoe ramming etc.) will occur as part of this project.
- No removal of fish habitat including any vegetation that could potentially provide shade or cover will occur as part of this project.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans will implement the following avoidance and minimization measures to ensure any potential impact to special status fish species is less than significant:

- No work (at Location 1) will occur during the wet season (October 15-June15).
- A Storm Water Pollution Prevention Plan (SWPPP) or a Storm Water Management Plan (SWMP) will be prepared for the project and/or 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.

INVASIVE SPECIES

Affected Environment

Several invasive plant species have been documented within the project area, including jubata grass (*Cortederia jubata*), Scotch broom, and Himalayan blackberry. These species are included on the California Invasive Plant Council (Cal-IPC) Inventory in the *high* category.

Species are rated as *high* because they are expected to have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most of these species are widely distributed ecologically.

Invasive species in the project area include: black mustard (*Brassica nigra*), bull thistle (*Cirsium vulgare*) and poison hemlock (*Conium maculatum*) are rated as *Moderate* and are considered to have substantial and apparent, but generally not severe ecological impacts. Creeping buttercup (*Ranunculus repens*) found in many of the wetland areas within the project area has a Cal-IPC rating of *Limited*. Species with this rating are either invasive however their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Other non-native weedy species not included in the Cal-IPC list include: white sweet-clover, Queen Anne's lace, Chicory (*Cichorium intybus*), sweet pea (*Lathyrus latifolius*), Australian burnweed (*Senecio minimus*), bird's-foot trefoil *(Lotus corniculatus*) and sow-thistle (*Sonchus sp.*) also occur onsite.

Environmental Impacts

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

The following CEQA Checklist items were used to evaluate the potential impacts of the proposed project resulting from the spread of invasive species:

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

A large portion of Location 1 is covered with a dense patch of jubata grass. The project footprint at this location was expanded to its current extent to include the removal of the majority of this jubata grass patch and revegetate the hillside as a restoration component.

The dense patch of jubata grass provides little habitat value to rare or special status plant or animal species. Removal activities have a relatively low potential to adversely

affect fish habitat because removal will occur during the dry season when lagoon levels are normally low, and any sediment generated during removal would be intercepted by the road and vegetation above the lagoon.

Avoidance, Minimization, and/or Mitigation Measures

With the implementation of the following avoidance and minimization measures the impact of the removal or spread of invasive species to special status species would be less than significant:

- Invasive species, including, but not limited to, jubata grass and Scotch broom, will be removed within the project limits as part of project activities.
- Plant species used for erosion control will consist of native species or non-persistent hybrids that will prevent invasive species from colonizing disturbed areas.
- Native vegetation will not be removed unless absolutely necessary. Vegetation, especially wetland, riparian or other sensitive communities, should be left on access roads and driven over or trimmed rather than removed.
- 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.
- Revegetation will be with locally native species and/or non-persistent hybrids that will serve to stabilize site conditions. Monitoring and maintenance of revegetated areas will be implemented by Caltrans staff (or their contractors) to ensure that natives become re-established and that colonization by invasive species does not occur.
- Prior to construction a revegetation plan will be developed. This plan will include a five-year monitoring/plant establishment period with specific success criteria outlined. A draft of this plan will be submitted to California State Parks and other agencies for review.
- Plants will be collected locally and outgrown prior to construction of the project to ensure there will be acceptable planting materials available at the time of revegetation planting. The proposed revegetation will be consistent with State Park's genetic integrity guidelines.
- Caltrans will not allow transport of soil and/or plant materials from any areas that support invasive species to areas that support native-dominated plant communities. Gravel and/or fill material to be placed in relatively weed-free areas will come from weed-free sources, if at all practicable.
- Caltrans staff and construction personnel will be provided information on weed identification and the importance of controlling and preventing the spread of identified invasive non-native species.

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 source[3] 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).

- 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.

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

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 Impacts. 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 effluent[4] 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 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

[4] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

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. RWCQBs 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:

- The Department must comply with the requirements of the Construction General Permit (see below).
- The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges.
- 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 October 2014. The project is located adjacent to Big Lagoon in Humboldt County. It is situated in the Big Lagoon Hydrologic Area (HA) 108.10 in the Trinidad Hydrologic Unit. The project is located in the Big Lagoon-Frontal Pacific Ocean watershed. The hydrologic information of the project is summarized in Table 5 below. Runoff from Location 1 of the project discharges to Big Lagoon. Runoff from Location 2 of the project discharges to Dry Lagoon. Both Big and Dry Lagoon drain into the Pacific Ocean. None of the receiving waters of the runoff from the project are CWA Section 303(d) listed waters with beneficial use impairments.

Table 5. Hydrologic Information

Route	Post Mile	Hydrologic Unit	Hydrologic Area	Hydrologic Area Name	Watershed	Average Annual Precipitation (Inches)
101	110.58 & 113.76	Trinidad	108.10	Big Lagoon	Big Lagoon-Frontal Pacific Ocean	57

Environmental Impacts

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

The following CEQA Checklist items were used to evaluate the impacts of the proposed project on hydrology and water quality:

- Would the project violate any water quality standards or waste discharge requirements?
- Would the project 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?
- Would the project substantially degrade water quality?

There is the potential for temporary water quality impacts to occur during the improvement activities due to work adjacent to Big Lagoon. Without implementation of 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 impacts can also occur as a result of an increase in impervious surface and an associated increase in storm water runoff volume. However, as currently scoped, the project does not propose to increase pre-storm damage impervious surface area. 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. These impacts are not anticipated to be greater than existing conditions.

Avoidance, Minimization, and/or Mitigation Measures

To prevent potential impacts to receiving waters as a result of construction activities and/or operations related to this project, temporary and permanent measures would be implemented in accordance with applicable storm water regulations and standards. Short-term temporary measures would focus on implementing construction BMPs aimed at reducing erosion and subsequent sediment transport. Long-term permanent measures would consider factors such as permanent stabilization of disturbed soil and natural storm water quality treatment. These regulations and applicable measures are listed below.

- Sediment and erosion-control BMPs would 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 and/or fiber rolls
    - Sandbag barrier
    - Gravel bag berm
    - Rolled erosion-control product (e.g., netting)
    - Designated Construction Entrance/Exit
    - Re-establishment of vegetation or other stabilization measures (hydroseeding, mulch) on disturbed soil areas and newly constructed slopes
    - Wind erosion control

- The project would incorporate pollution prevention and design measures consistent with the program set forth in the Caltrans Storm Water Management Plan to meet water quality objectives.

- The project would comply with Caltrans Standard Specifications for Water Pollution Control (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.

- If the total disturbed soil area is greater than one acre, a Storm Water Pollution Prevention Plan (SWPPP) would 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.

- All construction site BMPs would 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 would be required to implement a North Coast RWQCB-approved BMP Plan or equivalent for low-threat non-storm water (i.e., groundwater) discharges or similar expectations. The approved project-specific BMP Plan would allow coverage for such low-threat discharges under the Caltrans NPDES Permit (Order 2012-0011-DWQ). The BMP Plan would document and describe existing and proposed discharges and the types of BMPs (e.g., infiltration and design pollution prevention BMPs, such as rock energy dissipaters at culvert outlets, to prevent erosion) that would be implemented to eliminate or minimize impacts from non-storm water discharges into surface waters. The project-specific BMP Plan should be sufficient to prevent erosion, protect beneficial uses, and support the requirements (i.e., inspection, monitoring, reporting and enforcement) of the general management plan (or equivalent), when submitted and approved by the North Coast RWQCB.

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

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; Location 1 (PM 110.58) is approximately one (1) mile north of the intersection of U.S. 101 and LP Mill Road; and Location 2 (PM 113.76) is approximately .50 mile south of the intersection of U.S. 101 and McDonald Creek Road. 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's coastal zone jurisdictional boundary, a local coastal development permit will be required.

Coastal Wetlands and ESHAs occur at both locations. These resources are discussed in the Biological Resources sections entitled Coastal "Environmentally Sensitive Habitat Areas" (ESHAs) and Wetlands and Other Waters of the United States.

Environmental Impacts

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

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

- Would the project 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?

The project is expected to result in temporary impacts to approximately 0.56 acre of U.S. Army Corps of Engineers Jurisdictional (USACE) Wetlands, and approximately 0.13 acre of coastal wetlands. Permanent impacts to approximately 0.03 acre of USACE wetlands and approximately 0.06 acre of coastal only wetlands are expected at Location 2.

The project will result in permanent impacts to 820 feet (0.07 acre) of culverted OWUS and temporary impacts to 103 feet (0.1 acre) of un-culverted OWUS at Location 2. No impacts to waters, including Big Lagoon, are expected at Location 1.

Avoidance, Minimization, and/or Mitigation Measures

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

- Construction access will be limited to the smallest area feasible.
- Natural communities of special concern and other sensitive areas (i.e. wetlands and coastal ESHAs) adjacent to the areas needed for construction access will be protected with Environmental Sensitive Area (ESA) fencing.
- Measures to avoid the introduction and spread of invasive species will be employed, and all known, non-herbaceous invasive species within the project area will be removed, contained and disposed of properly.
- All disturbed areas will be treated for erosion control and be restored/ revegetated upon project completion to prevent future erosion and reduce the spread of invasive species.
- Appropriate Caltrans BMPs will be implemented to protect water quality.
- All work areas will be dewatered prior to starting work, to minimize potential impacts to water quality in adjacent wetlands/waters.
- The downdrain at Location 2 will remain unburied to minimize disturbance to the existing slope wetland and also to minimize potential future impacts.
-

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 U.S. 101 in Humboldt County, from Patrick's Point State Park, north to Stone Lagoon. The Pacific Coast Bike Route runs along U.S. 101. There are no project features that would potentially affect the California Coastal Trail or the Pacific Coast Bike Route.

COASTAL RESOURCES MAP

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)[5].

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.[6]

[5] http://climatechange.transportation.org/ghg_mitigation/
[6] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

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.

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. [7] 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.

[7] 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.

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 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.[8]

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.

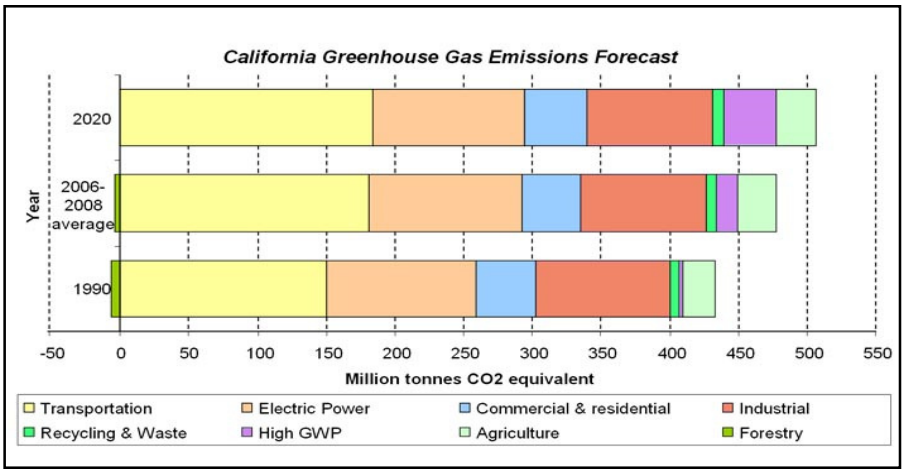
[8] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

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 change in emissions when combined with the contributions of all other sources of GHG.[9] 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 California State 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

[9] 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).

40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[10]

This project is a road safety and reconstruction project that was a result of slope failures that 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 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.

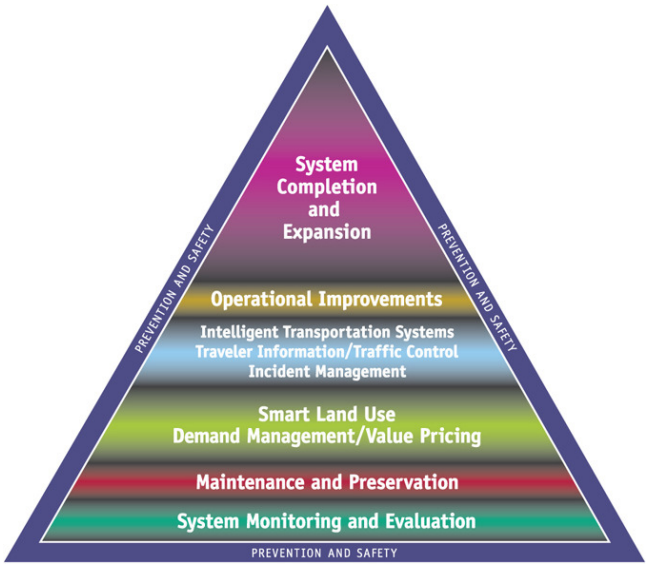
CEQA Conclusion

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.

[10] 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

Caltrans 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 Caltrans 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, as depicted in The Mobility Pyramid.



Caltrans 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. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans 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.

Caltrans 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 Caltrans and statewide efforts that Caltrans 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/CO_2 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 cement mix 25% fly ash cement mix > 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 Caltrans policy that will ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)[11] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas 2emissions 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" refers to how Caltrans 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, 2011[12],

[11] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml
[12] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

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)[13], 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.

[13] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[14] 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.

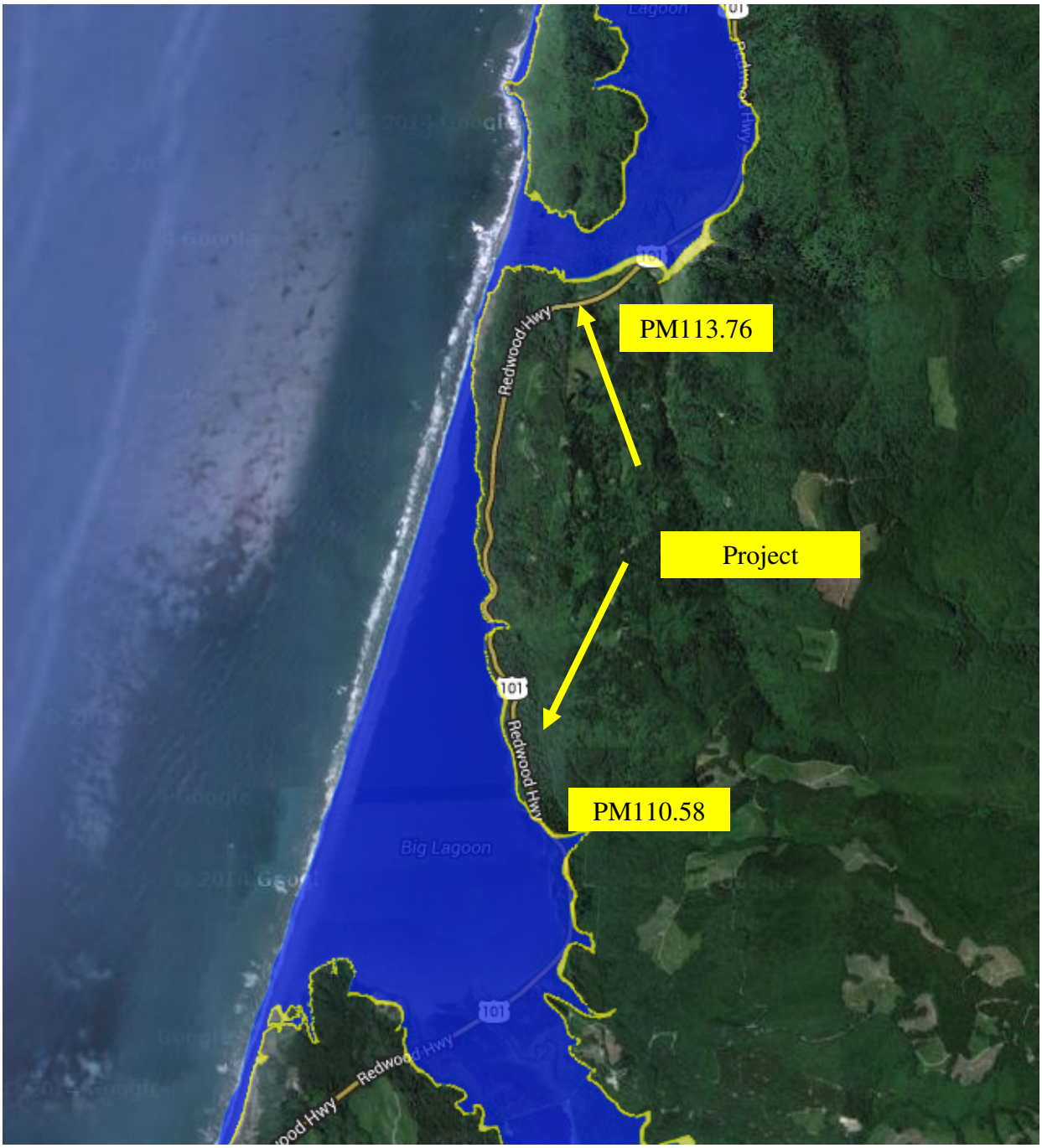
In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include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

[14] *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 2014[15]

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

[15] http://cal-adapt.org/sealevel/

need to be addressed on a regional level through collaboration between Caltrans and local agencies with land use authority.

Of the two locations associated with the project, the project at PM110.58 is located on the border 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, while the project located at PM113.76 is located outside of this area. This map shows the areas of direct impacts due to existing flooding potential or projected sea level rise inundation. This project proposes to restore failed slopes and improve culvert and drainage design at the two locations identified. These improvements have an approximated design life of approximately 20 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. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans 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, Caltrans 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, Caltrans 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. Caltrans 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 Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

The Initial Study with Proposed Mitigated Negative Declaration was made available for public and agency review and comment for 30 days. Caltrans has ensured that the document was 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 were made available at the Caltrans District 3 Office of Environmental Management (M-2) located 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.

Federal Endangered Species Act Consultation Summary

Informal Section 7 Consultation for effects to anadromous fish species under the NMFS jurisdiction was initiated and a Letter of Concurrence (LOC) was received from NMFS (NMFS 2015). Consultation for effects to TWG, NSO and MAMU and Designated Critical Habitat for MAMU and TWG will be covered under the USFWS-Caltrans Routine Maintenance Programmatic Letter of Concurrence (PLOC) (USFWS 2014).

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 repair of drainage facilities, and permanent restoration of storm damage) that "may affect but are not likely to adversely affect" specific federally listed species including TWG, NSO and MAMU, as well as other federally listed species that do not occur within the project's Action Area.

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

Section 7 Consultation for effects to listed anadramous fish species, designated critical habitat and consultation for effects to Essential Fish Habitat is in progress. Several activities associated with this project are not covered under the NMFS's Programmatic Authorization for Caltrans Routine Maintenance and Repair Activities. Therefore informal consultation was required. Caltrans has determined that the project "may affect but is not likely to adversely affect" the following listed anadromous fish species: Green sturgeon (Acipenser medirostris), California coastal Chinook salmon (Oncorhynchus tshawytscha), Northern California steelhead (Oncorhynchus mykiss), and Coho salmon (Oncorhynchus kisutch). Caltrans received a Letter of Concurrence (LOC) from NMFS (NMFS, 2015) stating that they are in agreement with these determinations.

California Endangered Species Act Consultation Summary

Discussions with CDFW for state listed species are in progress. Impacts to state listed and candidate species will not rise to the level of take under CESA. Section 86 of the Fish and Wildlife Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Wetlands and Other Waters Coordination Summary

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

California Coastal Act Coordination

Project Activities must be consistent with the California Coastal Act and the Humboldt County Local Coastal Program (LCP). Development occurring within areas containing "Environmentally Sensitive Habitats" (ESHA) shall be subject to conditions and requirements of the North Coast Area Plan of the Humboldt County LCP.

The California Coastal Act 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, streams and lagoons

A Coastal Wetland Delineation report, as well as an analysis of ESHAs in the project area will be submitted to Humboldt County for their review.

The Humboldt County General Plan – North Coast Area 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.

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

Melendrez, David, Senior 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 Report.

Appendix A Public Comments

STATE OF CALIFORNIA -- NATURAL RESOURCES AGENCY

EDMUND G. BROWN, JR, *Governor*

CALIFORNIA COASTAL COMMISSION

FACSI

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1385 EIGHTH STREET • SUITE 130
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April 27, 2015

California Department of Transportation
Attn: Cassandra Pitts
Environmental Management M2 Branch
703 B Street
Marysvile, CA 95901

RE: Comments on Initial Study with Proposed Mitigated Negative Declaration for "Lagoons Slip and Slide" U.S. Route 101, Post Mile 110.58/113.76, Humboldt County (SCH No. 2015032089).

Dear Ms. Pitts:

Thank you for the opportunity to comment on the above-referenced environmental document. We received the document at Commission's North Coast District Office on March 30, 2015. Please note that the following comments are from Commission staff; the Commission itself has not reviewed the document.

Caltrans proposes to restore and stabilize the southbound Highway 101 around Big Lagoon in Humboldt County, which was damaged by severe storm events in March of 2011 that caused two localized slope failures (at PM 110.58 and PM 113.76). At the southern location (PM 110.58, location 1), Caltrans proposes to replace the existing 90-ft-long, 18-inch-diameter CSP culvert, which separated due to fill slope failure. Caltrans will excavate the failed slope to prepare for replacement of the damaged downdrain and place ¼-ton RSP and imported fill around the downdrain. At the northern location (PM 113.76, location 2), Caltrans proposes to abandon the existing 42-inch-diameter corrugated steel pipe (CSP) culvert that conveys the water of "Truttman Sink," which separated due to embankment slope failure. Caltrans will install a new culvert by drilling sub-horizontally through the roadway fill in a 40-ft by 40-ft jacking pit excavated adjacent to the existing culvert. Dewatering of the site will be necessary, and Caltrans proposes to install a radial array of 11 horizontal drains from a 30-ft by 20-ft drilling pad located within the "Truttman Sink Maintenance Yard" located approximately 100 feet northeast of the proposed "jacking" pit location. After the new culvert is installed, a drain inlet will be placed, which will connect and carry the discharge from both the culvert and horizontal array. The remainder of the culvert to the downdrain, which will be 120 feet long and will remain unburied, will be placed by the cut and fill method. The outlet of the downdrain will terminate into an approximately 23-ft by 10.5-ft rock energy dissipater.

As noted in the environmental document, the proposed project requires a coastal development permit (CDP) from Humboldt County. The County's approval of the CDP would be appealable to

the Coastal Commission pursuant to Section 30603(a) of the Coastal Act and Section 312-13.12 of the Humboldt County Coastal Zoning Regulations (CZR) if the project meets any of the following criteria: (1) is located between the sea and the "first public road paralleling the sea" [as defined by CCR Section 13577(i)]; (2) is located within 300 feet of the inland extent of a beach or of the mean high tide line or within 100 feet of a wetland or estuary; and/or (3) constitutes a major public works project.

The following comments on the proposed project relate to the project's potential impacts on wetlands and other sensitive habitat areas, as discussed below.

1. The analysis of impacts to riparian habitat (Red Alder Forest) at location 2 (pages 19-21) finds that with the incorporation of various mitigation measures, including avoiding the introduction of invasive species, restoring/revegetating temporary impact areas, minimizing the construction footprint, using protective ESA fencing, and hand-removing about an acre of jubata grass from the hillside above Big Lagoon at location 1, there will be a less than significant impact to Red Alder Forest. However, unless an appropriate restoration and monitoring plan is developed and implemented for the impact area, it will not be possible to effectively determine whether or not the temporary impact area is restored to pre-construction conditions. We recommend elaborating on the listed avoidance, minimization, and mitigation measures in this section to specify that a Red Alder Forest Restoration Plan will be developed and implemented as proposed. The plan should include identification of a high quality red alder forest reference site that will be used to compare to the proposed restoration site in order to gauge restoration site success. It also should describe the specific success criteria that will be used throughout the duration of the monitoring period, such as native species cover and diversity in each vegetative stratum. Since it is a forest habitat that is being restored, monitoring of the site should occur for a long enough period for success to be realized, at least five years. The monitoring report should include a contingency/remediation plan in case success criteria are not met by the end of the monitoring period. With inclusion of this addition of this plan requirement mitigation measure, the project would minimize the project's substantial adverse effects on the red alder forest riparian habitat. 1 2 3

2. The project will impact a small area of Arroyo Willow thicket at location 1, but the document finds this impact to be less than significant because invasive species will be controlled/removed, native species will be planted in disturbed areas, the construction footprint will be minimized, ESA fencing will be used to protect adjacent sensitive habitats, and an acre of jubata grass will be removed from the hillslope and replaced with native species. Similar to the above comments for Red Alder Forest, we recommend adding a mitigation measure that would require the development and implementation of a monitoring plan for the willow habitat to ensure the success of its expected regrowth. The plan should include remedial measures to be undertaken if specified success criteria are not met within the monitoring timeframe. With inclusion of this additional mitigation measure to ensure no net loss of Arroyo Willow habitat, the project would minimize any substantial adverse effect on riparian habitat. 4 5 6

3. The environmental document describes impacts to about 0.02-acre of Wet Meadow habitat due to the proposed construction of the cut and cover portion of the culvert installation. It's unclear if this calculation includes impacts to coastal wetlands or only to wetlands defined by Section 404 of the Clean Water Act. Because the County's LCP includes policies requiring appropriate mitigation for wetland impacts (e.g., Section 30233 of the Coastal Act is codified in Section 3.40 of the North Coast Area Plan), the document should accurately quantify and 7

propose feasible mitigation for the full extent of the project's coastal wetland impacts, which may be greater than the calculated impacts to federally protected wetlands.

4. Similar to comments in #1 and #2 above, the document should add a mitigation measure that would require the development and implementation of a monitoring plan for the 0.13-acre of affected freshwater marsh habitat at location 2 to ensure its successful restoration. The plan should include remedial measures to be undertaken if specified success criteria are not met within the monitoring timeframe. In addition, the plan should include mitigation for the project's permanent impacts to 30-square-feet of freshwater marsh. At least 30 square feet of freshwater marsh wetland should be created or restored to avoid any net loss of freshwater marsh habitat. Due to temporal loss and uncertainty of restoration success, the mitigation ratio should be greater than 1:1 (e.g., at least 2:1 to 4:1 restored wetland to impacted wetland). With inclusion of these additional mitigation measures, the project would minimize any substantial adverse effects on freshwater marsh habitat. 8 9 10

5. According to Table 3 of the document, the project will temporarily impact about 0.70-acre of coastal wetlands and permanently impact ~3,621 square feet of coastal wetlands. Additional temporary and permanent impacts would occur to other waters per Table 4 (103 linear feet of temporary impacts and 843 feet of permanent impacts). The document concludes that with the incorporation of certain avoidance and minimization measures (specified as implementing basic construction-related BMPs, dewatering areas prior to construction, leaving the downdrain at location 2 unburied, and revegetating disturbed areas), there would be a less than significant impact to wetlands and other waters. In terms of compensatory mitigation for the calculated impacts, the document states that proposed onsite mitigation includes enhancement of 0.25-acre of the disturbed wet meadow area at location 2. The document goes on to state that "Additional offsite mitigation may be required for this project; however, the location of any proposed offsite mitigation has yet to be determined…"

   We disagree with the document conclusion that there would be a less than significant impact to wetlands and other waters simply by including the few mitigation measures proposed. We believe that the document should identify a feasible mitigation site to compensate for all the project's wetland impacts to avoid any significant adverse effects that the project may have on coastal wetlands and waters. Section 30233 of the Coastal Act, codified in Section 3.40 of the Humboldt County North Coast Area Plan, requires that projects involving diking, dredging, and filling of coastal wetlands and waters shall represent the least environmentally damaging feasible alternative and shall include feasible mitigation measures to minimize adverse environmental effects. We therefore recommend that for each element of the project involving diking, dredging, and/or filling of coastal wetlands and waters (including both temporary and permanent impacts), Caltrans should undertake an analysis of project element alternatives to ensure that the proposed project, in its entirety, represents the least environmentally damaging feasible alternative with respect to proposed design, equipment staging and stockpiling areas, etc. The project also should include a wetland mitigation plan to minimize the project's effects on coastal wetlands and waters and to compensate for the projected loss of wetlands/waters habitat. If the wetland mitigation cannot be accommodated on site, then Caltrans should identify a feasible off-site location(s) to perform in-kind wetland mitigation. The wetland mitigation ratio (type and amount of wetlands restored to type and amount of wetlands impacted) should be great enough to account both for the temporal loss of wetland habitat and function (from the time of impact to the time that the mitigation 11 12 13

wetland has been successfully restored to a functional habitat) and for the inherent uncertainty of mitigation success[1].

Again, thank you for the opportunity to comment, and feel free to contact me with any questions.

Sincerely,

Melissa B. Kraemer
Supervising Planner

Cc: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044
Steve Werner, Humboldt County Planning and Building Department

Ec: Tami Grove, Statewide Development & Transportation Program Manager, Tami.Grove@coastal.ca.gov

[1] E.g., see Ambrose et al. 2007. http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/mitigation_finalreport_full081307.pdf

Response to Comments from the California Coastal Commission

Response to Comment #1: The jubata grass will be removed both by hand and also by heavy equipment as described in the Description of the Project (Section 1) of the Final Environmental Document.

Response to Comment #2: A Restoration/Revegetation Plan will be developed for all areas that will be disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. Success criteria will be developed using the existing Red Alder forest within the project area as a reference site and/or another area of high quality red alder forest nearby. The plan will include a contingency/remediation plan in case success criteria are not met by the end of the monitoring period. This plan will be submitted to the California Coastal Commission and other agencies for review.

Response to Comment #3: Information on this restoration/revegetation plan will be included in the listed avoidance, minimization, and mitigation measures section of the Final Environmental Document.

Response to Comment #4: The project is expected to result in only minor, temporary impacts to Arroyo Willow Thicket. Impacts to this community are expected as a result of disturbance resulting from the removal and replacement of the downdrain; specifically, trimming for access and crushing and/or breaking of branches could occur during the replacement. The document found these impacts to be less than significant without mitigation; however, avoidance, minimization and mitigation measures were proposed to further minimize potential impacts in order to fulfill stewardship responsibilities and comply with Federal Highway Administration (FHWA) mitigation policy. Under this policy, mitigation of impacts must be considered whether or not the impacts are significant and agencies are required to identify and include in the action all relevant and reasonable mitigation measures that could improve the action.

Response to Comment #5: A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted to the California Coastal Commission and other agencies for review prior to construction.

Response to Comment #6: We will include information on the restoration/revegetation plan in the listed avoidance, minimization, and mitigation measures in this section in the Final Environmental Document.

Response to Comment #7: The wet meadow was delineated as a USACE wetland. Therefore, this 0.02 acres of impact to wet meadow includes both coastal wetland and 404 jurisdictional wetland impacts. Since the project is in the coastal zone, all wetlands (including CWA Section 404/USACE jurisdictional wetlands) within the project area are considered coastal wetland. In addition, there were several features that were identified as coastal wetland only. A total of approximately 0.69 acre of temporary impacts and 0.09 permanent impacts to coastal wetlands are expected to result from the construction of this project. These impacts will be fully mitigated (See Response to Comment #'s 10, 11 & 13 below). Changes will be made to the final environmental document to clarify the extent of coastal wetland impacts.

Response to Comment #8: A Restoration/Revegetation Plan will be developed for all areas that will be temporarily disturbed by the project. This plan will include a five-year monitoring/plant establishment period with specific success criteria, including criteria for native species cover and diversity in each stratum. The plan will include a contingency/remediation provision in case success criteria are not met by the end of the monitoring period. This plan will be submitted to the California Coastal Commission and other agencies for review prior to construction.

Information on the restoration/revegetation plan will be included in the listed avoidance, minimization, and mitigation measures in this section in the Final Environmental Document.

Response to Comment #9: In addition to restoration of all temporarily impacted areas, permanent impacts to freshwater marsh will be fully mitigated offsite at an approximate 80-acre Caltrans mitigation site (located in the Arcata bottoms, near the Mad River Slough Wildlife Area) that will be restored to palustrine forested, palustrine scrub-shrub wetland mosaic and include seasonally flooded marsh.

Response to Comment #10: Permanent impacts to wetlands will be mitigated at a 4.2:1 (onsite) and 5.1:1 (offsite) ratio (restored wetland to impacted wetland). Permanent impacts to freshwater marsh for this project will be mitigated offsite and therefore, at a 5.1:1 ratio.

Response to Comment #11: A Mitigation and Monitoring Plan will be developed for compensatory wetland mitigation associated with the project, including the restoration of the approximately 0.24 acre disturbed wet meadow (onsite) as well as restoration of freshwater marsh and palustrine forested wetland offsite at a Caltrans owned mitigation parcel. This Plan will be submitted to appropriate agencies prior to construction (during the permitting phase of the project). Caltrans proposes offsite mitigation, additional to on-site restoration, as part of a larger Caltrans' Humboldt Bay area mitigation effort; a US Army Corps of Engineers and Coastal Commission approved 80-acre mitigation area that is planned to be developed in 2018.

Response to Comment #12:

Measures to minimize temporary and permanent impacts to coastal wetlands and waters were incorporated into the project design and include limiting work to the roadway and existing disturbed area as much as possible. The horizontal drain pit and drainage array placement were designed to minimize impacts to existing wetland areas, as a radial pattern was chosen instead of the traditional horizontal pattern which would result in more wetland impacts.

Response to Comment #13: Caltrans proposes the following ratios to mitigate for the loss of wetlands: 5.1:1(offsite) and 4.2:1 (onsite) ratio for permanent impacts to wetlands and a 1:1 ratio for temporary impacts to wetlands; these ratios were developed using USACE guidance (See attached SPD Mitigation Ratio Setting Checklist [12501.1]).