State Route 128
Smoot Sink Storm Damage Repair Project

01-MEN-128-PM 34.5/35.5
EA: 01-47660
EFIS: 0100000351

Initial Study
with Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

September 2011

Caltrans

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SCH:
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INITIAL STUDY

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

THE STATE OF CALIFORNIA
Department of Transportation

28 March 2011
Date of Approval

John D. Webb, Chief
Office of Environmental Services, South
California Department of Transportation

State of California
Department of Transportation

SCH Number: 2011042011
01-MEN-128-PM 34.5/35.5
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Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation proposes to repair a segment of roadway and the adjacent slope on State Route (SR) 128 at Post Mile 34.5 to 35.5, approximately 5 miles southeast of Booneville in Mendocino County. This section of SR 128 has undergone recurring storm damage, earth movement, and maintenance repairs since the 1980's. The proposed project is intended to provide a long term solution that will stabilize the roadway and adjacent slope in order to reduce the risk of future slides and road closures. Repair will consist of stabilization of the slide area by constructing five anchor walls below the roadway and constructing a rock buttress at the "toe" (i.e. bottom) of the failed slope; reconstructing the roadway to improve its vertical and horizontal alignments; improving and replacing elements of the existing drainage system; and implementing permanent erosion control measures.

Determination

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

- The proposed project would have minimal or no effect on aesthetics, agricultural resources, air quality, cultural resources, geology and soils, hazards and hazardous materials, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utility and service systems.
- The proposed project would have a less than significant effect on water quality/storm water runoff and biological resources because avoidance and minimization measures have been included.
- The proposed project would have a less than significant impact on riparian habitat and other waters of the U.S. because avoidance, minimization and mitigation measures have been included.

Jammy Massengale for

John D. Webb
Chief, Office of Environmental Services – South
California Department of Transportation

9/16/11
Date

Table of Contents

Table of Figures

Chapter 1 Proposed Project

1.1 Purpose and Need

The purpose of this project is to repair storm damage that has occurred at post miles (PM) 34.5 to 35.5 on State Route (SR) 128 in Mendocino County and to modify the current design of the roadway and adjacent slope so that the facility will withstand future storm events. These improvements will reduce the risk of future slides and road closures. They will also reduce the need for the almost continuous maintenance efforts and costs that have been associated with this unstable, slide-prone area. Since 1989, Caltrans maintenance forces have placed about 6,700 tons of asphalt concrete and other materials at this storm damage site. (Refer to Location Map and Vicinity Map on pages 2 and 3.)

1.2 Description of Project

The project consists of one storm damage site, a slide that has a long history of instability. A previous project constructed in 1989 attempted to stabilize the slide by intercepting groundwater with a 250 feet long, 40 feet deep interceptor trench on the uphill (east) side of the roadway.

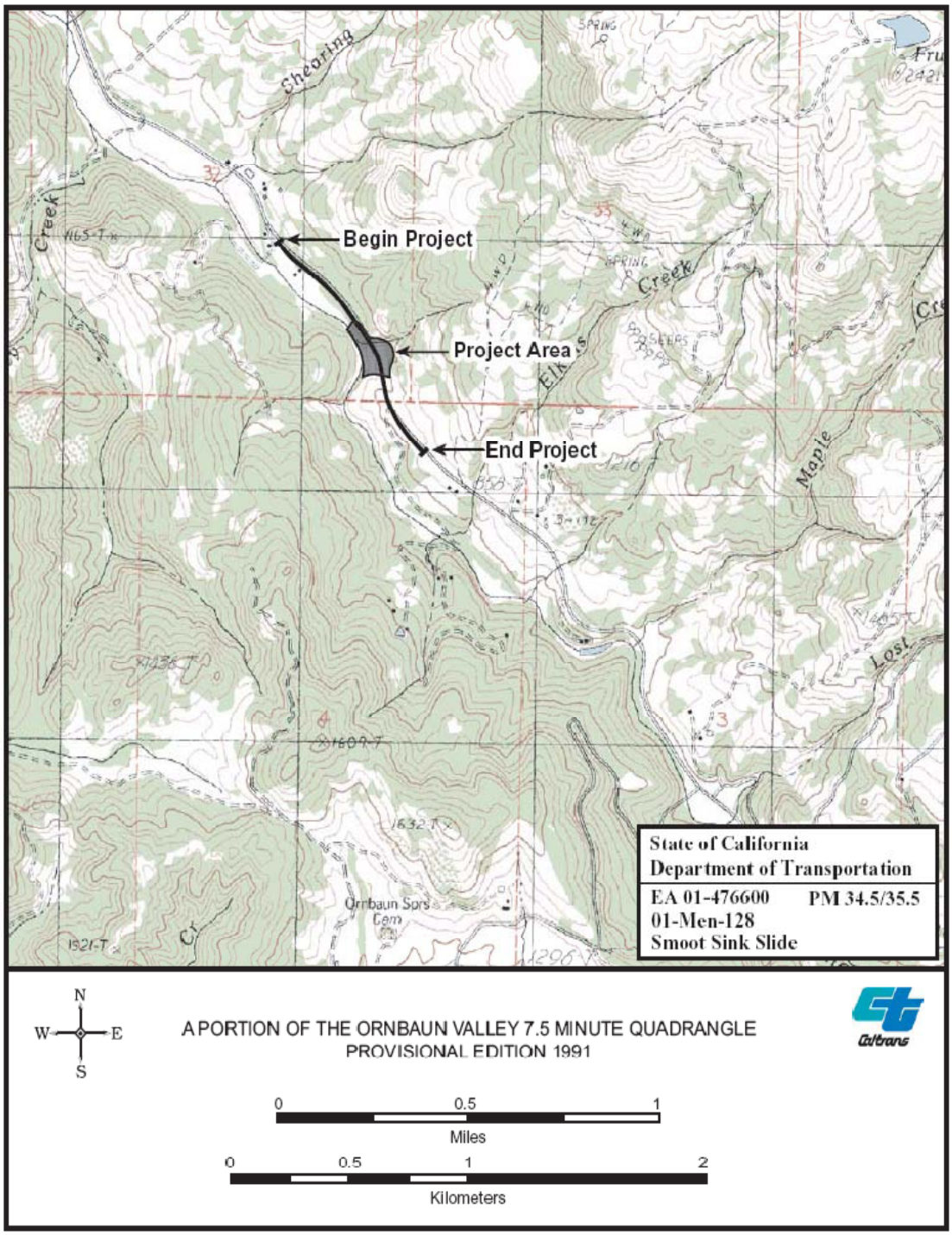
The following winter, the slide became active again, rupturing the horizontal drains and destroying the drainage system. The recurring slide has required almost continuous repair by maintenance crews to keep the roadway open.

Geotechnical and design studies have considered several alternatives for stabilizing the site. The strategy which is described in the following paragraphs has been chosen as the preferred and most cost effective alternative of those that were studied.

The proposed project will consist of four components and will require two construction seasons. During the first construction season, the first and second components will stabilize the existing slide by constructing five soil stressing anchor walls and a fabric lined rock buttress below the roadway, along Rancheria Creek. The third component, occurring during the second construction season, will reconstruct the vertical and horizontal alignments of the roadway and replace or improve portions of the existing drainage systems. The final component will implement permanent erosion control measures.

Additional details regarding each of the four components are provided below:

Project Location Map



Project Area.

Project Vicinity Map

Five individual **anchor walls** will be constructed at various distances and elevations below the roadway. These steel reinforced walls are post-tensioned via pressure grouted ground anchors drilled to a distance of approximately 150 feet at an angle of 30 degrees to stable ground below the slide. During this component of the project, approximately 5,550 cubic yards of soil will need to be excavated for construction of temporary access and temporary slopes. The excess excavated material will be stockpiled within a 1.2 acre temporary construction easement area and will then be used for backfill and temporary contour grading once the walls are constructed.

A fabric lined **rock buttress** will be constructed at the toe of the failing slope. This location is adjacent to Rancheria Creek, set back about 5 feet from the ordinary high water (OHW) mark alignment but outside the live channel, creating a plantable vegetative strip. Buttress construction will be scheduled to begin once the water table is at its lowest, which is expected to be in early August. Despite this "low flow" work window, it is expected that dewatering will be required when rock is being placed at the toe of the buttress and that it will need to continue until rock placement reaches an elevation that exceeds the current surface water elevation. The buttress will be approximately 30 feet high by 15 feet deep and 180 feet long with an approximate volume of 2,800 cubic yards. It is estimated that 2,600 cubic yards of soil will need to be excavated to construct the temporary slope. No excavation will occur within the ordinary high water alignment; however, 500 cubic yards of excavation will occur below the ordinary high water elevation. As the keyed toe for the buttress is excavated, a silt fence will be placed along the toe to protect the creek from sediment transport. All surplus excavated material will be used in backfilling of anchor walls for temporary grading prior to the application of hydroseeding for temporary erosion control. The temporary erosion control application will incorporate both soil stabilization and sediment controls and will be maintained by the contractor for the duration of the winter season.

The **roadway** will be **reconstructed** and the existing **drainage systems** will be **improved or replaced** during the second construction season. The roadway reconstruction will improve both the vertical and horizontal alignments and will attempt to maintain minimum design standards. In addition, 4 feet wide paved shoulders will be reconstructed as they were in the 1989 project, thus increasing the existing impervious surface area by approximately 5,300 square feet or 0.12 acre. The slope excavation will be minimized and will be designed in such a manner that surface runoff can "sheet flow" off the newly contoured and benched embankment below the roadway. This will allow significant natural infiltration to occur over

a large surface area before the runoff enters Rancheria Creek. The total quantity of excavation is estimated at 8,300 cubic yards, of which 3,000 cubic yards is asphalt concrete (AC) grindings. All surplus soils will be used in the final contour grading over the anchor wall and in the embankment below the roadway. It is anticipated that the contractor will recycle the AC grindings by processing them on-site in the temporary construction easement area for use as Class 2 aggregate base. The drainage improvements will entail upgrading two of the three drainage systems with in-kind replacements and placing coconut fiber blankets for erosion control at all three drainages. The coconut fiber blankets are impregnated with bonded fiber matrix (BFM) and seed and are being used in lieu of the typical rock slope protection (RSP) and fabric. They are intended to be placed along drainage inlets and outlets to reduce the potential for erosion and scour. At one of the drainage systems, the inlet will receive a 12 feet x 130 feet (1,560 square feet) blanket. At the second drainage system, the inlet will receive an 8 feet x 20 feet (160 square feet) blanket and the outlet will receive a 12 feet x 20 feet (240 square feet) blanket. At the third drainage system, the inlet and outlet will both receive a 5 feet x 20 feet (100 square feet) blanket. Only the outlet of the first drainage system will receive a 12 feet x 45 feet x 2 feet (1,080 cubic feet) section of rock and fabric because it is expected that the coconut fiber blanket would not withstand the high water velocities that occur at this location. The other two drainage systems will be replaced in-kind while the inlet of the first drainage system will be adjusted to match the new embankment grades. Typical replacement work will include the complete removal of the existing systems, installing new drop in grate opening (GO) inlets with hot mix asphalt (HMA) inlet aprons and dikes and new corrugated steel pipe (CSP), and reconnecting the existing under drains (UD). In all cases, the existing drainage channel alignments will be maintained. Use of the coconut fiber blankets, in lieu of RSP and fabric, will result in a reduction of about 2,178 square feet or 0.05 acre in the area of impact.

The final component is the implementation of **permanent erosion control measures**. In addition to the above mentioned drainage erosion control measures, all disturbed soil areas including staging and stockpile areas will be hydro-seeded with an appropriate application of BFM and seed as recommended by the Caltrans District Landscape Architect. Coconut netting will be placed prior to the hydro-seeding on the slope just below the roadway to protect from slope from the “sheet flow” drainage coming off the roadway. The final grading of the slide area slope below the roadway will be benched with alternating 15 feet long 2:1 slopes and 20 feet to 65 feet long 5% slopes that will allow for maximum infiltration of runoff water over a relatively large area. The 5% bench along the top of the rock buttress would provide a potential area for riparian vegetation planting. The vegetative strip along the OHW alignment of Rancheria Creek will be protected with a perimeter barrier and replanted with both native herbaceous plants and willows.

1.3 Alternatives

Build Alternatives

Caltrans' Geotechnical Engineering Branch performed an extensive investigation of this site in 2003–2004, producing the *Preliminary Geotechnical Report for the Smoot Sink Earth Failure.* This report presented several conceptual methods of stabilization. Caltrans subsequently determined that the preferred and most cost-effective slide stabilization scenario would be the construction of a ground anchor wall that utilizes the concept of "slope stressing" in conjunction with an RSP buttress at the toe of the slide.

The following list contains other design elements that were eventually removed from further consideration due to their environmental and regulatory permitting constraints:

- replacement/realignment of the existing drainage systems
- reconstruction and impermeable lining of the drainage channels
- installation of an in-stream desilting basin in intermittent stream B

No-Build Alternative

The No-Build Alternative would make no changes to existing site conditions and would, therefore, result in ongoing maintenance expenditures, additional drainage system failures, and continued sediment load input to Rancheria Creek, which would further degrade water and habitat quality. A massive slope failure and resulting catastrophic sediment load input into Rancheria Creek and Navarro River watershed (currently listed as a 303(d)-impaired stream) could easily be foreseen to occur in the near future. Other potential consequences of the no-build alternative include the loss of this section of SR 128, disrupted access to properties in the vicinity, and increased costs for eventual reconstruction.

1.4 Permits and Approvals Needed

The following permits, reviews, and approvals will be required for the project:

- United States Army Corps of Engineers (USACE): Clean Water Act of 1977, Section 404 Permit
- North Coast Regional Water Quality Control Board: Clean Water Act of 1977, Section 401 Certification
- Notice of Intent (NOI), California Construction General Permit, Order No. 2009-0009-DWQ

- California Department of Fish and Game: California Fish and Game Code 1602 Streambed Alteration Agreement

Pursuant to Section 7 of the Federal Endangered Species Act, Caltrans entered into informal consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) for federally listed anadromous fish species under their jurisdiction. A request for concurrence to a not likely to adversely affect the northern California steelhead (*Oncorhynchus mykiss*) and the California central coast coho salmon (*Oncorhynchus kisutch*) was submitted to the NOAA Fisheries on February 8, 2011. The NOAA Fisheries concurred with Caltrans' determination on July 19, 2011. This concurrence letter can be found in Appendix D.

Pursuant to Section 7 of the federal Endangered Species Act, Caltrans entered into informal consultation with the U. S. Fish and Wildlife Service (USFWS). A request for concurrence to a not likely to adversely affect the northern spotted owl (*Strix occidentalis caurina*) and a no effect on the marbled murrelet (*Brachyramphus marmoratus*) was submitted to the USFWS on September 20, 2010. The USFWS concurred with Caltrans' determination on March 22, 2011. This concurrence letter can be found in Appendix D.

Chapter 2 - Affected Environment, Environmental Consequences, and Avoidance, Minimization and/or Mitigation Measures

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered but no adverse impacts were identified. Consequently, there is no further discussion regarding the following issues in this document:

- Aesthetics
- Air Quality/Noise
- Community Character and Cohesion
- Cultural Resources
- Energy
- Environmental Justice
- Farmlands
- Geology/Soils/Seismic/Topography
- Growth
- Hazardous Waste/Materials
- Parks and Recreational Facilities
- Relocations
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Utilities and Emergency Services
- Wild and Scenic Rivers

2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Porter-Cologne Water Quality Control Act (California Water Code)

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 otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state.

The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) are responsible for establishing the water quality standards (objectives) required by the federal Clean Water Act (CWA), and regulating discharges to ensure that the objectives are met. Details regarding water quality standards in the project area are contained in the North Coast Regional Water Quality Control Board (NCRWQCB) Basin Plan.

States designate beneficial uses for all water body segments and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are state listed in accordance with Section 303(d) of the CWA. If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires establishing Total Daily Maximum Loads (TMDLs). TMDLs assess allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed necessary to restore and maintain the chemical, physical, and biological integrity of the watershed.

The following information regarding federal regulations is provided to clarify the State's responsibilities under the CWA:

Clean Water Act

In 1972, the Federal Water Pollution Control Act was amended making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Federal Water Pollution Control Act was subsequently amended in 1977 and was renamed the CWA. The CWA as amended in 1987 directed that storm water discharges are point source discharges. The 1987 CWA amendment establishes a framework for regulating municipal and industrial storm water discharges under the NPDES program. Important CWA sections are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for any project that requires a federal permit that proposes an activity, which may result in a discharge to waters of the United States, to obtain certification from the State that the discharge will comply with any provisions set forth by the RWQCB and/or SWRCB.

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) into waters of the United States. The RWQCBs and the SWRCB administer this permitting program in California. Section 402(p) addresses storm water discharges.

- 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 US Army Corps of Engineers.

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWQCBs are responsible for protecting water quality standards for water bodies within their regional jurisdiction using planning, permitting and enforcement authorities to meet this responsibility. Water quality standards consist of beneficial uses and water quality objectives. Water quality objectives are identified in the Basin Plan.

NPDES Program: The SWRCB adopted the Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Department rights-of-way, properties, facilities, and activities in the State. NPDES permits establish a 5-year permitting time frame. Regulations remain active until a new permit has been adopted. It is probable that a new Statewide NPDES Permit will be adopted prior to the time this project goes to construction.

In compliance with this 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 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 selecting and implementing Best Management Practices (BMPs). The proposed project will be programmed to follow the guidelines and procedures outlined in the 2003 SWMP to address storm water runoff or any subsequent SWMP version drafted and approved for a new NPDES permit.

Construction Activity Permitting: Section H.2, Construction Program Management of the Department's NPDES permit states "The Construction Management Program shall be in compliance with requirement of the NPDES General Permit for Construction Activities (Construction General Permit)". Construction General Permit (Order No. 2009-0009-DWQ) was adopted on September 2, 2009. This permit, which became effective on July 1, 2010, regulates discharges from construction sites that result in a disturbed soil area (DSA) of 1 acre or greater, and/or are part of a common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. This permit requires applicants to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP).

Coverage under the Construction General Permit requires the Department to submit a Notice of Construction (NOC) to the RWQCB and requires that a SWPPP be prepared prior to beginning construction activities. Submitting a Notice of Completion of Construction (NOCC) is required upon project completion. This process will remain applicable until a new Caltrans Statewide NPDES Permit is adopted. Adoption is expected to occur in October 2011.

Under Caltrans Standard Specifications, a Water Pollution Control Plan (WPCP) is prepared for projects with a DSA of less than 1 acre.

During the construction phase, the Department's Standard Special Provisions require appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate storm water pollution.

Affected Environment

A Water Quality Study for this project was prepared (and was last revised on January 21, 2011). The water quality study limits for this project are located on SR 128 from PM 34.5 to 35.5. The project is located in the Navarro River Hydrologic Watershed Area (HA) 113.50 and within the jurisdictional boundary of the NCRWQCB (Regional Board).

The receiving waters for this project (Rancheria Creek) are named in the TMDL for the Navarro River. The Navarro River is included on the CWA 303(d) list for impairments associated with excessive sediment and high temperatures. TMDLs addressing sediment and temperature impairments were established by the U.S. Environmental Protection Agency (USEPA) in December 2000. The Navarro River Sediment TMDL was included in Resolution

R1-2004-0087, Total Maximum Daily Load Implementation Policy for Sediment Impaired Receiving Waters in the North Coast Region, adopted by the NCRWQCB in November 2004.

Existing erosion concerns have been identified at the toe of the slope adjacent to Rancheria Creek and in the channels proposed for stabilization.

Environmental Consequences

The project will result in a disturbed soil area that is greater than one acre. The project will increase the existing impervious surface. This will result in a permanent increase in the volume of storm water runoff discharged within the project limits.

Excavation to place the rock buttress will be in close proximity to the channel and may, therefore, cause increases in turbidity in Rancheria Creek that would exceed water quality standards contained in the Basin Plan. (Turbidity increases that exceed 20% above background levels are prohibited.)

During construction, the project could have potential, temporary adverse impacts due to increased erosion that could be transported to receiving waters. The project will remove riparian vegetation. Removal of riparian vegetation is cited in the TMDL as a factor in increasing temperature of adjacent receiving waters.

There is a potential for spills and leaks of lubricant, oil, grease, and other fluids associated with vehicles and equipment during construction. An accidental release of these materials could pose a threat to water quality if contaminants enter Rancheria Creek or its tributaries.

The potential for these environmental consequences/impacts will be minimized through the measures discussed in the following section.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance/Minimization Measure No. 1: Caltrans will implement water quality protection measures.

For the most part, the measures discussed below are standard Caltrans water quality control measures, standard BMPs and NPDES requirements.

Proper notification procedures to obtain coverage for storm water and non-storm water discharges associated with construction activities under the terms of the Caltrans Statewide NPDES Permit and/or the Construction General Permit current at the time of construction will be required. To comply with the conditions of the Department's Statewide NPDES Permit, and

to address the potential temporary water quality impacts resulting from construction activities, Standard Special Provisions (SSP) 07-345 and 07-346 will be included as part of the Plans, Specifications, and Estimates for this project. SSP 07-345 will address water pollution control work and implementation of a SWPPP during construction. SSP 07-346 will address source control requirements during construction.

To address increases in impervious surface and the resulting increases in storm water runoff, the Section 401 Water Quality Certification that is issued by the NCRWQCB will require that a storm water treatment plan be prepared and submitted for approval.

The proposed construction will include all necessary erosion control and water quality control measures. To minimize the potential for sedimentation, the project will include the construction BMPs that are identified in the Department's Storm Water Quality Handbooks: Construction Site BMPs Manual. The Department's approved construction BMPs that apply to this project include measures for temporary sediment control (such as silt fences, fiber rolls, straw bale barriers, and temporary detention basins) and measures for temporary soil stabilization (such as hydraulic mulching, hydroseeding, and straw mulch).

A revegetation plan will be implemented to reduce impacts associated with riparian vegetation removal. Riparian vegetation removal has the potential to impact water quality (and to impair beneficial uses of the affected water bodies), as well as to impact biological resources (such as wildlife habitats). The proposed revegetation plan is also discussed in the Biological Resources section of this document, under Natural Communities (red alder riparian forest) and under Threatened and Endangered Species.

With regard to a potential spill or leak, Caltrans has contingency plans, procedures, and emergency response crews trained for incident response. These procedures designate a chain of command for notification, evacuation, containment and cleanup of spills resulting from the use and/or transport or hazardous materials.

Avoidance/Minimization Measure No. 2: No direct discharges to surface waters will be allowed unless they are covered under Order R1-2009-0045 (also known as the Low Threat Discharge Permit). The dewatering plan for this project will not allow discharges to surface waters unless the water meets the criteria listed in Order R1-2009-0045. If these criteria are not met, the water to be discharged is not eligible under the Low Threat Discharge Permit. In this event, the project would need to include proper containment and disposal methods to avoid direct non-storm water discharges to surface waters.

2.2 Biological Environment

2.2.1 Natural Communities

Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

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

Affected Environment

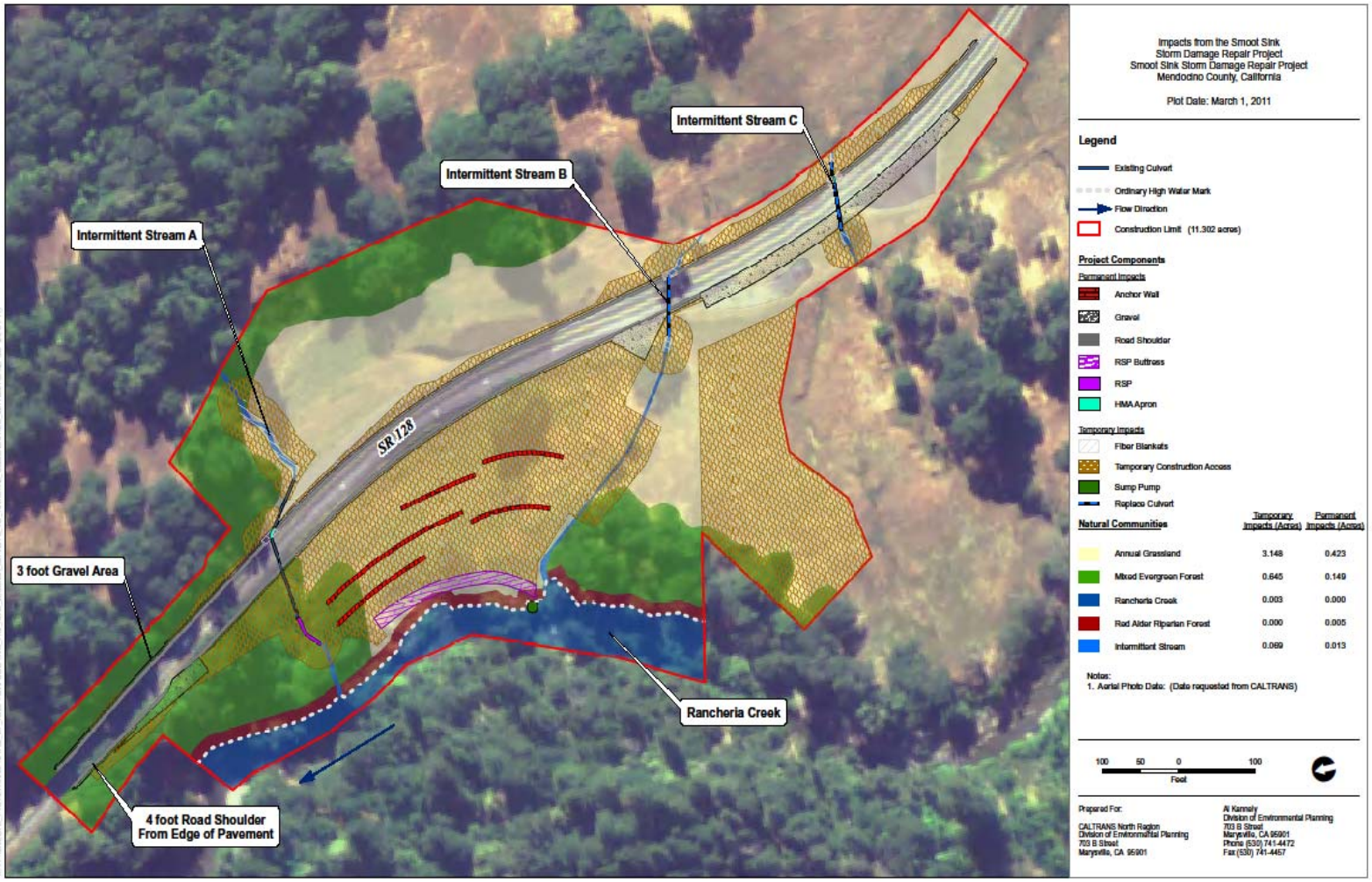
According to the Natural Environment Study (NES) that was completed in August 2010, the following natural communities of special concern occur in the study area: a seep wetland, other waters (i.e. nonwetlands) including Rancheria Creek and 3 intermittent streams, and a red alder riparian forest. The seep wetland and the other waters are discussed in the following (Wetlands and Other Waters) section**.**

A narrow (i.e. approximately 15 feet wide) band of red alder riparian forest comprising 0.259 acre occurs along the east bank of Rancheria Creek within the project area. Red alder (*Alnus rubra*) is the dominant overstory species. Willows (*Salix* spp.) and bigleaf maple (*Acer macrophyllum*) were also observed. The red alder riparian forest lacks a shrub understory and the herbaceous understory consists solely of scattered sedges (*Carex* spp.).

Environmental Consequences

The installation of the proposed RSP buttress would result in permanent impacts to 0.005 acre of red alder riparian forest that shades 108 linear feet of Rancheria Creek. (Refer to Project Impact Areas Map on page 16.)

Project Impact Area Map



Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure No. 1: Caltrans will compensate/mitigate for the loss of the 0.005 acre of red alder riparian forest and 108 linear feet of shade for Rancheria Creek to ensure no net loss of riparian habitat functions and value. The compensation ratio will be determined through coordination with the appropriate state and federal agencies. If the mitigation ratio is greater than 1:1, a suitable offsite mitigation location would need to be identified. Rancheria Creek or the Navarro River watershed would be potential suitable mitigation sites.

Caltrans will prepare a restoration and monitoring plan that describes how riparian habitat will be enhanced or re-created and monitored over a minimum period of time, as determined by the appropriate state and federal agencies. The restoration and monitoring plan will be developed prior to the removal of existing riparian vegetation. It will specify the planting stock appropriate for each riparian land cover type and each mitigation site and will ensure the use of genetic stock appropriate for the project area. The maintenance of plantings will include weed removal, herbivory protection, and irrigation. The plan will employ the most successful techniques available at the time of planting. Appropriate planting ratios and densities will be established to provide a high probability of successful restoration of riparian vegetation and canopy cover along the stream. The plan will include performance measures, success criteria, and contingency plans to address any failures.

2.2.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 USC 1344) is the primary law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States 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 Clean Water Act, 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 Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists

that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (EPA).

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG 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 CDFG.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please refer to the Water Quality section for additional details.

Seep Wetland

Affected Environment

According to the August 2010 NES, one seep wetland, which is 0.007 acre in size, is located approximately 150 feet upslope from Rancheria Creek in the southwestern portion of the project study area and outside of the limits of the proposed construction area. Based on data collected during the 2009 delineation field work, the seep wetland contains positive indicators of the three federal wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

Environmental Consequences

Impacts to the seep wetland, which is located adjacent to the construction area, will be avoided as indicated in the following section.

Avoidance, Minimization, and/or Mitigation Measures

Since the seep wetland is not within the proposed construction area, no impacts are anticipated. To ensure against incidental impacts, the following avoidance measures will be implemented:

Avoidance/Minimization Measure No. 3: Environmentally Sensitive Area (ESA) fencing will be constructed. Caltrans or its contractor will install ESA fencing (including sediment fencing, where appropriate) as a barrier to protect sensitive biological resources located adjacent to the construction area. This ESA will be identified in the contract plans and specifications. Prior to construction, a qualified biologist will stake or flag the area to be protected. The fencing will be in place prior to the beginning of construction and will be maintained for the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease to allow for its replacement.

Avoidance/Minimization Measure No. 4: Environmental awareness training for construction personnel will be conducted. Caltrans or its contractor will conduct environmental awareness training for all construction personnel prior to the beginning of construction. The training will provide a brief overview of the biological resources that could occur in the project area, the locations in which they could occur and the need to avoid impacts to these resources. Personnel will be made aware of the restrictions and guidelines for avoiding and/or minimizing impacts. The contractor or his crew foreman will be responsible for ensuring that all personnel adhere to the restrictions and guidelines. Training will be repeated for new personnel joining the construction crews.

Other Waters

Affected Environment

The other waters in the project study area include Rancheria Creek and segments of three unnamed intermittent streams (identified as A, B, and C on the Project Impact Areas Map on page 16).

Rancheria Creek is a perennial stream that flows north to the Navarro River, a tributary of navigable waters (TNW). TNWs are waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide (*33 Code of Federal Regulations* [*CFR*] *§ 328.3[a][1]* and *40 CFR § 230.3 [s][l]*).

The three intermittent streams in the project area are unnamed tributaries to Rancheria Creek. They originate east of SR 128 and convey flows from upslope down to the creek via culverts underneath the highway. Intermittent streams are frequently dry during the summer and generally have flowing water during periods of rainfall. However, they can have flow during dry periods as a result of groundwater inflows. At the time of the February 2008 delineation field work, these intermittent streams were dry or contained only small areas of ponded water. During the April 2010 field surveys, intermittent streams B and C held small amounts of water, while intermittent stream A, which is in the northeastern corner of the study area, contained more water and was flowing. Additionally, intermittent stream A is wider than intermittent streams B and C, has lower sloped banks on the east side of SR 128, and is conveyed downslope from the road through a large culvert on the west side of SR 128. Intermittent streams B and C are narrower with steeply sloped banks.

The following portions of the intermittent streams occur within the project area:

Intermittent Stream A -- 0.047 acre
Intermittent Stream B -- 0.044 acre
Intermittent Stream C -- 0.010 acre
0.101 total acreage

Environmental Consequences

The proposed project will result in permanent impacts to the riparian area along Rancheria Creek and both permanent and temporary impacts to the three intermittent streams.

Permanent impacts to the riparian area above the ordinary high water mark (OHWM) along Rancheria Creek include the removal of 0.005 acre of red alder riparian forest and the placement of a RSP buttress wall.

Approximately 0.069 acre of temporary impacts to intermittent streams will result from adjacent temporary construction access and from the biodegradable coconut fiber blankets which will be placed for slope stabilization until vegetation regrows. Approximately 0.013 acre of permanent impacts to intermittent streams will result from the installation of RSP within the stream channel.

Avoidance, Minimization and/or Mitigation Measures

Mitigation Measure No. 2: Caltrans will mitigate/compensate for impacts to other waters by implementing the conditions and requirements of the state and federal permits that are

obtained for the project. The compensation ratios to be implemented will be determined during the permitting process.

For those portions of Rancheria Creek and the intermittent streams that are outside of but adjacent to the proposed construction area, impacts will be avoided or minimized by implementing the same two measures that are intended to protect the wetland seep (i.e., Avoidance/Minimization Measures No. 1 and 2: ESA fencing and environmental awareness training for construction personnel).

2.2.3 Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share 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 afforded 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).

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

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

Affected Environment

The biological study area is not expected to provide suitable habitat for any of the special status plant species that have a potential to occur in the project area and no special status plant species were identified during the botanical surveys.

Environmental Consequences

Because no special status plant species were found during the botanical surveys and the current environment within the project area is not likely to support special status plant species, no impacts to special status plants are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

Due to the absence of special status plant species, no protective measures are required.

2.2.4 Animal Species

Regulatory Setting

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

Federal laws and regulations pertaining to wildlife include the following: National Environmental Policy Act, Migratory Bird Treaty Act, and Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the following: California Environmental Quality Act, Sections 1600 – 1603 of the Fish and Game Code, and Section 4150 and 4152 of the Fish and Game Code.

Affected Environment

Sensitive wildlife species that could occur in the study area were identified based on a review of existing information and reconnaissance level field surveys. Based on these biological field surveys, it was determined that seven wildlife species have the potential to occur in or adjacent to the biological study area: foothill yellow-legged frog (a state species of special concern), western pond turtle (a state species of special concern), California red-legged frog (a federal threatened species and a state species of special concern), northern goshawk (a state species of special concern), bald eagle (protected under the federal Bald and Golden Eagle Protection Act, endangered under the California Endangered Species Act, and fully protected under the California Fish and Game Code), northern spotted owl (a federal

threatened species and a state species of special concern), and nesting migratory birds (protected under the federal Migratory Bird Treaty Act and under California Fish and Game Code Sections 3503 and 3503.5).

Environmental Consequences

Pursuant to Section 7 of the federal Endangered Species Act, Caltrans entered into informal consultation with the U. S. Fish and Wildlife Service (USFWS). A request for concurrence to a not likely to adversely affect the northern spotted owl (*Strix occidentalis caurina*) and a no effect on the marbled murrelet (*Brachyramphus marmoratus*) was submitted to the USFWS on September 20, 2010. The USFWS concurred with Caltrans' determination on March 22, 2011. This concurrence letter can be found in Appendix D.

Foothill Yellow-Legged Frog and Western Pond Turtle

Construction of the rock buttress next to Rancheria Creek and drainage improvements in intermittent stream A would permanently modify a small amount (0.066 acre and 0.021 acre, respectively) of suitable habitat for foothill-yellow legged frog and a small amount (0.066 acre) of suitable aquatic habitat for western pond turtle. Modification of these small amounts of habitat would not substantially affect foothill yellow-legged frog and western pond turtle. Construction of the anchor walls could result in the disturbance of western pond turtle eggs, if nests are present in the grassland area adjacent to the creek.

California Red-Legged Frog

Because Rancheria Creek does not provide suitable breeding habitat for California red-legged frog and the potential for the species to occur in the creek is considered low, no impacts on California red-legged frog are expected to result from construction activities within the creek.

Northern Goshawk

Construction will result in the permanent loss of 0.154 acre of northern goshawk foraging habitat (mixed evergreen forest and red alder riparian forest) which is considered a small amount of habitat.

Construction activities and noise could result in the disturbance of nesting northern goshawks if they are present in the vicinity of the project.

Bald Eagle

Construction activities and noise could result in the disturbance of nesting bald eagles if they are present in the vicinity.

Northern Spotted Owl

Construction would not result in a loss of suitable habitat for northern spotted owl.

Construction activities and noise have the potential to disturb nesting spotted owls if they are present in the vicinity. Based on the following conditions and information, it has been determined that construction noise levels will not constitute a disturbance that would result in "take" of northern spotted owl.

According to USFWS guidance (U.S. Fish and Wildlife Service 2006), project-generated sound exceeding ambient conditions by 20 to 25 decibels (dB) and/or human activities with a visual line-of-sight distance of 130 feet would result in disturbance that disrupts normal behavioral patterns (i.e., take). Behavioral changes of adult spotted owls such as being flushed from a nest, abandoning a feeding attempt, or delaying feeding attempts of young could result in mortality of fertile eggs or nestlings, or reduced juvenile growth or survival.

The proposed project would not include pile driving, blasting, or rock sorting. Chainsaws would be used to remove some small red alder trees along Rancheria Creek where the rock buttress will be constructed and to remove one large California bay tree upslope of the rock buttress. Tree removal would occur during the nonbreeding season.

Construction of the anchor walls would require use of a large excavator, a medium to large bulldozer, 35–40 ton capacity off-highway dump trucks, a boring rig, a forklift, compactor, concrete trucks, and portable concrete pumps. Construction of the anchor walls would occur between June 15 and September 30. A noise analysis was conducted to determine ambient and project-generated noise levels. Existing sources of noise in the project area include vehicular traffic on SR 128 and water flowing within Rancheria Creek. During the summer months, it is expected that noise from the creek would decrease due to reduced water flow and noise from vehicle traffic would increase due to an increase in people traveling to the Mendocino area for vacations. Traffic data was used to predict the ambient noise level, as the predominant noise source in the study area is SR 128 traffic. Traffic data, including percentage of trucks utilizing SR 128, were examined for sections of SR 128 on either side of the project site (at PMs 29.576 and 41.130). Based on the volume of traffic at these points and the percentage of truck traffic, the ambient noise level in the conifer forest just west of the study area (100 feet from where the anchor wall closest to the conifer habitat is located) was determined to be 69 dB.

Utilizing established sound levels for construction equipment from the USFWS guidance and FHWA's *Roadway Construction Noise Model User's Guide* (FHWA Guide) (Federal Highway Administration 2006: 3), the project-generated sound level associated with construction activities was calculated. The highest noise levels reported in the USFWS guidance were used for all the construction equipment except for an excavator, which was not included in the guidance. The sound level reported in the FHWA Guide was used for the excavator. The noise analysis included the four pieces of equipment (boring rig, dozer, forklift, and dump truck) that generate the highest amount of noise with their corresponding utilization factor as reported in the FHWA Guide. As a worst case scenario, the noise level during construction was assumed to include the ambient traffic noise and noise from these four pieces of equipment. This noise level was determined to be 74 dB in the conifer forest just west of the study area (100 feet from where the anchor wall closest to the conifer habitat is located). Based on this analysis, the increase in noise of 5 dB would not result in disturbance that would cause take of northern spotted owls.

It is possible that construction activities could occur within visual proximity (130 feet) of suitable habitat. Such activities within this line-of-sight distance could result in disrupted behavioral patterns of owls. Besides avoiding work during the breeding period, this impact cannot be avoided.

Nesting Migratory Birds

Construction of the project would result in the permanent removal of 0.149 acre of mixed evergreen forest, 0.005 acre of red alder riparian forest, and 0.423 acre of annual grassland that could be used by nesting birds. Removal of these small areas of potential habitat would not substantially affect migratory birds.

Avoidance, Minimization, and/or Mitigation Measures

Foothill Yellow-Legged Frog and Western Pond Turtle

No compensatory mitigation is proposed for the modification of 0.005 acre of suitable riparian habitat and the permanent and temporary loss of small amounts of upland nesting habitat since this small amount of potential habitat modification would not substantially affect foothill yellow-legged frog or western pond turtle.

To avoid or minimize other potential impacts to foothill yellow-legged frog and western pond turtle, the following measures will be implemented:

Avoidance/Minimization Measure No. 4: Environmental awareness training for construction personnel will be conducted. Caltrans or its contractor will conduct environmental awareness training for all construction personnel prior to the beginning of construction. The training will provide a brief overview of the biological resources that could occur in the project area, the locations in which they could occur and the need to avoid impacts to these resources. Personnel will be made aware of the restrictions and guidelines for avoiding and/or minimizing impacts. The contractor or his crew foreman will be responsible for ensuring that all personnel adhere to the restrictions and guidelines. Training will be repeated for new personnel joining the construction crews.

Avoidance/Minimization Measure No. 5: Preconstruction surveys for foothill yellow-legged frog and western pond turtle will be conducted. Within 48 hours prior to the start of work within or along Rancheria Creek, a qualified biologist will conduct a preconstruction survey for foothill yellow-legged frogs and western pond turtle in the construction area and 500 feet upstream and downstream of the construction area.

Avoidance/Minimization No. 6: No heavy equipment will be permitted within the creek bed. Excavation and rock placement will occur using equipment that is positioned on the bluff above and outside of the creek channel.

Mitigation Measure No. 1: Caltrans will compensate/mitigate for the loss of the 0.005 acre of red alder riparian forest and 108 linear feet of shade for Rancheria Creek to ensure no net loss of riparian habitat functions and value.

Avoidance/Minimization Measure No. 7: Equipment refueling and maintenance will be conducted away from sensitive areas. All construction equipment and vehicle refueling and maintenance will be conducted in the gravel pull-out areas along SR 128. No refueling or maintenance will be allowed adjacent to Rancheria Creek or on the slopes leading to Rancheria Creek.

In the Threatened and Endangered Species section of this document, water quality control measures are identified for minimizing impacts to CCC coho salmon or NC steelhead by protecting water quality and aquatic habitat in Rancheria Creek. These water quality protection measures (Avoidance/Minimization Measure No. 1) will also benefit and minimize potential impacts to yellow-legged frog.

California Red-Legged Frog

No compensatory mitigation measures are proposed. The environmental awareness training (Avoidance/Minimization Measure No. 4) that will be implemented to avoid and minimize potential impacts to sensitive biological resources will include a discussion of California red-legged frog.

Avoidance/Minimization Measure No. 8: Construction will occur during the dry season. The dry season coincides roughly with the summer construction season.

Because there is no suitable breeding habitat for California red-legged frog in the study area and impacts on dispersing frogs from ponds within 1 mile of the study area (if present) would be avoided through conducting construction during the dry season, no impacts are anticipated.

Northern Goshawk

No compensatory mitigation is proposed for the the permanent loss of 0.154 acre of northern goshawk nonbreeding habitat (mixed evergreen forest and red alder riparian forest). This acreage is considered a small amount of habitat and its loss would not substantially affect the species.

Avoidance/Minimization Measure No. 9: To protect nesting migratory birds, the project biologist or construction liaison will conduct a bird survey prior to tree removal. After the area is surveyed, tree removal will occur within two weeks or the survey must be re-done. .

Avoidance/Minimization Measure No. 10: A preconstruction survey for nesting birds will be conducted. A qualified wildlife biologist with knowledge of the species will conduct nesting surveys before the start of construction. The surveys will occur in the project area and within a 600 feet area around the project area. If no active nests are detected during these surveys, no additional measures are required. If an active nest is found in the survey area, the appropriate regulatory agency will be consulted. The environmental awareness training for construction personnel (Avoidance/Minimization Measure No. 4) will include a discussion of northern goshawk.

Bald Eagle

Potential impacts to bald eagle will be avoided/minimized through the same measures that will be implemented to protect northern goshawk (Avoidance/Minimization Measures Nos. 4, 9, and 10).

Northern Spotted Owl

Compensation of line of sight disturbance of northern spotted owls may be required by USFWS and would be determined during the interagency consultation process.

Potential impacts to northern spotted owl will be avoided/minimized through the same measures that will be implemented to protect northern goshawk and bald eagle (Avoidance/Minimization Measures 4, 9, and 10).

Nesting Migratory Birds

No compensatory mitigation is proposed for permanent removal of the small areas of vegetation that provide suitable nesting habitat for migratory birds.

Potential impacts to nesting migratory birds will be avoided/minimized through the same measures that will be implemented to protect northern goshawk, bald eagle, and northern spotted owl (Avoidance/Minimization Measures 4, 9, and 10).

2.2.5 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 USC Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent 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, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) 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 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA

defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. The 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 Game (CDFG) is the agency responsible for implementing the CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to the CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Affected Environment

Central California Coast Coho Salmon and Northern California Steelhead

Central California Coast coho salmon (CCC coho salmon) is a federally listed endangered species and a state listed threatened species. Critical habitat for CCC coho salmon includes the Navarro River and all accessible tributaries including Rancheria Creek. CDFG recorded CCC coho salmon strandings in Rancheria Creek in the 1950s and noted logging-related habitat degradation in the creek and its tributary streams since the 1950s. Recent biological surveys concluded that CCC coho salmon spawning could occur in the study area, but the suitability of the existing habitat appears to be low since the streambed consists mostly of boulders, bedrock, and large deposits of sand and small gravels. Most of the streambank area proposed for RSP placement is steep and unstable and lacks significant shallow water habitat for juvenile salmonids during high flows. Intermittent streams A, B, and C are steep and typically dry during the summer. They do not provide fish habitat and are inaccessible to salmonids because of their steep gradient and intermittent flows.

Northern California steelhead (NC steelhead) is a federally listed threatened species. Rancheria Creek has been designated critical habitat for NC steelhead. Regional factors that have contributed to population declines include dams and other migration barriers, logging, agriculture, fishing, hatcheries, and alien species. Snorkel surveys have indicated that NC

steelhead are present in Rancheria Creek and we can, therefore, assume that they are currently likely to be present in the project study area**.**

Environmental Consequences

Pursuant to Section 7 of the Federal Endangered Species Act, Caltrans entered into informal consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) for federally listed anadromous fish species under their jurisdiction. A request for concurrence to a not likely to adversely affect the northern California steelhead (*Oncorhynchus mykiss*) and California central coast coho salmon (*Oncorhynchus kisutch*) was submitted to the NOAA Fisheries on February 8, 2011. The NOAA Fisheries concurred with Caltrans' determination on July 19, 2011.This concurrence letter can be found in Appendix D.

Potentially adverse impacts to CCC coho salmon and NC steelhead could result from four aspects of the proposed construction: increased sediment input and turbidity; toxic substances; riparian vegetation removal; and rock slope protection.

Increased Sediment Input and Turbidity

Soil disturbance and loss of vegetation on streambanks and upslope areas in the project area can increase soil erosion rates and delivery of fine sediment to the creek, resulting in increased turbidity, suspended sediment, and deposition of fine sediment in the creek. The potential for increases in suspended sediment and turbidity is highest during excavation, dewatering, and RSP placement for the rock buttress because of the proximity of these activities to the live channel. Such increases could have the potential to adversely affect CCC coho salmon and NC steelhead and critical habitat for these species in Rancheria Creek. High turbidity levels and suspended sediment can disrupt normal feeding activities, displace fish from preferred habitats, and cause physiological stress in juvenile salmonids. Excessive loads of fine sediment in streams degrade spawning and rearing habitat by filling the interstitial spaces in spawning gravels and generally reducing the amount of living space and cover for fish and aquatic invertebrates (a major food source for fish and other aquatic organisms).

Widening the existing shoulders by 4 feet will increase the amount of impervious surface area by approximately 5,300 square feet. This increase would potentially increase the rate of local runoff and sediment delivery to the stream. However, potential sediment delivery from this source would be offset by the ultimate improvements that would be in place after construction (i.e., the drainage improvements and the permanent erosion control measures).

While temporary, localized increases in turbidity and sedimentation may occur during the construction phase, the ultimate effect of the proposed project will be to stabilize the failing hill slope and avoid a potentially large input of sediment that could have substantial long-term effects on listed salmonids and aquatic habitat in Rancheria Creek.

Toxic Substances

Construction will require vehicle refueling and the operation of vehicles and equipment adjacent to Rancheria Creek and the drainage channels leading to the creek. These activities could pose a risk of contamination of aquatic habitat and potential injury or death of listed salmonids. Fuel, oil, and hydraulic fluids are a major concern because of their known toxicity to salmonids and other aquatic organisms.

Riparian Vegetation Removal

Installation of the rock buttress and associated access roads would result in permanent impacts on 0.005 acre of riparian habitat adjacent to Rancheria Creek. Riparian zones such as this serve important functions in stream ecosystems by providing shade, sediment storage, nutrient inputs, channel and streambank stability, habitat diversity, and cover and shelter for fish. Riparian vegetation also acts to moderate storm flows and filter sediment and contaminants from storm-generated runoff. Small streams are especially sensitive to loss of riparian habitat and shade, which moderates stream temperatures by insulating the stream from solar radiation and reducing heat exchange with the surrounding air. This function is particularly important for Rancheria Creek, where summer water temperatures may frequently exceed optimum levels for rearing salmon and steelhead. Loss of riparian habitat may constitute an adverse effect on the designated critical habitat of CCC coho salmon and NC steelhead, and a potential adverse effect on essential fish habitat (EFH).

Existing riparian values in the proposed footprint of the rock buttress are low and a relatively open stream canopy exists at the base of the failing hill slope. Under current conditions, permanent losses of riparian vegetation resulting from RSP installation would be limited to several young alders providing approximately 130 linear feet of canopy along the east bank of the creek. Consequently, the loss of these trees will likely have a negligible effect on water temperatures in Rancheria Creek. However, RSP installation would preclude establishment of riparian vegetation along the entire length of the proposed rock buttress (108 linear feet), eliminating the potential for this area to contribute to stream shading, cover, and other habitat functions in the future.

Rock Slope Protection

Approximately 2,785 cubic yards of RSP would be installed on the east bank of Rancheria Creek, replacing approximately 108 linear feet of natural bank substrates with large angular rock (riprap). In addition to losses in riparian habitat potential, RSP can adversely affect other components of salmonid habitat by altering channel morphology, stream hydraulics, and cover characteristics of natural banks. In general, simple engineered slopes protected with riprap reduce the range of habitat conditions found along natural streambanks by eliminating shallow, low-velocity stream margins and complex cover used by juveniles to efficiently feed, escape predators, and avoid strong currents. In addition, riprap or other engineered artificial structures that confine the effective area of the channel can adversely affect salmonid habitat by causing localized channel incision, bank failures (upstream or downstream of the riprap), and sedimentation of downstream habitats.

The rock buttress is designed to protect the base of the failing hill slope while minimizing impacts on the geometry, stream hydraulics, and sediment transport capacity of the adjacent channel. The average cross sectional area of the channel below the OHWM will decrease slightly upon placement of the RSP (approximately 5%), resulting in a slight increase in water surface elevations and negligible overall increase in stream velocities during normal peak flows. Therefore, no substantial changes in water depths, velocities, channel form, or streambed substrates (and associated habitat conditions) are expected to occur.

Permanent loss of 0.005 acre of riparian habitat and associated stream shade (108 linear feet) along Rancheria Creek could constitute a cumulative adverse effect on critical habitat and EFH for CCC coho salmon because of historic losses of riparian vegetation that have contributed to elevated water temperatures in the Navarro River watershed.

In their July 17, 2011 concurrence letter, the NOAA Fisheries determined that the project would adversely affect EFH for CCC coho salmon and NC steelhead. However, the NOAA Fisheries states that the project contains adequate measures to avoid, minimize, mitigate, or otherwise offest any adverse effects to EFH. This concurrence letter can be found in Appendix D.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure No. 1: Caltrans will compensate/mitigate for the loss of the 0.005 acre of red alder riparian habitat and 108 linear feet of shade for Rancheria Creek to ensure no net loss of riparian habitat functions and value.

Caltrans will mitigate/compensate for the loss of 0.005 acre of riparian habitat and loss of associated stream shade along Rancheria Creek through onsite and/or offsite restoration/enhancement designed to fully replace potential losses of stream shade and other riparian values resulting from installation of the rock buttress. With implementation of this proposed riparian restoration and monitoring plan, no long term impacts on listed fish species or aquatic habitat are expected to result.

Avoidance/Minimization Measure No. 1: Water quality control measures will be implemented to avoid or minimize potential short-term and long-term impacts on the water quality and aquatic habitat in Rancheria Creek. The construction contract will include all applicable construction, treatment, maintenance, and pollution prevention BMPs in accordance with the Department's *Storm Water Quality Handbook* (California Department of Transportation 2007) and NPDES General Construction Activity Storm Water Permit. Approved construction and post construction water quality control measures will be fully described in the SWPPP for the proposed project. These measures will include the following:

Silt fencing will be placed along the toe of the rock buttress. Once the keyed toe for the buttress has been excavated, a silt fence will be placed along the toe to protect the creek from sediment transport. The silt fence will remain in place until the project has been completed.

Minimize the loss of native vegetation and clearly mark the boundaries of all protected vegetation on the plans and in the field (i.e., install high-visibility fencing).

Apply approved sediment control and soil stabilization techniques (e.g., silt fences, fiber rolls, hydroseeding) to all disturbed soils and ensure that all erosion control measures are in place.

Locate stockpiles away from the stream channel and implement sediment and wind control measures.

Maintain silt fences or other approved sediment barriers in all drainage channels leading to the creek and remove and haul accumulated sediment to an approved disposal site.

Maintain fuel storage and refueling sites away from the stream channel and ensure that all vehicles and construction equipment are free of leaking fuel, oil, or hydraulic fluids.

Implement waste management and pollution control BMPs, including material storage and handling, spill prevention and control, and hazardous waste management procedures.

Prevent vehicles or equipment from entering or operating in the live stream at all times.

Install permanent rock protection along drainage channel inlets and culvert outfalls to prevent localized scour and erosion during storm runoff.

Replant all disturbed soils with native vegetation.

Restrict excavation, dewatering, and installation of RSP for the rock buttress to areas outside the live stream.

During construction of the rock buttress, Caltrans will require the use of approved dewatering methods (e.g., gravel bags and impermeable liner) to isolate the construction area at the toe of rock buttress and prevent fine sediment from entering the live stream. Caltrans will develop and submit a proposed dewatering plan to NOAA Fisheries and CDFG for review and approval. A biologist will be present to monitor these activities and ensure the effectiveness of the approved methods in preventing adverse effects to listed fish species and their habitat. Water quality monitoring will be conducted to ensure compliance with Regional Water Quality Control Board turbidity objectives (North Coast Regional Water Quality Control Board 2007).

Avoidance/Minimization Measure No. 2: No direct discharges to surface waters will be allowed unless covered by Order R1-2009-0045 (also known as the Low Threat Discharge Permit). The dewatering plan for this project will not allow discharges to surface waters unless the water meets the criteria listed in Order R1-2009-0045. If these criteria are not met, the water to be discharged is not eligible under the Low Threat Discharge Permit. In this event, the project would need to include proper containment and disposal methods to avoid direct non-storm water discharges to surface waters.

Avoidance/Minimization No. 6: No heavy equipment will be permitted within the creek bed. For excavation and rock placement operations, equipment will be positioned on the bluff above and outside of the creek channel.

Avoidance Minimization Measure No. 11: Construction activities below the elevation of the ordinary high water mark (OHWM) of Rancheria Creek will be restricted to the summer low-flow period.

Potential impacts to CCC coho salmon and NC steelhead will be avoided or minimized by restricting all heavy equipment and ground-disturbing activities to areas outside the live stream. Construction activities below the OHWM, including excavation, dewatering, and installation of RSP, would occur during low summer flows, allowing these activities to be conducted outside the live stream, and thereby avoiding any direct in-water impacts on listed species or aquatic habitat (i.e., direct harm to individuals or modification of habitat).

Disturbance to the stream channel would be further minimized by conducting excavation and rock placement using equipment positioned above the channel (i.e., no heavy equipment will be present in or immediately adjacent to the channel). Limiting construction activities to the late summer would also avoid the steelhead and CCC coho salmon spawning period (November through April) when noise and other construction-related disturbances could disrupt spawning activities. During summer, construction activities immediately adjacent to the stream (excavation, dewatering, and RSP placement) could affect the behavior of juvenile steelhead or salmon but the effects would be temporary (3 to 5 days) and limited to potential displacement of juveniles residing in the immediate vicinity of these activities.

2.3 Climate Change

NOTE: The Climate Change section of this document was revised due to regulatory text changes. The project analysis and CEQA determination remain the same.

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 gases (GHGs), 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's in 1988, has led to increased efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur

hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas (GHG) Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. “Adaptation," refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[1].

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas emitting sources. Conversely, the main source of GHG emissions in the United States (U.S.) is electricity generation followed by transportation. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled (VMT) 3) transition to lower GHG fuels and 4) improve vehicle technologies. To be most effective all four should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

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 pro-active approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the U.S. Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles

[1] http://climatechange.transportation.org/ghg_mitigation/

beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order S-3-05: (signed on June 1, 2005, by Governor Arnold Schwarzenegger) the goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the State's Climate Action Team.

Executive Order S-01-07: Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are, no regulations or legislation that 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 Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), 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 facilitate 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 easily 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.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[2]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

Project Analysis

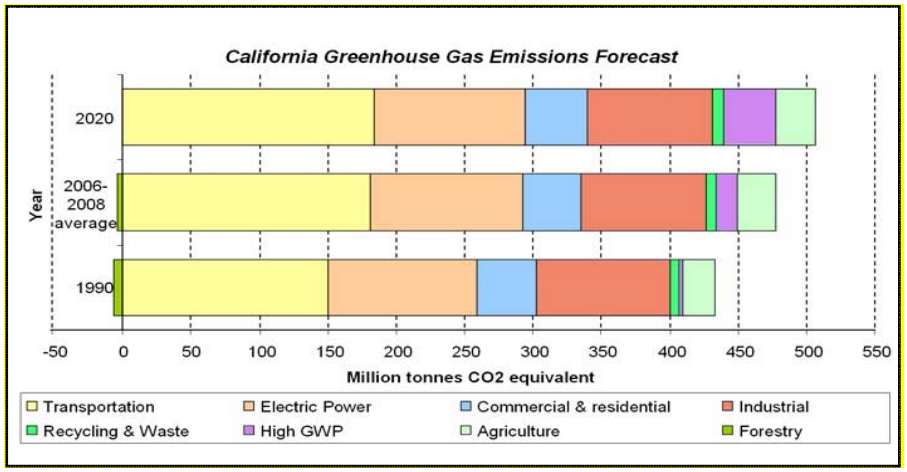
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution

[2] http://www.epa.gov/climatechange/endangerment.html

combined with the contributions of all other sources of GHG.[3] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act (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 in order to make this determination is a difficult if not impossible task.

The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (Forecast last updated: 28 October 2010). The forecast is an estimate of the emissions expected to occur in the year 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.

California GREENHOUSE GAS FORECAST



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

[3] 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 SCAQMD (Chapter 6: : The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006).[4]

The proposed project is a storm damage repair project along SR 128 in Mendocino County. The scope of work consists of stabilizing this slide-prone area through the construction of anchor walls and a rock buttress below the roadway. In addition, the vertical and horizontal alignments of the roadway will be reconstructed and portions of the existing drainage system will be replaced or improved. There will be no change to the existing lane configuration or capacity of the highway. Since the project will not increase capacity or vehicle hours travelled, no increases in operational GHG emissions are anticipated. While emissions of GHGs during construction are unavoidable, there will likely be long term benefits through improved safety, improved traffic operations, elimination of current maintenance operations, and smoother pavement surface following completion of the project.

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 onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

CEQA Conclusion

[4] 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

While construction will result in a slight increase in GHG emissions during construction, it is anticipated that any increase in GHG emissions due to construction will be offset by the improvement in operational GHG emissions. While 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 impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

AB 32 Compliance

The Department continues to be actively involved on the Governor's Climate Action Team as ARB works to implement the 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 the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in the Mobility Pyramid (shown above).

The Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. The Department is working closely with local jurisdictions on planning activities; however, the Department does not have local land use planning authority. The Department is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by U.S. EPA and ARB. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the UC Davis.

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

Climate Change/CO2 Reduction Strategies						
Strategy	**Program**	**Partnership**		**Method/Process**	Estimated CO_2 Savings (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	.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.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, CARB, 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	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.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 .36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Adaptation Strategies

"Adaptation strategies" refer to how the Department and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by 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.

Climate change adaption 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, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This Executive Order set in motion several agencies and actions to address the concern of 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)[5], 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.

Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010[6] to advise how California should plan for future sea level rise. The report is to include:

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

[6] The Sea Level Rise Assessment report is currently due to be completed in 2012 and will include information for Oregon and Washington State as well as California.

- 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.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order 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 regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

Until the final report from the National Academy of Sciences is released, interim guidance has been released by The Coastal Ocean Climate Action Team (CO-CAT) as well as the Department as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. A Notice of Preparation was not filed for this project. The project is programmed for construction in 2013.

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

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

facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to Executive Order S-13-08 and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment which is due to be released in 2012.

List of Preparers

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

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Beth Thompson, Environmental Planner. Contribution: Environmental Study Coordinator

Sandra Rosas, Senior Environmental Planner. Contribution: Environmental Branch Chief

Erick Wulf, Associate Environmental Planner (Archaeology). Contribution: Historic Property Survey Report (HPSR)

Alfred Kannely/Encanta Engleby/Pamlela Lindholm/Michelle Beachley/Amy Kennedy, Associate Environmental Planner (Natural Science). Contribution: Project biologist, Natural Environment Study (NES), Biological Assessment (BA), Mitigation & Monitoring Proposal, Consultation

Mike Zdenek/Kathy Eckard/Terry Applegate, Project Engineer. Contribution: Project Description, Plans, Mapping

Grace Kim Tell/Steven Blair/Andrea Williams, Transportation Engineer. Contribution: Project Manager

Mark Melani, Transportation Engineer. Contribution: Initial Site Assessment (Hazardous Waste)

Jim Hibbert, Landscape Associate. Contribution: Visual Impact Analysis Report

Sharon Tang, Air & Noise Specialist. Contribution: Air Quality and Noise Reports

Alex Arevalo, Transportation Engineer. Contribution: Water Quality Study

Appendix A CEQA Environmental Checklist

01-Men-128	**34.5-35.5**	**01-476600**
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, not NEPA, 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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on the Visual Impact Assessment which was prepared 6/1/07 and revised 10/29/10.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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))?	☐	☐	☐	☒
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?	☐	☐	☐	☒
"No Impact" determinations in this section are based on information obtained during field reviews.				
	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on findings in the Air Quality Report, prepared 3/29/07.

IV. BIOLOGICAL RESOURCES: Would the project:

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

The determinations in this section are based on the Natural Environmental Study (NE) which was completed in 8/2010.

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on the Historic Resource Compliance Report which was prepared on 1/23/09 and revised on 10/29/09.

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on information obtained from the Project Engineer.

VII. GREENHOUSE GAS EMISSIONS: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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. These measures are outlined in the body of the environmental document.				
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?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
"No Impact" determinations in this section are based on information contained in the Initial Site Assessment of 3/2/07 and the Preliminary Site Investigation of 8/29/07.				
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on information obtained from the Project Engineer.

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?	☐	☐	☐	☒
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	☐	☐	☐	☒

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

The determinations in this section are based on the Water Quality Study which was last revised on 1/21/11.

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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on information obtained from the Project Engineer.

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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on information obtained from the Project Engineer.

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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
) 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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on the Noise Report of 3/29/07.

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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on the scope and location of the 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?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

"No Impact" determinations in this section are based on the scope and location of the project.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on the scope and location of the 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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on information obtained from the Project Engineer.

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

"No Impact" determinations in this section are based on information obtained from the Project Engineer.

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?	☐	☐	☐	☒

Appendix B Title VI Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. Box 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711

Flex your power!
Be energy efficient!

July 20, 2010

TITLE VI
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.

CINDY McKIM
Director

"Caltrans improves mobility across California"

Appendix C Avoidance, Minimization and/or Mitigation Measures Summary

The following mitigation measures will compensate for the project's impacts to water resources and biological resources:

Mitigation Measure No. 1: Caltrans will compensate/mitigate for the loss of the 0.005 acre of red alder riparian forest and 108 linear feet of shade for Rancheria Creek to ensure no net loss of riparian habitat functions and value.

The compensation ratio will be determined through coordination with the appropriate state and federal agencies. If the mitigation ratio is greater than 1:1, a suitable offsite mitigation location would need to be identified. Rancheria Creek or the Navarro River watershed would be potential suitable mitigation sites.

Caltrans will prepare a restoration and monitoring plan that describes how riparian habitat will be enhanced or re-created and monitored over a minimum period of time, as determined by the appropriate state and federal agencies. The restoration and monitoring plan will be developed prior to the removal of existing riparian vegetation. It will specify the planting stock appropriate for each riparian land cover type and each mitigation site and will ensure the use of genetic stock appropriate for the project area. The maintenance of plantings will include weed removal, herbivory protection, and irrigation. The plan will employ the most successful techniques available at the time of planting. Appropriate planting ratios and densities will be established to provide a high probability of successful restoration of riparian vegetation and canopy cover along the stream. The plan will include performance measures, success criteria, and contingency plans to address any failures.

Mitigation Measure No. 2: Caltrans will mitigate/compensate for impacts to other waters by implementing the conditions and requirements of the state and federal permits that are obtained for the project. The compensation ratios to be implemented will be determined during the permitting process.

The following avoidance/minimization measures will avoid or minimize potential impacts to water resources and biological resources:

Avoidance/Minimization Measure No. 1: Caltrans will implement the following water quality protection measures.

Proper notification procedures to obtain coverage for storm water and non-storm water discharges associated with construction activities under the terms of the Caltrans Statewide NPDES Permit and/or the Construction General Permit current at the time of construction will be required. To comply with the conditions of the Department's Statewide NPDES Permit, and to address the potential temporary water quality impacts resulting from construction activities, Standard Special Provisions (SSP) 07-345 and 07-346 will be included as part of the Plans, Specifications, and Estimates for this project. SSP 07-345 will address water pollution control work and implementation of a SWPPP during construction. SSP 07-346 will address source control requirements during construction.

To address increases in impervious surface and the resulting increases in storm water runoff, the Section 401 Water Quality Certification that is issued by the NCRWQCB will require that a storm water treatment plan be prepared and submitted for approval.

The proposed construction will include all necessary erosion control and water quality control measures. To minimize the potential for sedimentation, the project will include the construction BMPs that are identified in the Department's Storm Water Quality Handbooks: Construction Site BMPs Manual. The Department's approved construction BMPs that apply to this project include measures for temporary sediment control (such as silt fences, fiber rolls, straw bale barriers, and temporary detention basins) and measures for temporary soil stabilization (such as hydraulic mulching, hydroseeding, and straw mulch).

Silt fencing will be placed along the toe of the rock buttress. Once the keyed toe for the buttress has been excavated, a silt fence will be placed along the toe to protect the creek from sediment transport. The silt fence will remain in place until the project has been completed.

The loss of native vegetation will be minimized to the extent possible and the boundaries of all protected vegetation will be clearly marked on the plans and in the field (i.e., install high-visibility fencing).

Approved sediment control and soil stabilization techniques (e.g., silt fences, fiber rolls, hydroseeding) will be applied to all disturbed soils and erosion control measures will be implemented.

Stockpiles will be located away from the stream channel; sediment and wind control measures will be implemented.

Silt fences or other approved sediment barriers will be maintained in drainage channels leading to the creek; accumulated sediment will be removed and hauled to an approved disposal site.

Fuel storage and refueling sites will be located away from the stream channel and all vehicles and construction equipment will be maintained to ensure against leaking fuel, oil, or hydraulic fluids.

Waste management and pollution control BMPs, including material storage and handling, spill prevention and control, and hazardous waste management procedures will be implemented.

At no time will vehicles or equipment be allowed to enter or operate in the live stream.

Permanent rock protection will be installed along drainage channel inlets and culvert outfalls to prevent localized scour and erosion during storm runoff.

All disturbed soils will be replanted with native vegetation.

Excavation, dewatering, and installation of RSP for the rock buttress will be restricted to areas outside the live stream.

During construction of the rock buttress, Caltrans will require the use of approved dewatering methods (e.g., gravel bags and impermeable liner) to isolate the construction area at the toe of rock buttress and prevent fine sediment from entering the live stream. Caltrans will develop and submit a proposed dewatering plan to NOAA Fisheries and CDFG for review and approval. A biologist will be present to monitor these activities and ensure the effectiveness of the approved methods in preventing adverse effects to listed fish species and their habitat. Water quality monitoring will be conducted to ensure compliance with Regional Water Quality Control Board turbidity objectives (North Coast Regional Water Quality Control Board 2007).

A revegetation plan will be implemented to minimize impacts associated with riparian vegetation removal.

Avoidance/Minimization Measure No. 2: No direct discharges to surface waters will be allowed unless covered by Order R1-2009-0045 (also known as the Low Threat Discharge Permit) . The dewatering plan for this project will not allow discharges to surface waters unless the water meets the criteria listed in Order R1-2009-0045. If these criteria are not met, the water to be discharged is not eligible under the Low Threat Discharge Permit. In this event, the project would need to include proper containment and disposal methods to avoid direct non-storm water discharges to surface waters.

Avoidance/Minimization Measure No. 3: Environmentally Sensitive Area (ESA) fencing will be constructed. Caltrans or its contractor will install ESA fencing (including sediment fencing, where appropriate) as a barrier to protect sensitive biological resources located adjacent to the construction area. This ESA will be identified in the contract plans and specifications. Prior to construction, a qualified biologist will stake or flag the area to be protected. The fencing will be in place prior to the beginning of construction and will be maintained for the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease to allow for its replacement.

Avoidance/Minimization Measure No. 4: Environmental awareness training for construction personnel will be conducted. Caltrans or its contractor will conduct environmental awareness training for all construction personnel prior to the beginning of construction. The training will provide a brief overview of the biological resources that could occur in the project area, the locations in which they could occur and the need to avoid impacts to these resources. Personnel will be made aware of the restrictions and guidelines for avoiding and/or minimizing impacts. The contractor or his crew foreman will be responsible for ensuring that all personnel adhere to the restrictions and guidelines. Training will be repeated for new personnel joining the construction crews.

Avoidance/Minimization Measure No. 5: Preconstruction surveys for foothill yellow-legged frog and western pond turtle will be conducted. Within 48 hours of the start of work within or along Rancheria Creek, a qualified biologist will conduct a

preconstruction survey for foothill yellow-legged frogs and western pond turtle in the construction area and 500 feet upstream and downstream of the construction area.

Avoidance/Minimization No. 6: No heavy equipment will be permitted within the creek bed. For excavation and rock placement operations, equipment will be positioned on the bluff above and outside of the creek channel.

Avoidance/Minimization Measure No. 7: Equipment refueling and maintenance will be conducted away from sensitive areas. All construction equipment and vehicle refueling and maintenance will be conducted in the gravel pull-out areas along SR 128. No refueling or maintenance will be allowed adjacent to Rancheria Creek or on the slopes leading to Rancheria Creek.

Avoidance/Minimization Measure No. 8: Construction will occur during the dry season. The dry season coincides roughly with the summer construction season.

Avoidance/Minimization Measure No. 9: To protect nesting migratory birds, the project biologist or construction liaison will conduct a bird survey prior to tree removal. After the area is surveyed, tree removal will occur within two weeks or the survey must be re-done.

Avoidance/Minimization Measure No. 10: A preconstruction survey for nesting birds will be conducted. A qualified wildlife biologist with knowledge of the species will conduct nesting surveys before the start of construction. The surveys will occur in the project area and within a 600-foot area around the project area. If no active nests are detected during these surveys, no additional measures are required. If an active nest is found in the survey area, the appropriate regulatory agency will be consulted.

Avoidance Minimization Measure No. 11: Construction activities below the elevation of the ordinary high water mark (OHWM) of Rancheria Creek will be restricted to the summer low-flow period.

Appendix D Concurrence Letters

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

July 19, 2011

In response, refer to:
2011/03132

Sandra Rosas, Office Chief
Department of Transportation - Caltrans District 3
Office of Environmental Management
703 B Street
Post Office Box 911
Marysville, California 95901-0911

Dear Ms. Rosas:

Thank you for your letter of February 8, 2011, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration assigned, and the California Department of Transportation (Caltrans) has assumed all responsibilities for consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the Federal action agency for ESA consultations with NMFS for Federally funded projects. This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA), and the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed Mendocino Route 128/Smoot Sink Storm Damage Project in Mendocino County, California.

The Mendocino Route 128/Smoot Sink Storm Damage Project site is located at milepost 35.5 on State Route (SR) 128 along Rancheria Creek in Mendocino County, California. Proposed construction involves permanent road repairs and slope stabilization along approximately 2,500 feet (ft) of roadway on SR 128. Rancheria Creek and three ephemeral drainages are included in the action area. Rancheria Creek originates in the foothills south of Yorkville, California and flows approximately 35 miles northwest along SR 128 to its confluence with the Navarro River. The reach of Rancheria Creek included in the project site is approximately 700 ft long; the channel is predominated by pocket water and riffle habitat and is less than 50 ft wide during the summer dry season.

Proposed slope stabilization and roadway construction at Smoot Sink will require two seasons. Slope stabilization activities will be completed in one construction season between June 15th and October 30th; and construction will occur in locations where no surface water is present (*i.e.*, only groundwater will be encountered during construction). A series of five anchor walls will be constructed downslope of the failing portion of SR 128 to stabilize the roadway and slope. Additionally, a rock slope protection buttress will be constructed at the base of the slope along Rancheria Creek to achieve an acceptable factor of safety. The buttress will be 170 ft long and 15 ft wide, and will be constructed with a two to five-foot off-set from the ordinary high water alignment. The rock buttress will be constructed at or below the existing grade with a 1.75:1.0 slope; buttress construction will involve excavation of approximately 2600 cubic yards of material and impact 0.23 acres of riparian habitat. Construction of the rock buttress will occur in a three to five day time period between mid-September and mid-October to minimize contact with groundwater during excavation. Groundwater that is encountered during excavation will be removed and disposed of offsite and water elevations in Rancheria Creek are not anticipated to drop as a result of construction activities.

Roadway realignment and roadway drainage modification is proposed to occur after September 15th in the second season of construction, and require approximately three weeks for completion. Proposed roadway realignment and drainage modifications are not anticipated to increase the discharge of stormwater or roadway runoff to Rancheria Creek.

Standard best management practices for construction site and sediment and stormwater runoff control will be utilized on this project. Biofiltration swales and biostrips will be used when possible to control runoff. Deviations to the toe of the rock buttress alignment will be made to protect existing riparian vegetation, and environmental sensitive areas will be demarcated with fencing to ensure riparian vegetation is preserved during construction. Vegetation will be trimmed rather than removed when possible, and temporarily disturbed riparian areas will be replanted with native species prior to October 30th to minimize erosion and creek sedimentation. Revegetation will be monitored annually for a minimum of 3 years.

Endangered Species Act

In its February 8, 2011, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect Northern California (NC) steelhead (*Oncorhynchus mykiss*) and California Central Coast (CCC) coho salmon (*O. kisutch*). Available information indicates the following listed species (Distinct Population Segments [DPS] or Evolutionarily Significant Units [ESU]) or designated critical habitat may occur in the project area.

Northern California steelhead (*O. mykiss*) **DPS**
Threatened (71 FR 834; January 5, 2006)
Critical Habitat (70 FR 52488; September 2, 2005)

Central California Coast coho salmon (*O. kisutch)* **ESU**
Endangered (70 FR 37160; June 28, 2005)
Critical Habitat (64 FR 24049; May 5, 1999)

The life history of steelhead is summarized in Busby *et al.* (1996) and the life history of CCC coho is summarized by Shapavalov and Taft (1954) and Hassler (1987). Recent surveys indicate NC steelhead and CCC coho are present in Rancheria Creek. One observation of juvenile coho was made in 1996 in Minnie Creek, a tributary to Rancheria Creek that connects to the creek several miles downstream of the project site (KrisWeb). Historical records, however, indicate coho salmon were present near the project site; these records include 28 juveniles captured by fyke net approximately 1 mile upstream of the project area (0.5-mile downstream of Fish Rock Road) in April 1972 (Brown 1972). Recent snorkel surveys of Rancheria Creek (2000-2001) indicate that juvenile steelhead were present within a few miles of the project site during summer months (KrisWeb, Johnson *et al.* 2002). Therefore, listed salmonids are likely to be present in the waters of Rancheria Creek adjacent to the project site during construction activities. It is unlikely, however, that listed salmonids will be significantly affected by construction activities. No in-water construction activities are proposed, and excavation and groundwater pumping will be sufficiently minimized to avoid affecting creek water levels or quality.

Rancheria Creek is designated critical habitat for both NC steelhead and CCC coho salmon. Aquatic habitat adjacent to the project site can provide year-round rearing habitat, and migration habitat for juvenile and adult salmonids. Predominant substrate in this reach of Rancheria Creek is large boulders and bedrock; suitable spawning substrate and habitat is only present in small pockets. Proposed slope stabilization activities include removal of riparian vegetation. This reach of Rancheria Creek, however, offers limited riparian canopy on the east (roadway) bank due to regular slope failures and the majority of the existing riparian vegetation will fall outside of the buttress footprint.

Based on the best available information, NMFS concurs with Caltran's determination that threatened NC steelhead and endangered CCC coho salmon are not likely to be adversely affected by the Mendocino Route 128/Smoot Sink Storm Damage Project. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed Mendocino Route 128/Smoot Sink Storm Damage Project Mendocino County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

The project area is located within an area identified as EFH for CCC coho salmon, managed with the Pacific Coast Salmon Fishery Management Plan under the MSA. As discussed in the above ESA section, no in-water construction will take place. However, adverse effects to EFH could occur from disruption and removal of riparian vegetation and temporary increases in turbidity following construction. While these impacts are considered minor and temporary, NMFS has made the determination that the proposed action would adversely affect EFH for this species. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset any adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

This concludes EFH consultation for Caltrans' proposed Mendocino Route 128/Smoot Sink Storm Damage Project in Mendocino County, California. Pursuant to 50 CFR 600.920(l) of the EFH regulations, Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations.

Fish and Wildlife Coordination Act

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development [16 U.S.C. 661]. The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage [16 U.S.C 662(a)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA allows the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: Al Kannely, Caltrans District 3
Grace Kim Tell, Caltrans District 1
Jeremiah Puget, RWQCB
Rick Macedo, CDFG
Scott Bauer, CDFG
Copy to File ARN: 151422-SWR-2011-SR00370

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arcata Fish and Wildlife Office
1655 Heindon Road
Arcata, California 95521
Phone: (707) 822-7201 FAX: (707) 822-8411

In Reply Refer To:
AFWO-11B0055-11I0049

MAR 2 2 2011

Sandra E. Rosas, Chief
Environmental Management, M2 Branch, District 3
California Department of Transportation
703 B Street
P.O. Box 911
Marysville, California 95901–0911

Subject: Informal Consultation for the Smoot Sink Storm Damage Project, Mendocino County, California

Dear Ms. Rosas:

We have reviewed your request, dated January 28, 2011 and received February 07, 2011, for informal consultation with the Fish and Wildlife Service (Service) for the Smoot Sink Storm Damage Project at Post Mile (PM) 34.9 to 35.3 on State Route 128, Mendocino County, California. This response is prepared in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 153 1 et seq.) (Act), and its implementing regulations (50 CFR § 402). The California Department of Transportation (Caltrans) is seeking concurrence that the proposed project may affect, but is not likely to adversely affect the federally listed as threatened northern spotted owl (*Strix occidentalis caurina*) and will have no effect on the federally listed as threatened marbled murrelet (*Brachyramphus marmoratus*). This letter transmits the Service's concurrence on the may affect, not likely to adversely affect determination made by Caltrans for the northern spotted owl and the no effect determination for the marbled murrelet.

Caltrans proposes to stabilize a slide on State Route 128, by constructing a rock buttress and anchor walls during the first construction season of June 15 to October 30, 2012. This will be followed by reconstruction of the vertical and horizontal alignments of the roadway, improvements to the drainage systems for three intermittent streams, road delineation, paving, and shoulder backing during the second construction season of September 15 to October 14, 2013. Restoration of temporarily disturbed areas and installation of permanent erosion control measures would also occur during the second construction season. Construction of the anchor

walls and rock buttress will require approximately 84 days. Road reconstruction, drainage system improvements, and restoration will require approximately 21 days.

The nearest spotted owl activity center (CDFG MEN 0290) is approximately 0.30 mile to the south of the southern end of the project area; however, the activity center is approximately 0.50 mile from the portion of the project area that will generate noise above ambient levels. The MEN 0216 and MEN 0300 spotted owl activity centers are approximately 1.1 and 1.4 miles from the project area, respectively. The nearest spotted owl critical habitat unit to the project area is 9.8 miles to the north.

The nearest marbled murrelet detection location is over 16 miles southwest of the project area and the closest known nest is located over 120 miles to the northwest. A small (240 acre) marbled murrelet critical habitat polygon is located approximately 2 miles to the southwest of the project area.

Using 2006 Service guidance on estimating the effects of auditory disturbance to the northern spotted owl and marbled murrelet you estimated the harassment distance due to elevated project generated sound levels (81–90 decibels) at 165 feet from the project area. Suitable nesting habitat for either species does not occur within 165 feet of the project area.

Concurrence

The Service concurs with your determination that the proposed activities of anchor wall and rock buttress construction, roadway alignment, paving, shoulder backing, delineation, and drainage system improvements and restoration, may affect, but are not likely to adversely affect the northern spotted owl and will have no effect on the marbled murrelet, based on the following factors:

1. No construction activities will occur within designated northern spotted owl or marbled murrelet critical habitat.

2. No suitable northern spotted owl or marbled murrelet nesting habitat is present within the action area and no suitable nest trees will be removed. Replanting of affected areas with native plant species will minimize the impacts to spotted owl foraging and dispersal habitat.

3. Noise levels during construction are unlikely to affect the MEN 0290 northern spotted owl pair due to the low level of anticipated noise and the distance between the construction activities and the known spotted owl activity center. Although noise above ambient levels is expected to penetrate the forest to the west of the project area, the sound will likely be attenuated to ambient levels or lower by the time it reaches suitable northern spotted owl nesting habitat that occurs farther to the west; upslope from the project area.

Conclusion

This concludes informal consultation on the proposed Smoot Sink Storm Damage Project on State Route 128, Mendocino County, California. However, obligations under section 7 of the Act, as amended, should be reconsidered if: (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) this action is subsequently modified in a manner that was not considered; (3) a new species is listed or critical habitat designated that may be affected by the action; or (4) you are unable to implement all of the measures described above.

Thank you for your coordination on this project. Please contact staff biologist Gregory Schmidt at (707) 825-5103 should you have further questions regarding this consultation.

Sincerely,

Randy A. Brown

Acting

Nancy J. Finley
Field Supervisor

cc:
CDFG, Eureka, CA (Attn: M. van Hattem)