# Peregrine Slides Project

MENDOCINO COUNTY, CALIFORNIA
DISTRICT 1 – MEN – 101 (PM 3.75/5.30)
01-0B500/EFIS 0112000133

# Initial Study with Proposed Mitigated Negative Declaration

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

**February 2015**

## General Information about This Document

**What's in this document:**
The California Department of Transportation (Caltrans) has prepared this Initial Study which examines the potential environmental impacts of the proposed project located in Mendocino County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, and any proposed avoidance, minimization, and/or mitigation measures.

**What you should do**:

- Please read this document.
- Additional copies of this document are available for review at the following locations:
  - ❖ http://www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm
  - ❖ Caltrans District 1 Office at 1656 Union Street in Eureka
  - ❖ Main Branch Library at 105 North Main Street in Ukiah
  - ❖ Cloverdale Regional Library at 401 North Cloverdale Boulevard in Cloverdale

  Individual technical studies can be requested by contacting Liza Walker at (530) 741-4139 or at liza.walker@dot.ca.gov.
- Attend the public meeting. The public meeting is going to be held at the Hopland Volunteer Fire Department, 21 Feliz Creek Road, Hopland, California 95449 on February 26, 2015 from 4:00 p.m. to 6:00 p.m.
- If you have any comments about the proposed project, please attend the public meeting and/or send your written comments to Caltrans by the deadline.
- Submit comments via postal mail to:

  Caltrans
  North Region Environmental, M-2 Branch
  Attn: Liza Walker, Environmental Coordinator
  703 B Street
  Marysville, CA 95901
- Submit comments via email to: liza.walker@dot.ca.gov.
- Be sure to submit comments by the deadline: March 23, 2015

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, North Region Environmental, M-2 Branch, Attn: Liza Walker, Environmental Coordinator, 703 B Street, Marysville, California 95901;
(530) 741-4139 Voice, or use the California Relay Service TTY number at 711.

SCH:
01-MEN-101-PM 3.75/5.30
01-0B500/0112000133

Slide repair project on State Route 101 in Mendocino County

**Peregrine Slides Project**
**01-MEN-101-PM 3.75/5.30**
**01-0B500/0112000133**

## INITIAL STUDY with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

2/11/2015
Date of Approval

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

SCH:
01-MEN-101-PM 3.75/5.30
EA 0B500

# PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

***Project Description***

The California Department of Transportation (Caltrans) is proposing a project to slow down and/or stop the slope movement of two slide areas created by significant rainfall events in March 2011 on State Route 101 in Mendocino County at post mile (PM) 3.75 and at PM 5.30. Soldier pile ground anchor walls are being proposed to stabilize the slides at both locations. The proposed work will also include repairing drainage within the project area.

***Determination***

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

DRAFT

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

- The proposed project would have minimal or no effect on agricultural resources, air quality, cultural resources, geology and soils, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems.

- In addition, the proposed project would have less than significant effects to biological resources, hazards and hazardous waste, and hydrology and water quality because avoidance and minimization measures have been included.

- The proposed project would have less than significant effects to visual and aesthetics because avoidance, minimization, and mitigation measures have been included.

_____ _____

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

# Section 1 – Proposed Project

**Project Title**
Peregrine Slides Project

**Lead Agency & Project Sponsor's Name, Address and Contact Person**
California Department of Transportation
Attn: Liza Walker
703 B Street
Marysville, California 95901

**Project Location**
This project is located on State Route (SR) 101 between post miles (PM) 3.75 and PM 5.30 in Mendocino County.

**Purpose and Need**
The project is needed in order to slow down and/or stop the slope movement of two slide areas at PM 3.75 and at PM 5.30 on SR 101 in Mendocino County. The purpose of the project is to stabilize two active landslide areas on SR 101 in Mendocino County and to restore the roadway to pre-damage conditions.

**Project Description**
This storm damage project consists of two locations on the east side of the roadway on SR 101 in Mendocino County at PM 3.75 and PM 5.30. Due to the significant rainfall events of March 2011, existing large scale landslides at both locations immediately adjacent to and above the four-lane section of SR 101 began to experience substantial movement. The slope movement at PM 5.30 caused the pavement across the four lanes to uplift and crack and caused the failure of a cross drainage system. Temporary repairs were done but additional movement has closed the northbound slow lane. At PM 3.75 the right shoulder uplifted and landslide material spilled onto the highway. These landslides continue to cause embankment movement and require frequent pavement repairs to be performed by Caltrans Field Maintenance.

The Office of Geotechnical Design was consulted and geotechnical field investigations (borings, instrumentation, and mapping) were conducted at both locations to help develop repair strategies. Based on the geotechnical studies, recommendations were made for the two locations.

**<u>Formoli Slide (PM 3.75)</u>**
The proposed alternative at Formoli Slide is a 20 foot high, 353 foot long soldier pile ground anchor wall (SPGA) with one or two levels of ground anchors and with tapering at both ends of the wall. The wall will be located approximately 35 feet from the edge of shoulder. Vegetation removal will be required to facilitate access by construction equipment and personnel. Additional work includes:

- Construction of a ten foot deep underdrain at the front toe of the wall.
- Placement of an eight-inch diameter perforated plastic pipe six inches above the base of the wall to collect and convey water through outlet pipes to the drainage inlet of the drainage system at PM 3.72.
- Grading of the slopes on the hillsides behind the wall to minimize surface ponding.
- Excavation of the front of the wall to create a bench and placement of aggregate base. The bench area will be gently contoured to facilitate drainage and to provide Caltrans

Maintenance personnel with an area for removing material that may overtop the wall in the event of possible future slope failures.
- Redirection of the hillside surface flow from above the wall along the sides of the wall to a swale and conveyed to a culvert located downstream (PM 3.72) where the underdrain also discharges. The existing pipe culvert at PM 3.72 will be replaced and installed at a lower elevation to match the elevation of the proposed underdrain.

**Peregrine Slide (PM 5.30)**

The proposed alternative at Peregrine Slide is a 50 foot high, 419 foot long SPGA wall with five levels of ground anchors (tie backs) with tapering at both ends of the wall. The wall will be located approximately 100 feet right from the edge of shoulder. Vegetation removal will be required to facilitate access by construction equipment and personnel. Additional work includes:

- Excavation of the front of the wall to create a bench similar to Formoli. The back of the wall will be filled to the top with material excavated from the front of the bench.
- Construction of an underdrain at the front toe of the wall and also one 50 feet behind the wall.
- Installation of horizontal drains through the wall face above the adjacent finished grade and placed at an incline upward from the wall face at a grade of 10%. The horizontal drains will be connected to a collector system draining out to the drainage system at PM 5.17. The collector system will be buried within a toe berm constructed at the front toe of the wall. Discharge from the underdrain behind the wall will be conveyed to the drainage system at PM 5.11 along a hillside channel.
- Grading of the slopes on the hillside behind the wall to minimize surface ponding and infiltration.
- Construction of a new structural section where the roadway pavement has been damaged by the slide movement. The uplifted sections will be removed and the roadway surface returned to near its original elevation. At Peregrine both ends of the newly placed structural sections will be overlaid with asphalt to conform to the existing pavements.
- The surface flow from the slide now flows into the cross culvert at PM 5.22. Because the proposed wall will intercept this flow, surface runoff from above the wall will be directed to the current culvert location at PM 5.11. This culvert will be sized to convey the additional flow. The abandoned culvert at PM 5.17 will be reconstructed at a lower elevation to take the flow from the underdrain at the bottom of the wall and horizontal drains.
- Repairs of the cross culvert beneath the Korean War Veterans Viaduct at PM 4.95 are also being proposed (see project location map on page 4). The cross drainage culvert that was also damaged will be replaced with an open channel. The pipe will be replaced with a rock-lined open channel approximately 200 feet in length. Beginning to the east of the highway, the channel will cross under the viaduct and outlet at the west side of the bridge. A rock energy dissipater will be placed at the outlet.

**Staging**

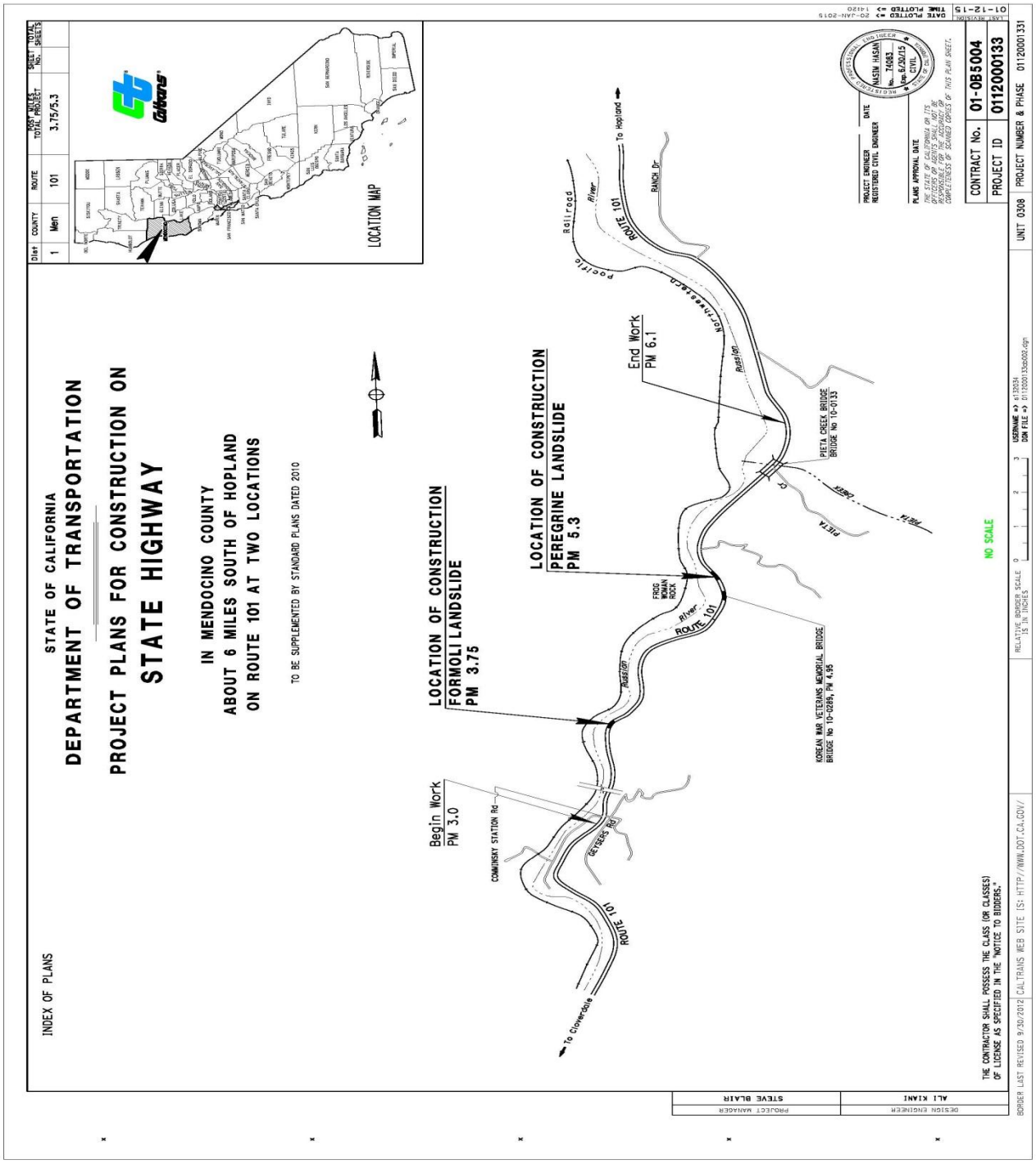
It is anticipated that the contractor will use the existing closed northbound lane for staging.

**Schedule**

Construction is currently scheduled to take two seasons beginning in 2016 for project completion.

**Permits and Approvals Needed**

This project will require a 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife, a 404 permit from the U.S. Army Corps of Engineers, and a 401 Water Quality Certification from the North Coast Regional Water Quality Control Board.




Project Location Map

## Section 2 – Environmental Factors Potentially Affected

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

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

# CEQA Checklist

| 01-MEN-101 | 3.75/5.30 | 01-0B500 |
|---|---|---|
| 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 a clarifying discussion is needed, the discussion either follows the applicable section in the checklist or is placed within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

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

***Explanation: "No Impact" determinations and "Less Than Significant Impact with Mitigation" determinations in this section are based on information provided in the Visual Impact Assessment dated December 2014. Please see Section 3 for further discussion.***

| | | | | |
|---|---|---|---|---|
| **II. AGRICULTURE AND FOREST RESOURCES:** Would the project: | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | ☐ | ☐ | ☐ | ☒ |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

| | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

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

**III. AIR QUALITY:** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

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

***Explanation: "No Impact" determinations in this section are based on information provided in the Air Quality Evaluation dated August 2014.***

***The proposed project may result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Fugitive dust, sometimes referred to as windblown dust or PM10 (Particulate Matter 10), would be the primary short-term construction impact, which may be generated during excavation, grading and hauling activities. However, both fugitive dust and construction equipment exhaust emissions would be temporary in nature.***

***Implementation of the Caltrans Standard Specifications, an integral part of all construction contracts, is expected to effectively reduce emission impacts during construction. The provisions of Section 7-1.01F, Air Pollution Control, and Section 10, Dust Control, require the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.***

**IV. BIOLOGICAL RESOURCES:** Would the project:

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

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

***Explanation: "No Impact" determinations and "Less Than Significant Impact with mitigation" determinations in this section are based on information provided in the Natural Environment Study dated January 2015. Please see Section 3 for further discussion.***

**V. CULTURAL RESOURCES:** Would the project:

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

***Explanation: "No Impact" determinations in this section are based on information provided in the Historic Property Survey Report dated January 2015.***

**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? | ☐ | ☐ | ☐ | ☒ |

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

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

**VII. GREENHOUSE GAS EMISSIONS:** Would the project:

| | |
|---|---|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?<br><br>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 Section 3 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? | ☐ | ☐ | ☐ | ☒ |

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

***Explanation: "No Impact" determinations and "Less Than Significant Impact" determinations in this section are based on information provided in the Initial Site Assessment dated August 2014 and the Preliminary Site Investigation dated January 2015. Please see Section 3 for further discussion.***

**IX. HYDROLOGY AND WATER QUALITY:** Would the project:

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

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

***Explanation: "No Impact" and "Less Than Significant Impact" determinations in this section are based on information provided in the Water Quality Assessment Exemption dated September 2014. Please see Section 3 for further discussion.***

**X. LAND USE AND PLANNING:** Would the project:

| | | | | |
|---|---|---|---|---|
| a) Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |
| b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ☒ |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☐ | ☐ | ☐ | ☒ |

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

**XI. MINERAL RESOURCES:** Would the project:

| | | | | |
|---|---|---|---|---|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☐ | ☒ |

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

**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? | ☐ | ☐ | ☐ | ☒ |

| | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☒ |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☒ |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |

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

**XIII. POPULATION AND HOUSING:** Would the project:

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

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

**XIV. PUBLIC SERVICES:**

| | | | | |
|---|---|---|---|---|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | ☐ | ☐ | ☐ | ☒ |
| Fire protection? | ☐ | ☐ | ☐ | ☒ |
| Police protection? | ☐ | ☐ | ☐ | ☒ |
| Schools? | ☐ | ☐ | ☐ | ☒ |
| Parks? | ☐ | ☐ | ☐ | ☒ |
| Other public facilities? | ☐ | ☐ | ☐ | ☒ |

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

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

**XV. RECREATION:**

| | | | | |
|---|---|---|---|---|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☐ | ☒ |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☒ |

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

**XVI. TRANSPORTATION/TRAFFIC:** Would the project:

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

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

**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? | ☐ | ☐ | ☐ | ☒ |

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

**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

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

## Section 3 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

### VISUAL/AESTHETICS

#### Regulatory Setting

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

#### Affected Environment

A Visual Impact Assessment was prepared in December 2014.

The proposed project is located on State Route (SR) 101 in Mendocino County. The project is located between Cloverdale in Sonoma County and Hopland in Mendocino County. The natural landscape is characterized by the narrow valley and hills. The land cover consists of oak woodland and the Russian River.

There are a few ranches along the corridor which are located on the hills above the highway and generally are not visible to the traveling public. The hillside slopes to the east have a number of highway maintenance related repairs due to the unstable blue serpentinite soils. The scale and frequency of man-made features throughout the project area is such that it does not dominate the views when seen in the context of the rural landscape. Agricultural land use is located in the valleys to the north and south of the project corridor.

The proposed retaining wall at post mile 5.30 will be constructed directly across the highway from a scenic rock outcropping that has the designation of California Historical Landmark #549. Squaw Rock was designated a California Historic Landmark in 1956. This California Historic Landmark has an ethnographic history by the Central Pomo Native Americans; it is the location of an ethnographical myth associated with Frog Woman who is an important figure in Pomo Indian Mythology. In 2011, the State Office of Historical Preservation updated the California Historic Landmark by changing the formal designation of Squaw Rock to Frog Woman Rock as a way to honor and respect the cultural heritage of the Pomo peoples of this region. Frog Woman Rock still holds cultural significance today by the Hopland Band of Pomo Indians.

As an official California Historic Landmark, this scenic resource has substantially more significance than if it were simply a scenic rock outcropping. Due to its designation as a California Historic Landmark it is understood that it is a valuable cultural and scenic resource, not only to the Central Pomo Native American tribe but to all the people of California. Frog Woman Rock can be viewed from the southbound side of SR 101 from the flat area that is used as a vehicle pullout.

To provide a framework for understanding the visual effects of a proposed highway project, the highway corridor can be divided into distinct landscapes. The highway corridor has similar visual character and visual qualities at both locations. However, due to the scenic resource of Frog Woman Rock, the project corridor was divided into two visual assessment units. The visual assessment unit is defined by its particular viewshed.

The following visual assessment units and their associated key views have been identified:

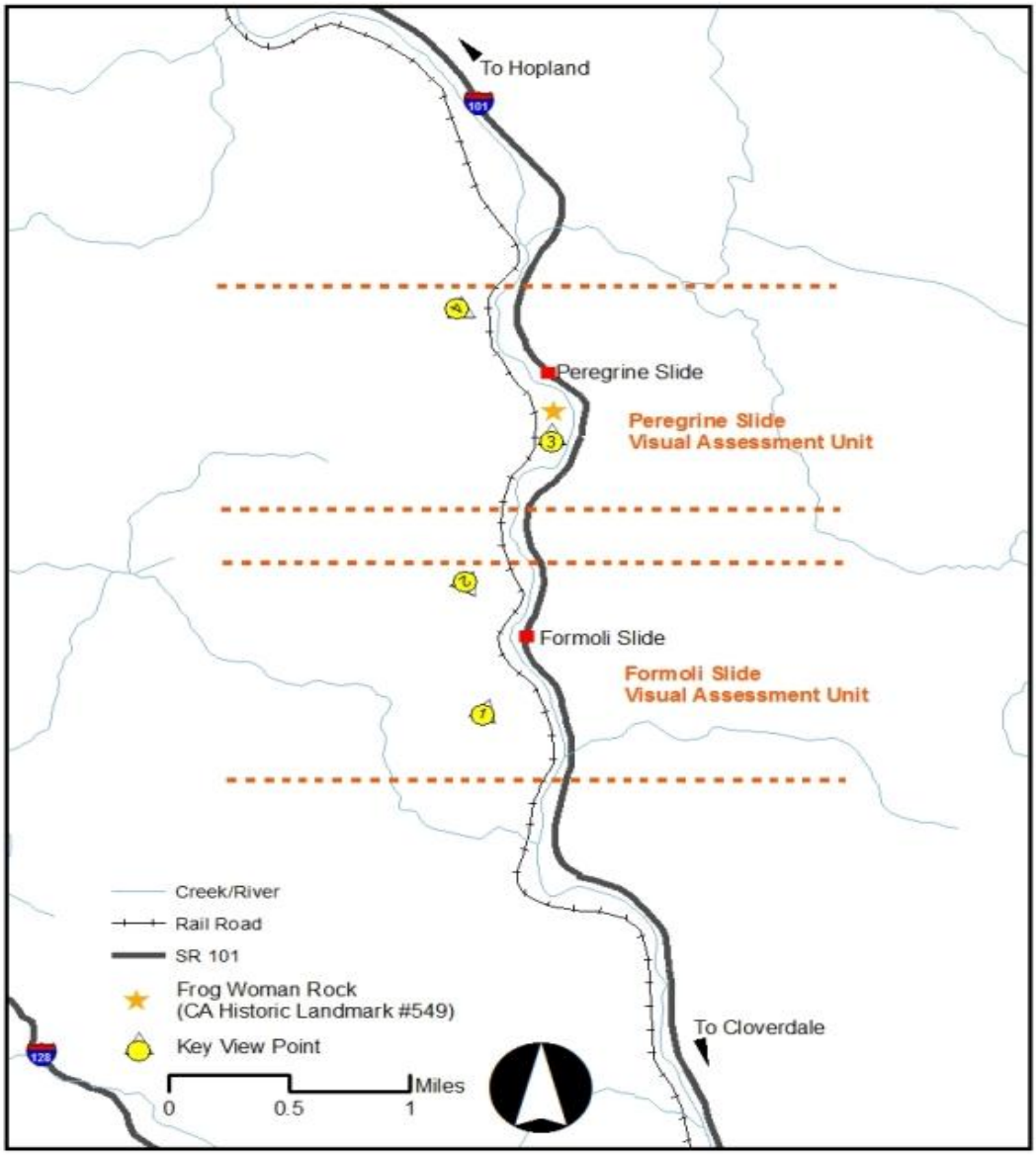
Formoli Slide Visual Assessment Unit

- Located between post miles 3.6 and 4.0
- Viewpoints were selected where highway users come into view of the location of the proposed wall
- The key view looking at the project location from the south is labeled key viewpoint 1
- The key view looking at the project location from the north is labeled key viewpoint 2

Peregrine Visual Assessment Slide Unit

- Located between post miles 4.7 and 5.5
- Unique landform of Frog Woman Rock
- Views were selected where highway users come into view of Frog Woman Rock and the proposed wall
- The key view looking at project location from the south is labeled key viewpoint 3
- The key view looking at the project location from the north is labeled key viewpoint 4

The following map illustrates visual assessment units and key views for the project:




There are two major types of viewer groups for highway projects: highway neighbors and highway users. For this project, the highway neighbors are the rural landowners. Although there are ranches in the area, they do not have views of the highway in the project area. The highway users for this project are considered to be commuters, long distance drivers, tourists, commercial haulers, recreational-river enthusiasts, and bicyclists.

**Environmental Impacts**

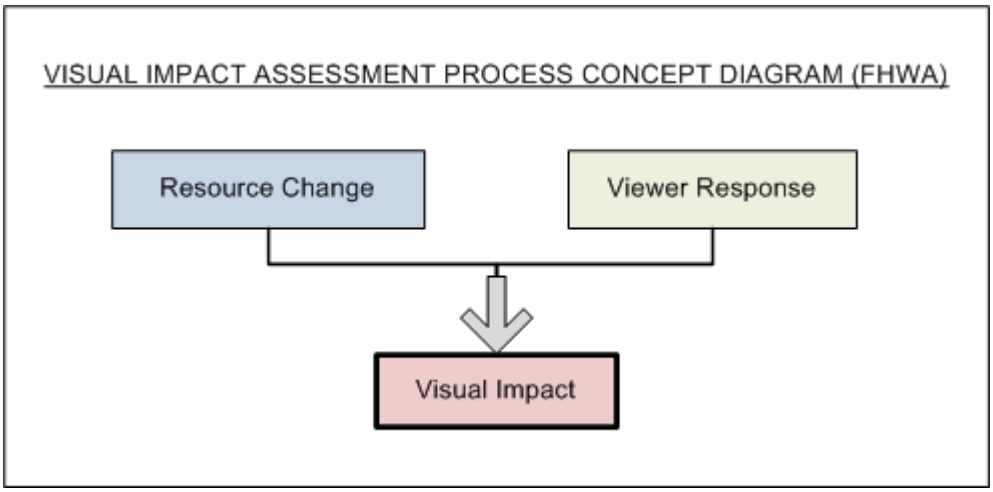
Impact criteria define the level of direct and indirect impacts on Visual and Aesthetics. The purpose of the impact criteria is to help determine when an impact is significant under CEQA.

The following general criteria were used to evaluate the impacts of the proposed project on Visual and Aesthetics.

Will the project:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Substantially degrade the existing visual character or quality of the site and its surroundings?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations are also considered. A generalized visual impact assessment process is illustrated in the following diagram.




Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed project. Viewer response can be measured by two variables: viewer exposure and viewer sensitivity. Viewer exposure is a measure of how often and how well a particular scene is viewed by viewers. Visual sensitivity is a measure of how receptive a viewer is at noticing change to a particular view.

Table 1 provides a reference for determining levels of visual impact by combining resource change and viewer response.

TABLE 1.
Visual Impact Ratings Using Viewer Response and Resource Change

| | | Viewer Response | | | | |
|---|---|---|---|---|---|---|
| | | Low (L) | Moderate-Low (ML) | Moderate (M) | Moderate-High (MH) | High (H) |
| Resource Change | Low (L) | L | ML | ML | M | M |
| | Moderate-Low (ML) | ML | ML | M | M | MH |
| | Moderate (M) | ML | M | M | MH | MH |
| | Moderate-High (MH) | M | M | MH | MH | H |
| | High (H) | M | MH | MH | H | H |

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key views associated with visual assessment units that would most clearly demonstrate the change in the project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the project considering exposure and sensitivity.

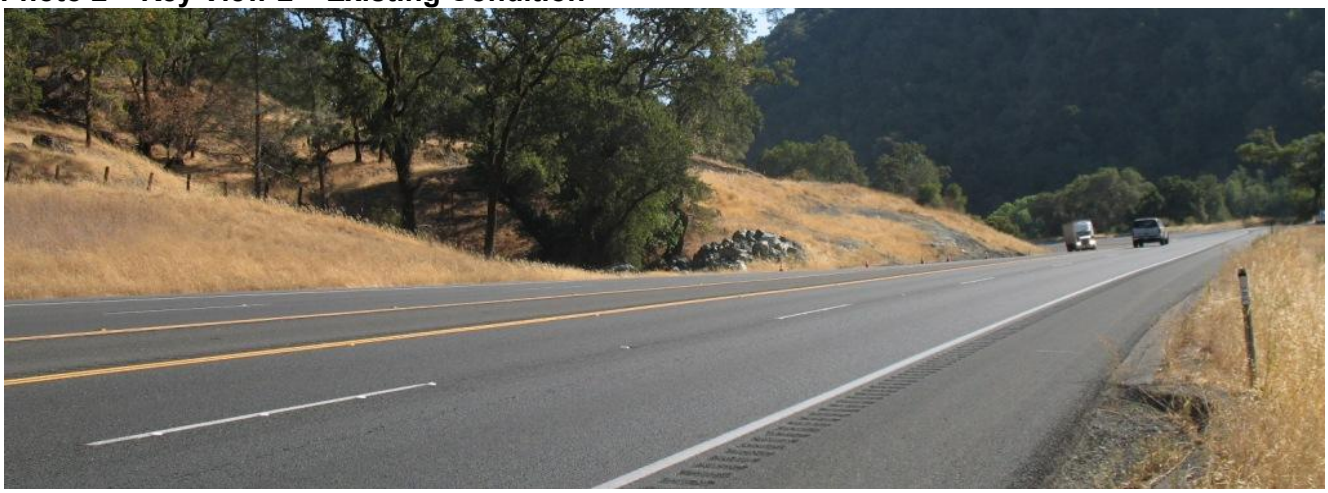
The following section describes and illustrates visual impacts by visual assessment unit, compares existing conditions to the proposed alternatives, and includes the predicted viewer response. Photo simulations were created by using photographs taken at the project locations. Computer programs were used to "build" the walls and place them into the photo's existing landscape.

**Formoli Visual Assessment Unit**

The view of the highway in Photos 1 and 2 includes the highway striping lines that accentuates the curvilinear, flowing quality of the landscape setting. The highway was built to fit into the existing landscape by following the line of the Russian River, natural contours, and minimizing cuts into the hillside.

**Photo 1 – Key View 1 – Existing Condition**

**Photo 2 – Key View 2 – Existing Condition**



Views along the Russian River corridor are typical to the view of the existing conditions at Formoli Slide. This provides a unified experience throughout the corridor.

**Photo 3 – Key View 1 – Proposed Condition**

Photo 3 above is a simulation at Formoli Slide that depicts what the area would look like with the proposed soldier pile tie back wall. Vehicles and people are included to illustrate the size of the wall.

Changes to the visual character at Formoli Slide would be high and changes to the visual quality would be moderately high. The wall presents a dominance over the landscape, which is out of character for the highway corridor. The overall resource change would be moderately high.

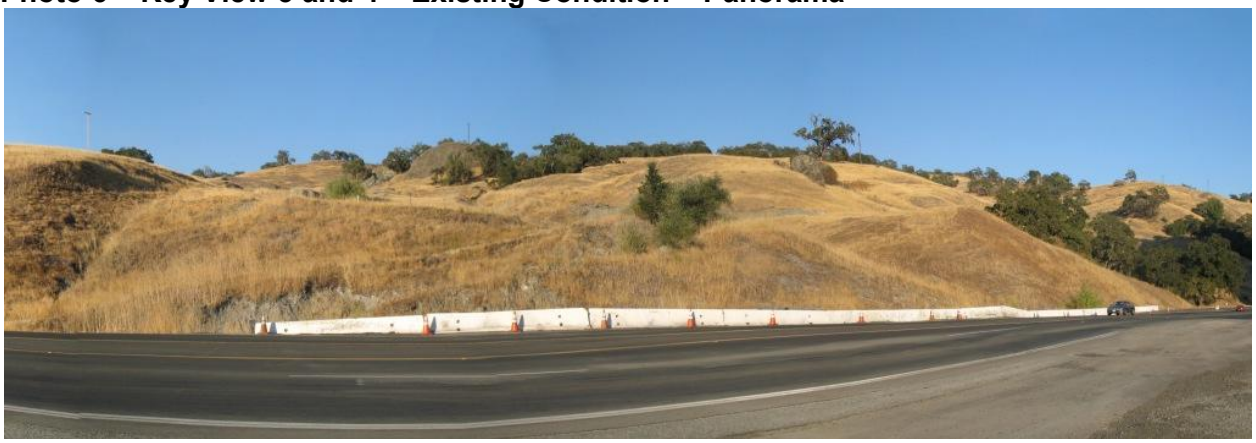
**Peregrine Visual Assessment Unit**

The Peregrine visual assessment unit has high continuity as reflected in photos 4 and 5. The form, lines and color are continous throughout the landscape. Frog Woman Rock is the dominant feature in both this visual assessment unit and the corridor as a whole.

**Photo 4 – Key View 3 at PM 5.1 looking north – Existing Condition**

**Photo 5 – Key View 4 at PM 5.5 looking south – Existing Condition**

**Photo 6 – Key View 3 and 4 – Existing Condition – Panorama**



Viewer awareness is high to variations within the landscape. Overall viewer response to the wall at this location is moderately high. The resource change of key views 3 and 4 in photo 7 are higher than moderately high. It is likely that the proposed changes would be considered adverse.

**Photo 7 – Key View 3 and 4 – Proposed Condition – Panorama**

As a result of this project, major changes in visual resources will occur within the project limits. These changes will be due primarily to the increased visibility of "built" characteristics and the decrease of scenic components. This change of character will be most evident to the typical viewer in terms of landform alterations and the introduction of large, out-of-scale built elements. The proposed project will have the greatest visual impact at the Peregrine Slide location.

Temporary impacts created during project construction will include areas used for staging of equipment and materials. The construction zone will have vehicles, heavy equipment and materials required for construction. Construction sites typically have orange cones and K-rail to direct traffic. These temporary visual impacts are part of the general construction landscape and do not require mitigation. The duration of the construction for both locations is expected to take two construction seasons. Temporary impacts will cease when construction is completed.

## Avoidance, Minimization, and/or Mitigation Measures

The inclusion of aesthetic features in the project design can help minimize the visual impact of the walls. These measures will be designed and implemented during final project design. Implementation of the following measures in this section would minimize adverse effects of the project and the overall visual impact would be less than high.

Formoli Slide Retaining Wall

A soldier tie back wall will be constructed at the Formoli Slide location. Soldier pile walls have vertical beams placed eight feet apart with wood timber lagging placed horizontally between them. Although this style of construction is not designed with aesthetics in mind, the natural material of the wood helps it to blend into the landscape.

The following measures are recommended to minimize visual impacts:

- Color the vertical H beams to match the color of the wood timber lagging. This will reduce the vertical versus horizontal elements, which are contrasting.
- Minimize wall length to the extent possible so that the slide issues are addressed, but the size/impact of the wall is as minimal as possible.
- Design the end of the wall at the north end to minimize impacts to the natural drainage channel and existing trees.
- Stairstep the wall to fit with the natural contours, rather than having areas of wall where no earth is behind it.
- Shorten the tapered portion of the wall by half and allow soil to wrap around the ends of the wall and slope in front of the wall onto the pullout. This would reduce the exposed area at the base of the wall by approximately 60 feet. It would also allow the wall to visually blend into the existing slope.
- Add topsoil to new slopes to improve growing conditions for grasses and shrubs.

Peregrine Slide Retaining Wall

The aesthetic treatment to Peregrine Wall that is being considered is a faux rock facing to emulate the rock at Frog Woman Rock. The Peregrine Slide wall is being designed as a soldier pile wall with sprayed-concrete applied over. The concrete would be sculpted and stained various shades of browns and grays to simulate rock. Another option is to leave the wall as a soldier pile (timber lagging) wall and not apply sprayed-concrete.

The following measures are recommended to minimize the projects' visual impacts:

- The forms, colors, textures and fractures need to match the vernacular rock outcroppings of Frog Woman Rock to the greatest extent possible.
- The interfaces between the wall edges and the natural landforms, especially the top of wall profile, should mimic the rough and uneven profile of a rock formation found in nature, including protrusions specifically intended for aesthetic purposes
- Apply stain to the concrete which prevents minerals from leaching onto the exterior face.
- Minimize wall length to the extent possible so that slide issues are addressed, but the size/impact of the wall is as minimal as possible.
- Seed sloped area in front of wall with native grasses and plant native shrubs. This will reduce the length of the wall's straight linear pattern.
- Have a slope ratio of 2:1 or flatter for the slope which wraps soil around the ends of the wall.
- Plant native vegetation on the mound to screen views of the wall.
- Add topsoil to new slopes to improve growing conditions for grasses and shrubs.

**Conclusion**
The project area is within the larger rural setting of northern California. The recommended minimization measures would help to reduce the visual impacts of the proposed project. With minimization efforts, Formoli Wall will have a visual impact of moderately high. With minimization efforts the Peregrine Wall will have a visual impact of less than high. Implementation of the walls will change the texture, color, line, scale, dominance and landform of the corridor because man-made elements are in conflict with the existing rural character.

With the incorporation of avoidance, minimization, and mitigation measures there will be less than a significant impact to aesthetics in the project area.

## WATER QUALITY AND STORM WATER RUNOFF

### Regulatory Setting

**Federal Requirements: Clean Water Act**
In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

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

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

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the USACE’s Standard permits. There are two types of Standard permits: Individual

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

permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

**State Requirements: Porter-Cologne Water Quality Control Act**

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

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

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

**State Water Resources Control Board and Regional Water Quality Control Boards**

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

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

Municipal Separate Storm Sewer Systems (MS4)

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

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

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

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

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are

smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

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

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.
In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

## Affected Environment

This project is located on SR 101 at PM 3.75 and PM 5.30 within Mendocino County. The project is situated in Ukiah Hydrologic Sub-Area (HSA) No. 114.31 that lies within Upper Russian River Hydrologic Area and located in Russian River Hydrologic Unit of Upper Russian River watershed.

The major water body in the proximity of the project is Russian River. The receiving water body is listed as impaired pursuant to Section 303(d) of Clean Water Act with a Total Maximum Daily Load. The constituents of concern are Indicator Bacteria, Sedimentation/Siltation, and Temperature. Sedimentation and Siltation are normally associated with stormwater run-off from highways. Total Daily Maximum Loads for Sedimentation/Siltation have been adopted for Russian River Hydrologic Unit by North Coast Regional Water Quality Control Board (NCRWQCB) and approved by USEPA.

The following waterbodies are in or near Ukiah HSA No. 114.31: Big River, Cache Creek-Clear Lake to Yolo Bypass, and Navarro River. The hydrologic information of the project is summarized in Table 2 below.

**Table 2: Hydrologic Information**

| Hydrologic Unit | Hydrologic Sub-Area | Hydrologic Sub-Area Name | Average Annual Precipitation (Inches) |
|---|---|---|---|
| Russian River | 114.31 | Ukiah | 40.74 |

## Environmental Impacts

Impact criteria define the level of direct and indirect impacts on Water Quality and Storm Water Runoff. The purpose of the impact criteria is to help determine when an impact is significant under CEQA.

The following general criteria were used to evaluate the impacts of the proposed project on Water Quality and Storm Water Runoff.

Will the project:

- Violate any water quality standards or waste discharge requirements?
- 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?
- Otherwise substantially degrade water quality?

The disturbed soil area (DSA) of the project is estimated to be greater than one acre. As the DSA is more than an acre, a Stormwater Pollution Prevention Plan (SWPPP) is needed during construction. The project shall deploy construction site BMPs to protect water bodies present within or near to the project area.

## Avoidance, Minimization, and/or Mitigation Measures

To prevent potential pollution to receiving waters as a result of construction activities and/or operations related to this project, the following recommendations are highly advised:

1. The Upper Russian River Hydrologic Area Total Daily Maximum Loads for sedimentation and siltation requires sediment and erosion-control BMPs to avoid further impairment. Anticipated temporary sediment and erosion control measures for this project include the following: silt fence, fiber rolls, sandbag barrier, gravel bag berm, drain inlet protection, and rolled erosion-control product (e.g., netting).
2. The project shall adhere to the conditions of the Caltrans Statewide NPDES Permit CAS # 000003, (Order # 99-06-DWQ), issued by the State Water Quality Control Board. Adherence to the compliance requirements of the NPDES Construction General Permit CAS # 000002, Order # 99-08-DWQ, for General Construction Activities is also required.
3. Because the total DSA is anticipated to be greater than one acre, a Caltrans-approved Storm Water Pollution Prevention Plan (SWPPP) will be required. The SWPPP specifies the level of temporary pollution control measures for the project. Applicable provisions of Section 13 of Caltrans 2010 Standard Specifications shall be included in the project design package to address construction's temporary water pollution control measures. These measures must address soil stabilization, re-vegetation of riparian areas around intermittent streams, sediment control, tracking control and wind erosion control practices. In addition, at a minimum, the project plans must include non-storm water controls, waste management and material pollution controls.

a) Management of storm water runoff from the construction site shall be addressed during project design to control potential sources of water pollution before it encounters any storm water drainage system or watercourse. The Contractor is required to control material pollution, manage waste and non-storm water at the construction site. A Contractor-prepared SWPPP shall incorporate appropriate temporary construction site BMPs to implement effective handling, storage, use and disposal practices during construction activities.
b) Existing drainage facilities shall be identified and protected by the application of appropriate construction site BMPs.
c) Caltrans' Storm Water Management Plan (SWMP), Project Planning and Design Guide (PPDG) Section 4, and Evaluation Documentation Form (EDF) provide detailed guidance in determining if a specific project requires the consideration of permanent Treatment BMPs. Line Item BMPs may be required to be incorporated into the project design.

4. The project will be regulated by the NCRWQCB through Caltrans Statewide NPDES Permit (Board Order 99-06-DWQ). Caltrans shall implement the programs specified in its approved Storm Water Management Plan. The Caltrans NPDES office will participate in early project design in consultation with the Regional Board. Caltrans shall solicit Regional Board staff review during the project's design. Coordination with Regional Board staff shall be conducted through the District NPDES Coordinator.
    a) Any storm water/urban runoff collection, treatment, and/or infiltration disposal facilities shall be designed, installed, and maintained for the discharge of storm water runoff from all impervious surfaces generated by the 20-year, one-hour design storm within the appropriate watersheds. Runoff in excess of the design storm generated within the project site shall only be discharged to storm drain or stabilized drainage system capable of conveying flow from 100-year, 24-hour storm. If site conditions do not allow for adequate onsite disposal, all site runoff must be treated to meet applicable Effluent Limits and/or Receiving Water Limitations specified in the Basin Plan. The NCRWQCB Executive Officer may approve alternative mitigation measures.
    b) In accordance with the Basin Plan of the NCRWQCB (Implementation Plans, Section 4-10), discharges of storm water from permitted storm water conveyance systems (such as Caltrans storm water conveyance facilities) shall not be subject to the Basin Plan's point source waste discharge prohibitions if the following conditions are met:
        i. The discharge and the activities which affect the discharge are managed in conformance with the provisions of the applicable NPDES permit.
        ii. The discharge does not cause adverse effects on the beneficial uses of the receiving water. The permittee shall implement a general management program to eliminate or minimize non-storm water discharges into surface waters. The program shall be submitted to the Regional Water Board for approval and include implementation of BMPs, outreach and education, inspections, monitoring, reporting and enforcement provisions. The approved Caltrans SWMP has satisfied the condition.
        iii. All construction site BMPs would follow the latest edition of the Storm Water Quality Handbook: Construction Site Best Management Practices Manual (Caltrans 2003) to control and minimize the impacts of construction-related activities, materials and pollutants from non-storm water discharges into surface waters.

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

## HAZARDOUS WASTE/MATERIALS

### Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.
California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

### Affected Environment

A Preliminary Site Investigation was prepared in January 2015 to determine the actual levels of naturally occurring asbestos (NOA) present to determine disposal options for excess material that the project will generate. Previous studies in the project corridor have documented the presence of NOA at numerous locations. In addition, the project is in an area that is designated as "may contain" NOA by the Mendocino County Air Quality Management District.

## Environmental Impacts

Impact criteria define the level of direct and indirect impacts on hazardous waste/materials. The purpose of the impact criteria is to help determine when an impact is significant under CEQA.

The following general criteria were used to evaluate the impacts of the proposed project on hazardous waste/materials.

Will the project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?

The Preliminary Site Investigation found that project-specific NOA levels are very low or "non-detect" and that there will not be a need for disposal site restrictions. However, there are still requirements in handling of the project's excess material.

At a minimum, an Asbestos Compliance Plan and Dust Control Plan will need to be included in the project contract. In addition, lead is present at some levels in yellow thermoplastic stripe and in soils from aerially deposited lead.

## Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and/or minimization measures will be implemented for this project:

- Excess material from the project will need to be designated "Restricted Material" and NOA warnings will need to be provided.
- Constructed shoulder and finished grade areas with vehicle or pedestrian access will need to be capped with at least three inches of material containing less than 0.25 percent NOA. "Limited Access" surfaces may also need to be capped unless an exemption is received from the Mendocino County Air Quality Management District. The need and extent of capping disturbed areas will be determined when the project enters the design phase.
- A Lead Compliance Plan will be incorporated into the contract along with SSP 7-1.02K(6)(i)(iii) for Earth Material Containing Lead and SSP 15-1.03B for Residue Containing Lead from Paint and Thermoplastic.
- An Asbestos Compliance Plan will be incorporated into the contract.

With the incorporation of these avoidance and minimization measures there will be less than a significant impact from hazardous materials/waste.

# Biological Environment

### WETLANDS AND OTHER WATERS

### Regulatory Setting

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

waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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

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

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

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE

may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

## Affected Environment

A delineation of wetlands, other waters of the U.S., and waters of the State has been conducted for this project. In the ESL, the other waters of the U.S. are comprised of four drainages located at PM 3.72, 4.95, 5.11, and 5.22. In the ESL, there is one wetland (WET1) located on the eastern hill slope of the highway near PM 3.75.

## Environmental Impacts

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

The following general criteria were used to evaluate the impacts of the proposed project on waters of the U.S/waters of the State.

Will the project:

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There will be no impacts to the wetland as a result of the project. However, the proposed construction of the project would result in permanent impacts of 0.048 acre of other waters of the U.S. and other waters of the state. Proposed construction of the project would result in temporary impacts of 0.006 acre of other waters of the U.S. and other waters of the state. The impacts are a result of the replacement of the culverts and fill of the drainage at PM 5.22. A summary of the impacts to waters of the U.S. and state within the project ESL can be found in Table 3.

**Table 3: Impacts to Waters of the U.S. and State**

| **WATERS OF THE U.S. and STATE** | **Area (sq ft)** | **Volume (cu yd** | **Area (sq ft)** | **Volume (cu yd)** |
|---|---|---|---|---|
| | **Temporary** | | **Permanent** | |
| Wetlands | | | | |
| Three-Parameter Wetland (WET 1) | 0.00 | 0.00 | 0.00 | 0.00 |
| **WETLANDS TOTAL** | **0.00** | **0.00** | **0.00** | **0.00** |
| Other Waters of the U. S. and State | | | | |
| Culvert PM 3.72 | 50.00 | 0.00 | 0.00 | 0.00 |
| Culvert PM 4.95 | 160.00 | 0.00 | 370.00 | 7.78 |
| Culvert PM 5.11 | 50.00 | 0.00 | 0.00 | 0.00 |
| Drainage at PM 5.22 | 0.00 | 0.00 | 1725.0 | 95.83 |
| **OTHER WATERS TOTAL** | **260.00 (0.006 acres)** | **0.00** | **2095.00 (0.048 acres)** | **103.61** |

Consultation with the USACE will occur due to project impacts to other waters of the U.S. under Section 404 of the Clean Water Act. Consultation with the NCRWQCB will occur due to project impacts to waters of the state under Section 401 of the Clean Water Act. The amount of impacts will also be further calculated once final design plans have been developed. Caltrans will also have to consult with the CDFW under Section 1602 of the Lake and Streambed Alteration Agreement for impacts to the same bodies of water.

Impacts to waters of the U.S. and state would be offset through the restoration of the project area to pre-project conditions. Areas disturbed for access and construction would be stabilized and re-vegetated at the completion of construction in order to minimize erosion and restore functions and values of the habitat. A hydroseed mixture may be applied as a means of bank stabilization and would be comprised of species appropriate and representative of the project area.

## Avoidance, Minimization, and/or Mitigation Measures

The following measures will be incorporated into the project to avoid or minimize impacts to other waters of the U.S./waters of the State during construction:

Avoid Wetlands

- All wetlands in the project limits will be designated as environmentally sensitive areas (ESA).
- ESA information will be shown on contract plans and discussed in the Special Provisions. ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, or to delineate and exclude sensitive resources from potential construction impacts.
- Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials).
- ESA provisions shall be implemented as a first order of work, and remain in place until all construction activities are complete

Minimize Disturbance to Jurisdictional Waters

- Disruption of drainages will be minimized and vegetation removal shall be limited to the absolute minimum amount required for construction.

Restrict Timing of In-Stream Activities

- To avoid direct impacts to water quality, no work will be performed in drainages within the project area until flows are at their seasonal low-flow or have ceased, and the streambed is dry. In most years, the seasonal low-flow or dry period occurs between June 15$^{th}$ and October 15$^{th}$. Work in drainages will also be subject to stream conditions and permit restrictions.

Revegetation of Disturbed Habitats

- Upon completion of project construction, streambanks will be permanently stabilized with a hydroseed mixture of native species.
- Only native seed material shall be used. Seed, hay and straw used in erosion control applications shall be certified weed-free or weed-seed free.
- Revegetation of drainages will be conducted after construction with riparian plants or similar plantings.

## ANIMAL SPECIES

### Regulatory Setting

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

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

### Migratory Birds

Federal and state laws protect migratory birds, their occupied nests, and their eggs from destruction. The applicable Federal law is the Migratory Bird Treaty Act (15 USC 703-711), 50 CFR Part 21, and 50 CFR Part 10. Protection under California law is found in the Fish and Game Code Sections 3503, 3513, and 3800.

### Affected Environment

Vegetation removal will be required to facilitate access by construction equipment and personnel.

### Environmental Impacts

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

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

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

Migratory birds could potentially be affected by the proposed project if they are present within the project limits during construction. Potential impacts include nest abandonment, increased stress, and mortality. However, no impact to migratory birds is anticipated with implementation of the following avoidance and minimization measures.

**Avoidance, Minimization, and/or Mitigation Measures**
The following measures will be incorporated into the project to avoid or minimize impacts to migratory birds during construction.
Comply with Migratory Bird Treaty Act

- Minimize removal of native vegetation by locating staging areas and access routes in previously disturbed areas and establishing ESAs.

Restrict Timing of Vegetation Removal

- If feasible, removal of vegetation shall be conducted in the fall and winter (between September 1st and February 14th) after fledging and before the initiation of breeding activities.

Pre-Construction Nesting Bird Surveys

- If vegetation removal during the non-nesting season is determined unfeasible, then pre-construction bird nest surveys shall be performed to determine the location of nest sites within and adjacent to the project limits.
- If no active bird nests are found during pre-construction surveys, then vegetation must be removed within five (5) days. Pre-construction surveys will be conducted by a Caltrans Biologist or qualified biologist.
- If active bird nests are found, Caltrans shall coordinate with the USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918, and with the CDFW to comply with provisions of the Fish and Game Code of California.
- If a lapse in project related work of fifteen (15) days or longer occurs, another survey and, if required, coordination with USFWS and the CDFW will occur before work can be reinitiated.

Therefore, there will be less than a significant impact to migratory birds with the incorporation of these avoidance and minimization measures.

**CLIMATE CHANGE**

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels. Research from such establishments as the Intergovernmental Panel on Climate Change (IPCC) are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride ($SF_6$), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light duty trucks, other trucks, buses, and motorcycles) make up the largest source (second to electricity generation) of GHG emitting sources. 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) improving the transportation system and operational efficiencies, 2) reducing growth of vehicle miles traveled (VMT), 3) transitioning to lower GHG emitting fuels, and 4) improving vehicle technologies. To be most effective all four strategies 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 GHG emissions and climate change. Relevant legislation includes the following policies:

- Assembly Bill 1493 (AB 1493), Pavley
- Executive Order (EO) S-3-05: (signed on June 1, 2005, by former Governor Arnold Schwarzenegger)
- AB 32, the Global Warming Solutions Act of 2006, Núñez and Pavley
- Executive Order S-20-06: (signed on October 18, 2006 by former Governor Arnold Schwarzenegger)
- Executive Order S-01-07: (signed on January 18, 2007 by former Governor Arnold Schwarzenegger)
- Senate Bill 97 (SB 97) Chapter 185, 2007
- Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a policy that will ensure coordinated efforts to incorporate climate change into decisions and activities. This policy contributes to Caltrans' stewardship goal to preserve and enhance California's resources and assets.

### ***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 the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level GHG 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. Despite the lack of Federal GHG regulations and legislation, FHWA as well as the National Highway Traffic Safety Administration (NHTSA) and U.S. EPA are taking steps to lessen climate change impacts by improving transportation system efficiency, creating cleaner fuels, reducing the growth of vehicle hours travelled, and enabling the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines.

## Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[3]

Caltrans and its parent agency, the California State Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98

[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 South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

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, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[4]

This project involves slowing or stopping slope movement at two locations along the roadway. This project will not increase roadway capacity which would otherwise create additional vehicle emissions. Construction emissions from this project will be unavoidable, but there will likely be small long-term GHG benefits by improved roadway operation and reduced maintenance trips to remove debris from slide activity.

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

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

**CEQA Conclusion**
Although construction emissions are unavoidable and are expected to be minimal, the proposed project will not increase capacity and is not expected to result in additional operational $CO_2$ emissions. 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 determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

**Climate Change Strategies**
There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas 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 resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[5].

**Greenhouse Gas Reduction Measures**
*AB 32 Compliance*
Caltrans continues to be actively involved on the Governor's Climate Action Team as ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year.

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

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

1. According to Caltrans' Standard Specifications, the contractor must comply with all of the local Air Pollution Control District's (APCD) rules, ordinances, and regulations regarding air quality restrictions.
2. Caltrans Standard Specifications, a required part of all construction contracts, should effectively reduce and control emission impacts during construction under the provisions of Section 7-1.02C "Emission Reduction". Provision 14-9.02 "Air Pollution Control" requires the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.

**Adaptation Strategies**

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

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

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

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

## Chapter 4 – List of Preparers

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Haney, Jeff, Associate Environmental Planner (Archaeology). Contribution: Historic Property Survey Report

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Walker, Liza, Associate Environmental Planner. Contribution: Project Coordinator and Environmental Document Preparation

Werner, Steve, Engineering Geologist. Contribution: Initial Site Assessment and Preliminary Site Investigation

Zandian, Saeid, Transportation Engineer. Contribution: Air Quality Report and Noise Assessment