

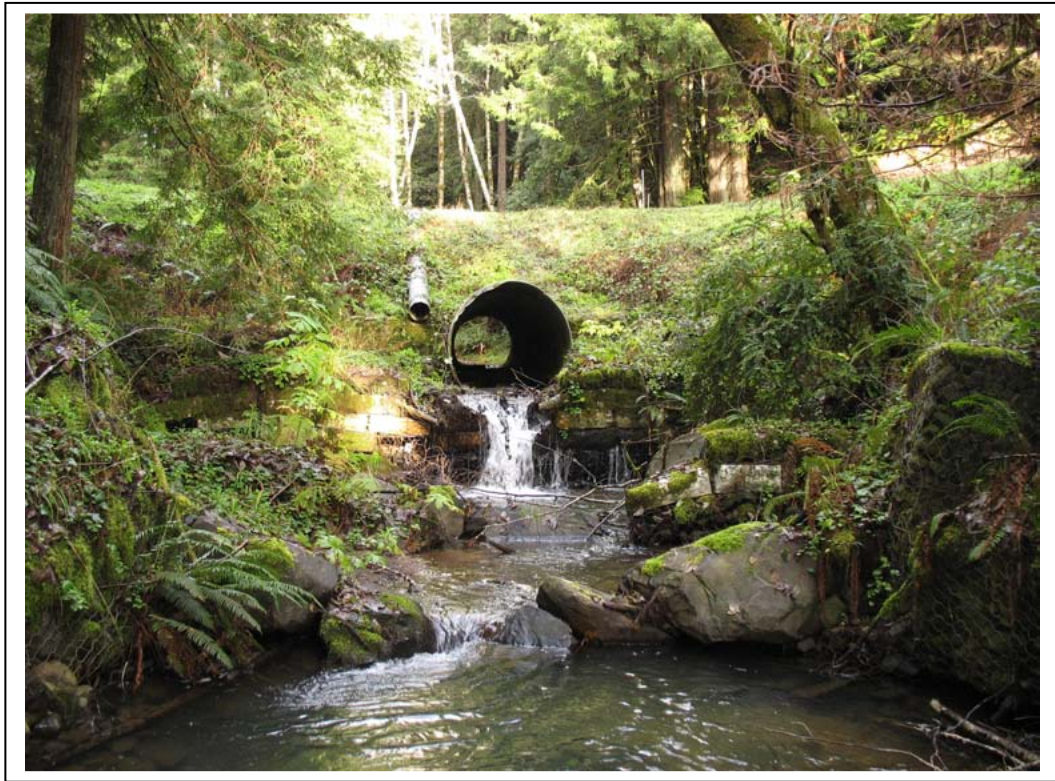
# **Dunn Creek Fish Passage**

State Route 1 in Mendocino County

01-MEN-1-PM 92.83

EA 38572

## **Initial Study with Proposed Negative Declaration**



Prepared by the  
State of California Department of Transportation

March 4, 2010





## **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 alternative being considered for the proposed project located in Mendocino County, California. The document describes why the project is being proposed, the alternative for the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures.

### ***What should you do?***

- Please read this Initial Study with Proposed Negative Declaration. Copies of the document are available at the locations listed below. Individual technical studies can be requested by contacting Steve Croteau at 707-441-5615, or at [steven\\_croteau@dot.ca.gov](mailto:steven_croteau@dot.ca.gov).
  - 1) California Department of Transportation, 1656 Union St., Eureka, CA
  - 2) Humboldt County Library, Eureka Branch, 1313 3rd St., Eureka, CA
  - 3) Mendocino County Library, Ukiah Branch, 105 North Main St., Ukiah, CA
  - 4) Mendocino County Library, Willits Branch, 390 East Commercial St., Willits, CA
  - 5) Mendocino County Library, Fort Bragg Branch, 499 Laurel Street, Fort Bragg, CA
  - 6) Garberville-Redway Chamber of Commerce, 782 Redwood Dr., Garberville, CA
- If you have any comments regarding the proposed project, please send your comments to Caltrans by the document review deadline: April 9, 2010.
- Submit comments via postal mail to:

Steven Croteau, Associate Environmental Planner  
California Department of Transportation, Environmental Management Branch  
P.O. Box 3700, Eureka, CA 95502-3700

Submit comments via email to [steven\\_croteau@dot.ca.gov](mailto:steven_croteau@dot.ca.gov).

### ***What happens next?***

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

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Steve Croteau, 1656 Union St. Eureka, CA 95501, or 707-441-5615; or use the California Relay Service TTY number, 711.



Dunn Creek Fish Passage

01-MEN-1-PM 92.83  
EA 38572

**INITIAL STUDY with Proposed Negative Declaration**

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

THE STATE OF CALIFORNIA  
Department of Transportation

Mar. 4, 2010

Date of Approval



Cindy Anderson, Office Chief  
North Region Environmental Services--North  
California Department of Transportation



## Proposed Negative Declaration

Pursuant to: Division 13, Public Resources Code

### ***Project Description***

The California Department of Transportation (Caltrans) is proposing to conduct a fish passage project on State Route 1 (post mile 92.83) at Dunn Creek in Mendocino County. Dunn Creek currently crosses State Route 1 through a nine-foot diameter structural steel plate pipe (SSPP) culvert. There is a six-foot vertical drop 50 feet downstream of the culvert outlet, creating a fish passage barrier for Federal and State protected fish species. The project would be accomplished by removing the existing culvert and constructing a 134-foot long concrete slab bridge. The bridge would allow for the installation of rock weirs, providing grade control, and allowing for all life stages of fish to pass.

### ***Determination***

Caltrans has prepared an Initial Study for this project and has determined that the proposed fish passage project would not have a significant effect on the environment for the following reasons:

- The proposed project would have no permanent effect on agricultural resources, air quality, cultural resources, geology/soils, floodplain, land use/planning, mineral resources, noise, population/housing, hazardous materials, public services, recreation, transportation/traffic, or utilities/services systems.
- The proposed project would have a less than significant impact on biological resources, visual resources, or on hydrology/water quality.

The following avoidance and minimization measures, which, as defined by the California Environmental Quality Act (CEQA), are mitigation measures, have been included in the project:

- **Biological Resources:** Construction would be limited to certain months of the year, biological monitoring, revegetation of disturbed soils with native plant species, noise-generating impact hammers would not be used, and creek diversion and fish relocation during construction.
- **Visual Resources:** Revegetation of disturbed soils with native tree species, study the feasibility of tinting the bridge concrete to blend in with the surrounding landscape, and study the feasibility of installing a see through bridge barrier rail.
- **Hydrology/Water Quality:** Soil stabilization, sediment control, storm water treatment best management practices, non-storm water management, waste management and material pollution control, turbidity control, and fish weirs.

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Cindy Anderson, Office Chief  
North Region Environmental Services—North  
California Department of Transportation

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Date



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# Initial Study

## Dunn Creek Fish Passage Project

### Lead Agency Name, Address and Contact Person

California Department of Transportation  
1656 Union St., Eureka, CA 95501  
Steve Croteau, North Region Environmental Branch E-2

### Project Location

The project is located on State Route 1 at Post Mile (PM) 92.83, approximately six miles inland from the Pacific Ocean and 13 miles west of the town of Leggett in Mendocino County (see Figures 1 and 2, Project Vicinity and Location Map, on pages 5 and 7).

### Purpose and Need

The purpose of the project is to comply with the California Department of Fish and Game (CDFG) Incidental Take Permit that was issued for the Ten Mile River Bridge Replacement Project (located on State Route 1, PM 69.2/70.1, Mendocino County, Project Identification Number 38570). The need is to mitigate for the potential impacts associated with the Ten Mile River Bridge Replacement Project on Federal and State listed fish species.

Construction of the Ten Mile River Bridge Replacement Project required pile driving within the river's channel. Pile driving can create noise levels that have the potential to harm fish. The Ten Mile River has known populations of the Federal and State listed Coho salmon (*Oncorhynchus kisutch*), and the Federal listed Chinook salmon (*Oncorhynchus tshawytscha*), and steelhead trout (*Oncorhynchus mykiss*). As a way to offset any potential impacts to listed fish species, Caltrans agreed to complete a fish passage project where State Route 1 (PM 92.83) crosses Dunn Creek.

### Project Description/Build Alternative

Caltrans is proposing to construct a fish passage project on State Route 1 (PM 92.83) at Dunn Creek in Mendocino County. Dunn Creek currently crosses State Route 1 through a nine-foot diameter structural steel plate pipe (SSPP) culvert. There is a six-foot vertical drop 50 feet downstream of the culvert, creating a fish passage barrier for fish, including the Federal and State listed Coho salmon (*Oncorhynchus kisutch*),

and the Federal listed Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*Oncorhynchus mykiss*).

The fish passage project would be accomplished by removing the existing culvert and constructing a 134-foot long concrete slab bridge. The bridge would allow for the installation of rock weirs in the stream channel, providing grade control and allowing for all life stages of fish to pass. In addition to fish passage, the weirs and grade control measures would prevent head cutting upstream, resulting in the reduction of potential downstream water quality degradation due to sediment.

As part of the project, existing highway fill and manmade materials associated with the culvert would be removed along the existing highway alignment within the creek's channel. This includes the removal of the following: 4,850 cubic yards of fill, the existing 87-foot long by nine-foot diameter structural steel plate pipe (SSPP) culvert, redwood timber and wingwalls, sacked concrete, and wire gabions.

### **Fish Passage Design**

The fish passage design is based on the California Salmonid Stream Habitat Restoration Manual, Section XII, Fish Passage Design and Implementation, CDFG, April 2009. The manual recommends the placement of ten to eleven rock weirs spanning the entire width of the Dunn Creek channel (see Figure 3, Fish Passage Design, on page 9). The weir locations are based on CDFG recommendations (June 24, 2009). The weirs would be constructed with one-half to two-ton rock, be placed in a V-Shape (with the "V" pointing upstream), and would be keyed into the streambed and creek bank to prevent undercutting and flanking. Pursuant to the restoration manual, there would be a one-foot drop maximum per weir, with a four-foot weir width (at low channel/water flows) and spaced approximately 20 feet apart (see Figure 4, Fish Weir Example, page 11). The length of the fish passage design along the creek is approximately 202 feet long and varies in width between 25 to 35 feet. The elevation change within the weir installation limits is approximately 10.5 feet, for a channel slope of 5 percent. The adjusted stream alignment was developed with the goal of minimizing tree removal.

### **Bridge Design**

The bridge would be a 134-foot long, three-span, concrete slab bridge (see Figures 5 and 6, Bridge Design Layout and Bridge General Plan, on pages 13 and 15). The bridge would have two abutments and two piers, and all foundation work would be installed using a Cast in Drilled Hole (CIDH) pile method. The two piers would be

constructed with sixteen (eight at each pier) 24-inch diameter reinforced concrete columns. Throughout the project limits the existing road is 25 feet wide. The new bridge would be 47 feet wide (two 12-foot lanes, two 10-foot shoulders, and two 1.5-foot barriers). The wider bridge is necessary to accommodate the safe passage of a large truck and another vehicle simultaneously. Currently, large trucks are required to cross the highway center lane to maneuver through the turn. The highway approaching the bridge from both directions would have 12-foot lanes with shoulders transitioning (within 50-feet of the bridge) from one to four to ten feet. The road and bridge would be constructed on a 90-foot radius horizontal curve and would have a super-elevation of a 10 percent cross slope. For vehicle sight distance and turning radius purposes, the existing logging road that intersects State Route 1 at the west end of the proposed bridge would need to be elevated up to 12 feet and realigned to meet the highway at a 90-degree angle (see Figure 6, Bridge General Plan, page 15).

## **No Build Alternative**

The No-Build alternative would not meet the purpose and need of the project. The project is intended to comply with the California Department of Fish and Game (CDFG) Incidental Take Permit, mitigating for the potential impacts associated with the Ten Mile River Bridge Replacement Project on listed fish species.

## **Surrounding Land Uses and Setting**

The project site is located on the state highway system at post mile 92.83 on State Route 1. The project limits are bordered by lands zoned as FL 160—Forest Lands (Timber Production). The closest residential parcel is located three miles east.

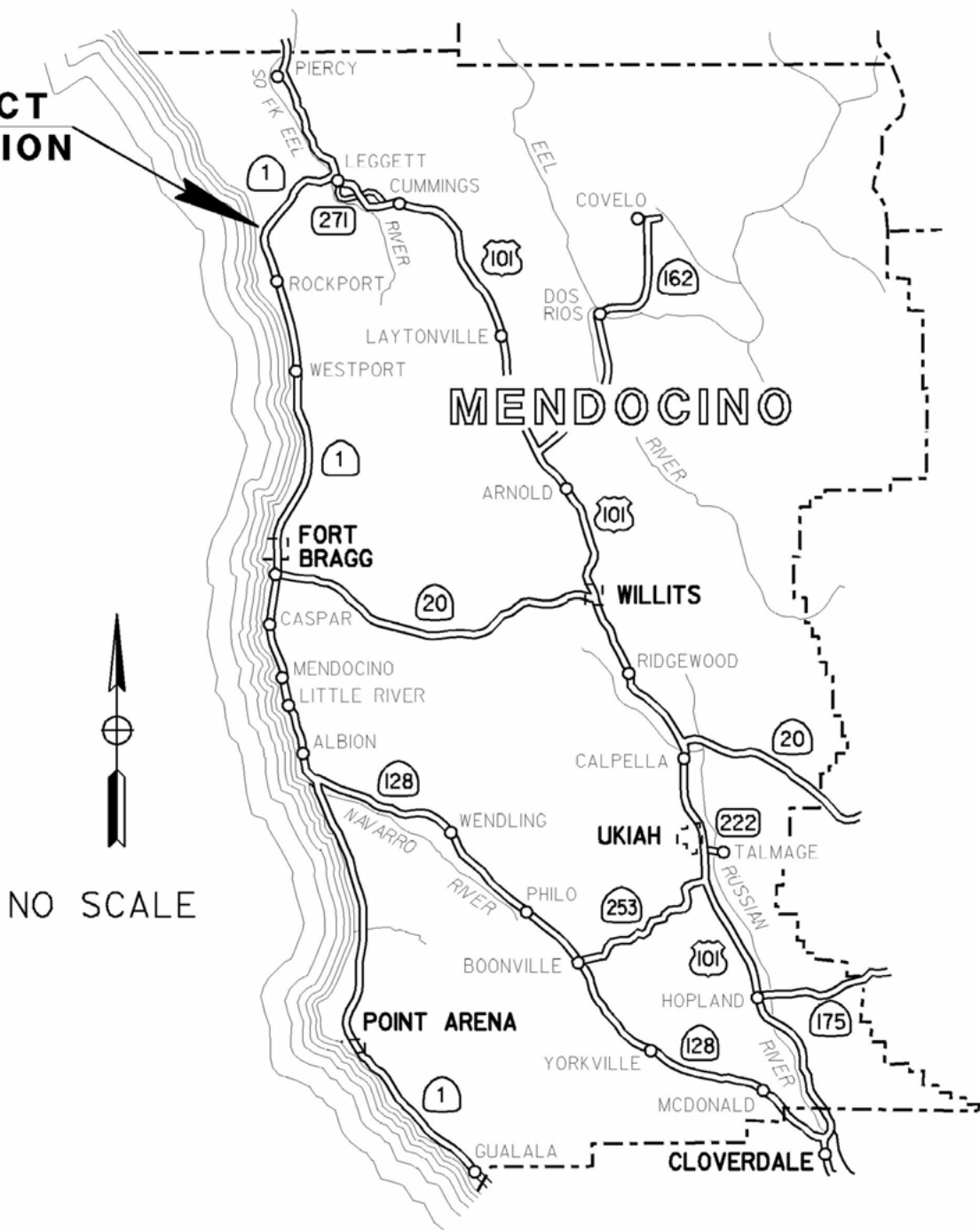
## **Permits and Approvals Needed**

- Federal Endangered Species Act Section 7 Formal Consultation, Biological Opinion: National Oceanic and Atmospheric Administration National Marine Fisheries Service
- Federal Endangered Species Act Section 7 Informal Consultation, Letter of Concurrence: United State Fish and Wildlife Service
- 401 Certification: Regional Water Quality Control Board
- 404 Permit: Army Corps of Engineers
- 1602 Streambed Alteration Agreement: California Department of Fish and Game
- National Pollutant Discharge Elimination System Permit: Regional Water Quality Control Board



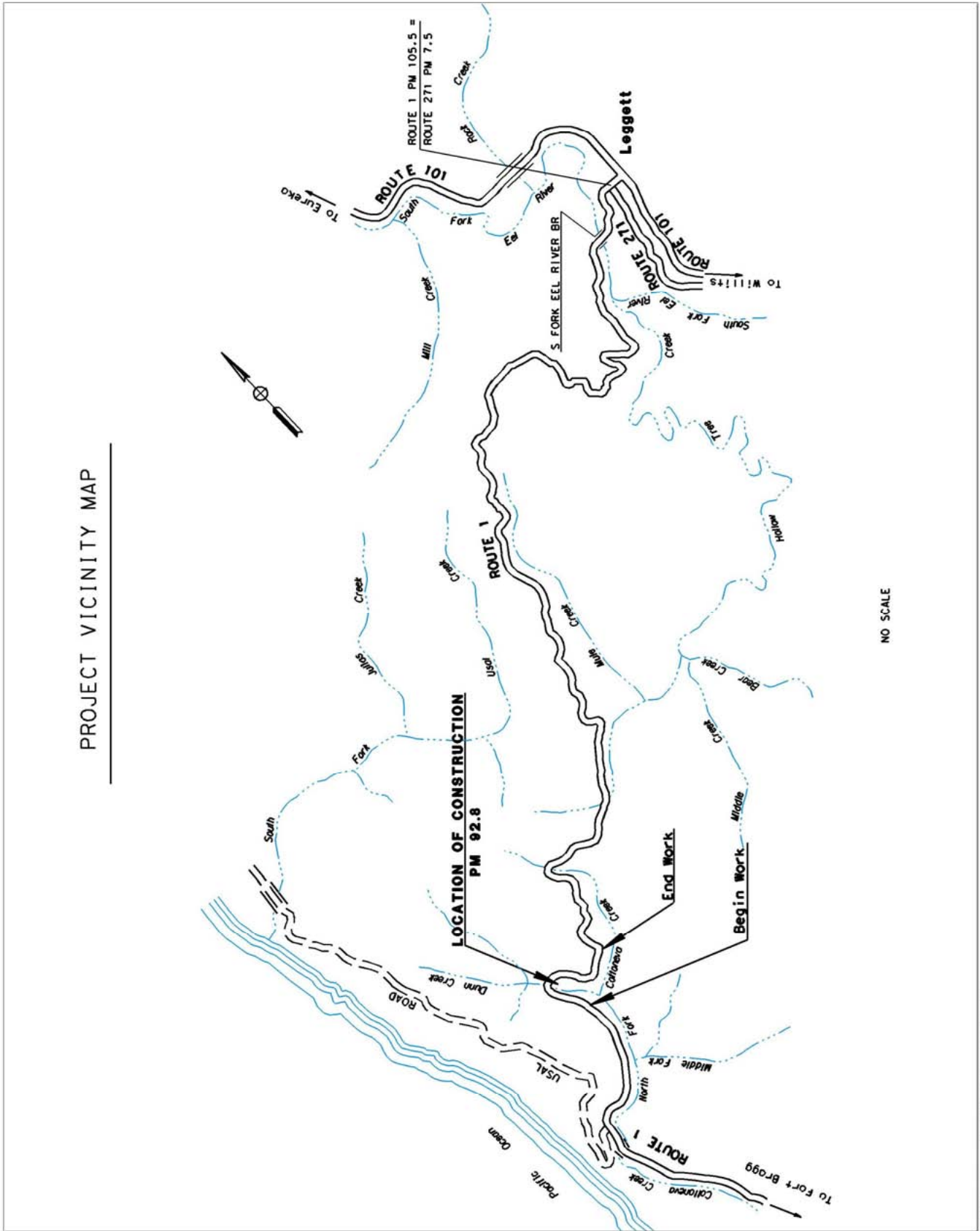
# LOCATION MAP

**PROJECT  
LOCATION**



**Figure 1. Project Location Map**





PROJECT VICINITY MAP

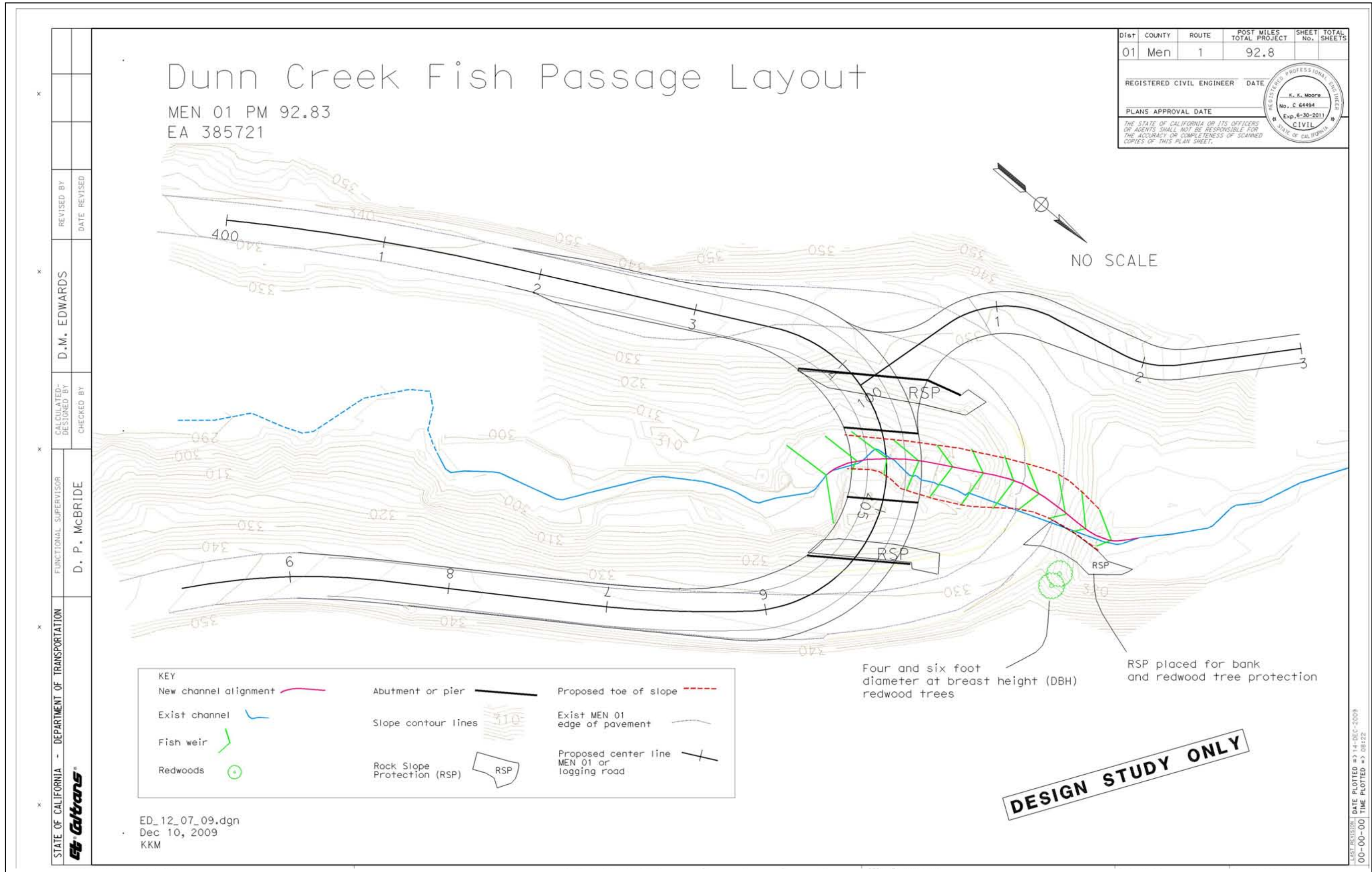
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Figure 2. Project Vicinity Map

vicinity.dgn 12/1/2009 4:45:18 PM

Figure 2. Project Vicinity Map





**Figure 3. Fish Passage Design**

**Figure 3. Fish Passage Design**





**Figure 4. Fish Weir Example**



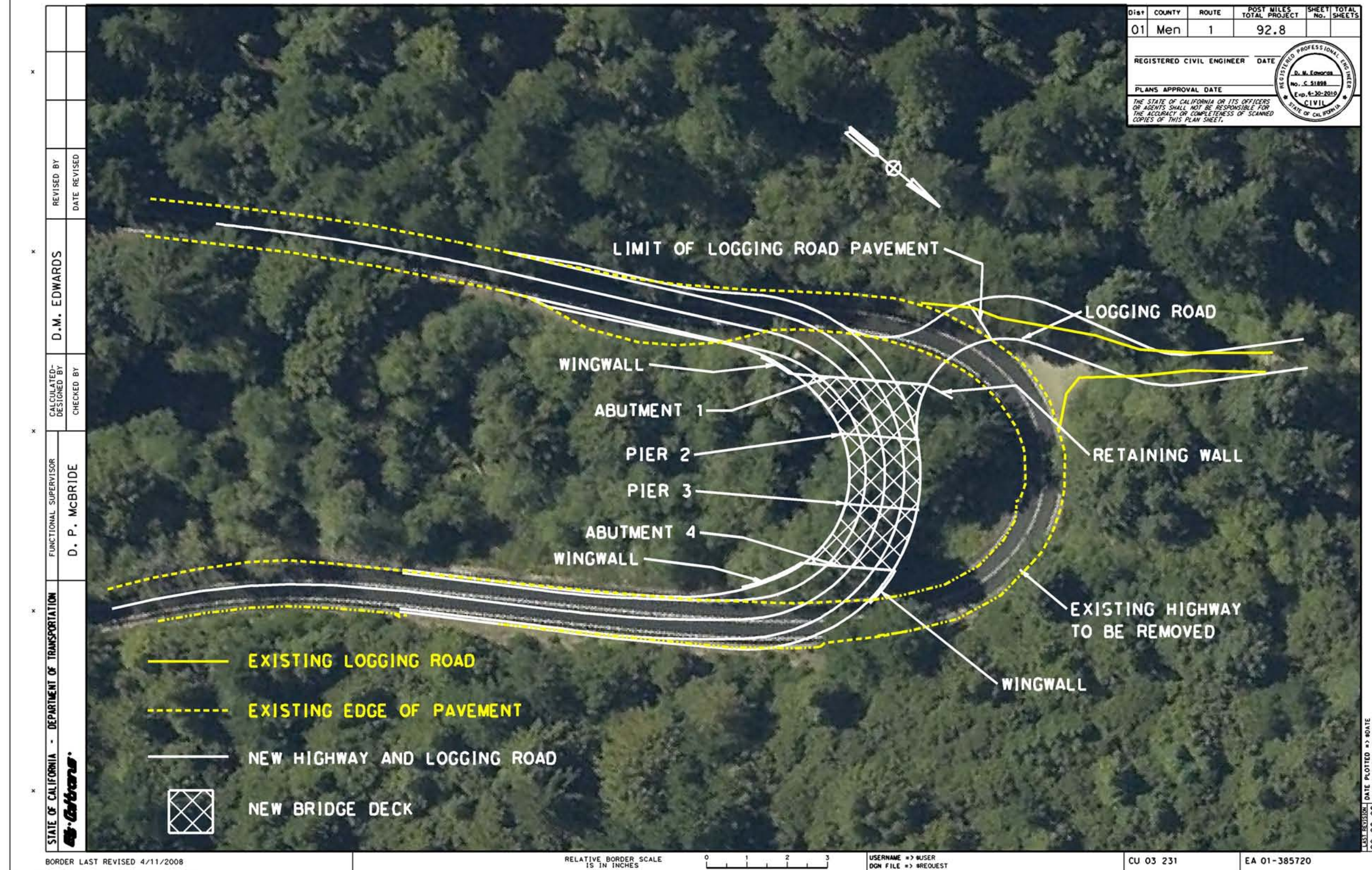


Figure 5. Bridge Design Layout

Figure 5. Bridge Design Layout



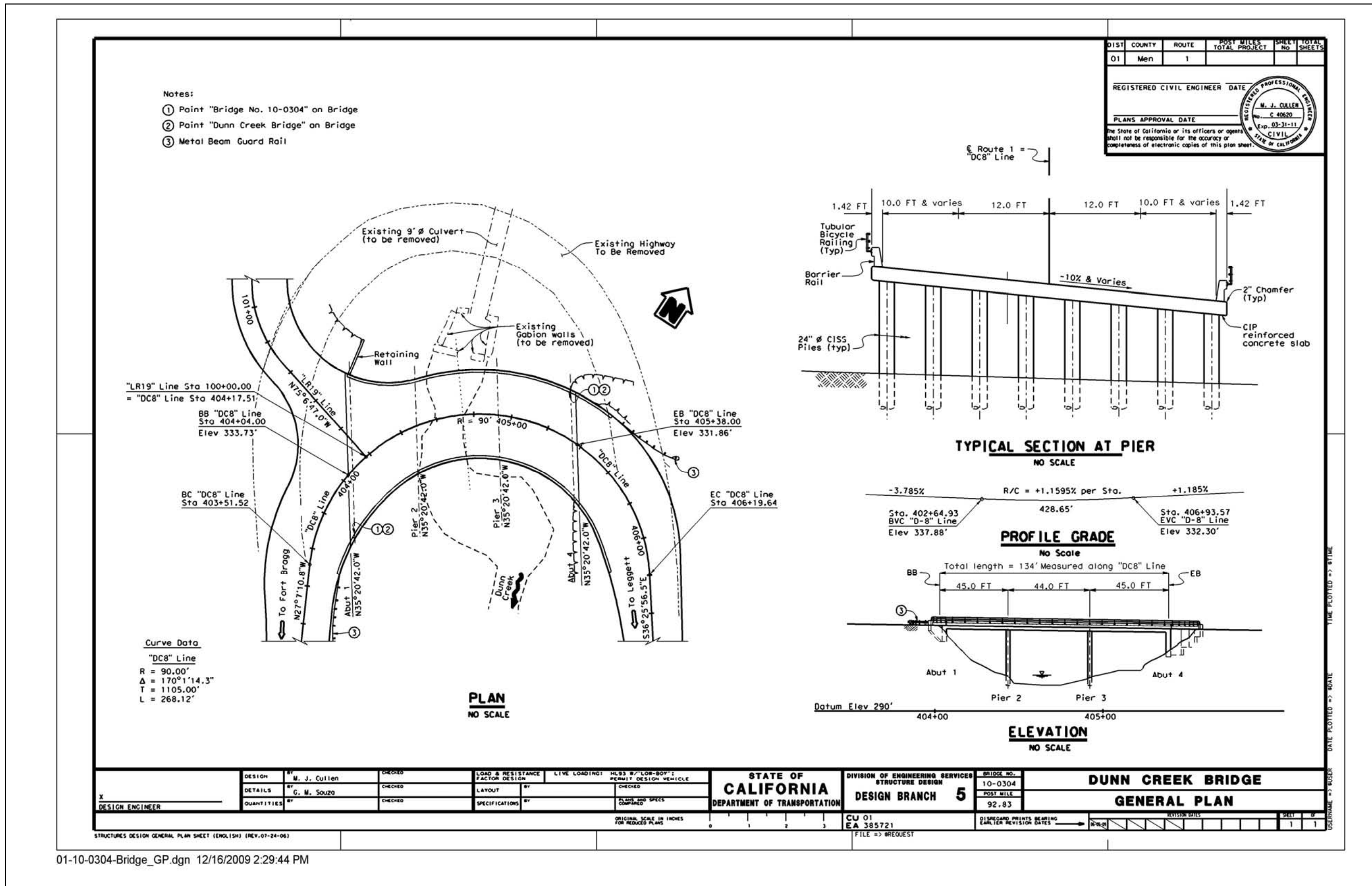


Figure 6. Bridge General Plan Layout with Typical Cross-Section



## Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- Mandatory Findings of Significance



## **California Environmental Quality Act Checklist**

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

A brief explanation of each California Environmental Quality Act checklist determination follows each checklist item. The checklist is followed by a focused discussion of the potential biological, water quality, and aesthetic issues relating to this project.



Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

**I. AESTHETICS** — Would the project:

- |  |                          |                          |                                     |                                     |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| <i>See aesthetic resources discussion on page 41.</i>  |                          |                          |                                     |                                     |
| d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**“No Impact” determinations in this section are based on the Visual Impact Assessment, March 2010.**

**II. AGRICULTURE RESOURCES** — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**“No Impact” determinations in this section are based on various field reviews in 2009.**

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

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

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

d) Expose sensitive receptors to substantial pollutant concentrations?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determinations in this section are based on the Air Quality Checklist, December 2009.***

*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 and transitory 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 Game or U.S. Fish and Wildlife Service?

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

***Temporary impacts may occur on Federal and State listed fish species—see biological discussion on page 31.***

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

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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***Temporary impacts may occur on Federal and State listed fish species—see biological discussion on page 31.***

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determination is based on the Natural Environmental Study (NES), February 2010.***

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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corridors, or impede the use of native wildlife nursery sites?

**Temporary impacts may occur on Federal and State listed fish species—see biological discussion on page 31.**

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

**“No Impact” determination is based on the Natural Environmental Study (NES), February 2010.**

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

**“No Impact” determination is based on the Natural Environmental Study (NES), February 2010.**

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

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

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

**“No Impact” determinations in this section are based on the Historic Property Survey Report, January 2010.**

**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 impact with mitigation	Less than significant impact	No impact
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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 onsite or offsite 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?

***“No Impact” determinations in this section are based on a Geotechnical Report (May2009) and on conversations with the project Geotechnical Engineer (December 2009).***

**VII. HAZARDS AND HAZARDOUS MATERIALS —**

Would the project:

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

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

***“No Impact” determinations in this section are based on a hazardous waste Initial Site Assessment, December 2009.***

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?

***A “No Impact” determination is based on the project not being located in the vicinity of an airport.***

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**A “No Impact” determination is based on the project not being located in the vicinity of a private airstrip.**

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**A “No Impact” determination is based on the expectation that the project would improve emergency response by improving the highway.**

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**“No Impact” determination is based on the scope and location of the project.**

**VIII. HYDROLOGY AND WATER QUALITY —**

Would the project:

a) Violate any water quality standards or waste discharge requirements?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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**See water quality discussion on page 43.**

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 that would not support existing land uses or planned uses for which permits have been granted)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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 that would result in substantial erosion or siltation on- or offsite?

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

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

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

f) Otherwise substantially degrade water quality?

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

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

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

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

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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j) Result in inundation by a seiche, tsunami, or mudflow?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determinations in this section are based on the Water Quality report, January 2010.***

**IX. LAND USE AND PLANNING** — Would the project:

a) Physically divide an established community?

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

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determinations in this section are based on the scope and location of the project.***

**X. MINERAL RESOURCES** — Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determinations in this section are based on the scope and location of the project.***

**XI. NOISE** — Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

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

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determinations in this section are based on the scope and location of the project. The project is not increasing highway capacity and there are no known noise receptors within several miles.***

**XII. POPULATION AND HOUSING —**

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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***“No Impact” determinations in this section are based on the scope and location of the project.***

**XIII. PUBLIC SERVICES —**

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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

**XIV. RECREATION —**

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

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

**XV. TRANSPORTATION/TRAFFIC —** Would the project:

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| f) Result in inadequate parking capacity?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

**XVI. UTILITY AND SERVICE SYSTEMS —** Would the project:

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

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

**XVII. MANDATORY FINDINGS OF SIGNIFICANCE —**

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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## **Affected Environment, Environmental Consequences, and Mitigation Measures**

### **Biological Resources**

This section evaluates the project's potential to affect biological resources within the project area. A Natural Environmental Study was completed in January 2010, and is available for public review.

### ***Regulatory Setting***

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA/NMFS) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of formal consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct."

Essential Fish Habitat (EFH) has been defined by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) for federally managed species as "those waters and substrate necessary for fish for spawning, breeding, feeding, or growth to maturity". The Magnuson-Stevens Act requires federal fishery management plans to describe this habitat essential to the fish being managed and describe threats to that habitat from both fishing and non-fishing activities. In addition, in order to protect this EFH, federal agencies are required to consult with the NOAA/NMFS on activities that may adversely affect EFH.

EFH for coho and chinook salmon is managed by the Pacific Fishery Management Council which has defined EFH for these species as all those streams, lakes, ponds,

wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California.

California has enacted a law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. “Take” is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Game. For projects requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Game may authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

### ***Affected Environment***

The project area is situated within California’s North Coastal Forest, at an elevation of 330 to 340 feet above sea level. The topography of the area consists of sharp ridges and deep ravines, and the climate is classic Mediterranean characterized by wet winters and dry summers. The Western Regional Climate Center data for Wheeler Station indicates that the project vicinity receives 54 inches of rain per year and experiences average annual temperatures between 46 and 60 degrees Fahrenheit.

Mixed conifer forest dominates the Dunn Creek watershed. The forest adjacent to the project limits is dominated by redwood (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*), with tan oak (*Lithocarpus densiflorus* var. *densiflorus*), cascara (*Rhamnus purshiana*), and red alder (*Alnus rubra*) also present in the canopy layer. The shrub layer of the adjacent forest is dominated by California huckleberry (*Vaccinium ovatum*) and salal (*Gaultheria shallon*). Along the creek, the shrub layer is dominated by stink currant (*Ribes bracteosum*), salmonberry (*Rubus spectabilis*),

thimbleberry (*Rubus parviflorus*), and red elderberry (*Sambucus racemosa*). The herb layer is dominated by western sword fern (*Polystichum munitum*), with redwood sorrel (*Oxalis oregana*), fringe cups (*Tellima grandiflora*), stinging nettle (*Urtica dioica*), hedge nettle (*Stachys adjugoides* var. *rigida*), and iris (*Iris* sp.).

Dunn Creek is a tributary to the North Fork of Cottaneva Creek, tributary to Cottaneva Creek, which drains to the Pacific Ocean. According to the United States Geologic Service (USGS) Hales Grove 7.5 minute quadrangle, Dunn Creek is a second order stream (result of two first order streams converging together; a first order stream is a stream that no other streams feed into), and has approximately 1.8 miles of blue-line stream (water flows all or most of the year). Dunn Creek drains a watershed of approximately 2.0 square miles, with elevations ranging from approximately 270 feet at the mouth of the creek to 1,100 feet in the headwater areas. The watershed is primarily privately owned and is managed for timber production.

### ***Potential Effects***

#### **Habitat Creation and Temporary Stream and Riparian Impacts**

The project would have a total disturbed soil area (TDSA) of 1.5 acres (see Figure 7, Area of Potential Impact, page 39). Included within the 1.5 acres are 0.56 acres of currently paved highway and 0.08 acres of existing logging road, resulting in a temporary effect on 0.86 acres of previously undisturbed soil area. The water diversion set-up area (see Figure 7, page 39) is 0.07 acres and would have no heavy equipment related ground disturbing activities. Work within this area would include the building of a temporary sandbag dam and the temporary installation of a water pump and water diversion piping. During construction, water would be diverted along approximately 350 linear feet of creek.

Fish weir installations would occur within the TDSA, resulting in the temporary disturbance of 0.17 acres of creek bed. This 0.17 acres is based on the length of creek disturbance (300 linear feet) times the average bank-full width of the creek (25 feet), and includes the area under the existing road prism and existing culvert (87 feet long).

As part of the project, the existing highway, highway fill and culvert would be removed from the channel of Dunn Creek. The removal of the highway would result in the excavation of 4,850 cubic yards of fill from the creek channel, and would provide for the creation of 0.14 acres of new riparian habitat above the creek's

ordinary high-water mark (OHWM, as defined by the United States Army Corps of Engineers), 0.05 acres of new creek habitat below the OHWM, and 87 new linear feet of stream habitat. In addition, by providing fish passage the project would allow fish to access up to nearly one mile (4,990 feet) of creek habitat (California Department of Fish and Game Stream Inventory Report for Dunn Creek. Eureka, California, 2008) above the existing culvert inlet. Further, the project would create a corridor habitat under the highway for wildlife, resulting in less potential for animal mortality from vehicle strikes.

The project would remove 0.214 acres of existing highway pavement and add 0.115 acres of new highway pavement, resulting in a net increase of 0.099 acres of new habitat area.

Tree Removal

The project proposes to install the bridge along a new highway alignment. A new alignment is necessary in order to prevent the need for complete highway closure of up to nine months to trucks and recreation vehicles. The new highway/bridge alignment was designed as close as possible to the existing highway alignment, and design measures were included to avoid and minimize tree and creek impacts. As part of this fish passage project, 59 trees (mostly smaller than 2.0-foot diameter at breast height--DBH) would need to be removed (see Table 1 below, Proposed Tree Removal). Twenty-eight trees are 1-foot or less DBH, 23 trees are between 1.1 and 2.0 feet DBH, five trees are between 2.1 and 2.5-foot DBH, and three trees are 3-foot or greater DBH.

<b>Diameter at Breast Height (DBH)</b>	<b>Redwoods</b>	<b>Alders</b>	<b>Douglas fir</b>
1 foot or less	14	13	1
1.1 to 1.5 feet	6	5	-
1.6 to 2.0 feet	4	6	2
2.1 to 2.5 feet	2	3	-
3 feet	1	-	-
3.5 feet	1	-	-
4 feet	1	-	-
<b>Total Trees</b>	29	27	3

**Table 1. Proposed Tree Removal**

### Fish Species

The project has the potential to affect Federal and State listed species: coho salmon (*Oncorhynchus kisutch*), chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*Oncorhynchus mykiss*). Potential impacts to these species would be temporary and would occur as the result of creek dewatering/diversion and potential subsequent fish relocation efforts during construction. Given the project would allow fish to access up to 4,990 additional feet of creek habitat, the project is expected to have substantial long-term benefits for these listed fish species. Section 7 consultation with the National Oceanographic and Atmospheric Administration National Marine Fisheries Service is currently in progress.

### Bird Species

An onsite review (December 15, 2009) with the United States Fish and Wildlife Service (USFWS) indicated there is little potential for the project to affect the northern spotted owl (*Strix occidentalis caurina*) or marbled murrelet (*Brachyramphus marmoratus*). The USFWS has concluded that Informal Section 7 consultation for indirect effects on the northern spotted owl (foraging and dispersal habitat) would be necessary (currently in progress), but that no Section 7 consultation for the marbled murrelet is required.

### Plant Species

Spring and summer plant surveys (completed during 2009) indicated that no Federal or State listed threatened or endangered plant species exist within the project limits.

One sensitive plant species was discovered during botanical surveys. *Mitella caulescens* (leafy-stemmed miterwort) was observed along Dunn Creek and is a California Native Plant Society (CNPS) list 4.2 species. This designation denotes the plant as, "limited distribution; fairly endangered in California."

No other sensitive plant species were observed during the surveys or are expected within the project limits.

## *Avoidance, Minimization, and/or Mitigation Measures*

### Temporary Creek Impacts

Impacts to the creek would be minimized as much as possible. For water quality purposes, construction activities within the creek would be confined to the seasonally dry period of June 15 to October 31. Creek flow would be temporarily diverted around the work area during construction and returned to the stream below the work site. Any temporary artificial obstruction within the Creek would be built from materials with no potential to increase siltation within the stream.

Just prior to the start of construction, the segment of stream affected by the project would be surveyed for wildlife by a qualified biologist, with any discovered species relocated along the creek outside of the project work limits.

### Tree Removal

During construction, efforts would be made to “work-around” trees in order to avoid and minimize tree removal and/or tree damage. Rock slope protection (RSP) would be placed at the northern limits of the project to prevent the removal of a four-foot diameter at breast height (DBH) redwood tree and a six-foot DBH redwood tree (see Figure 3, Fish Passage Design, page 9). A Revegetation Plan would be prepared and implemented as part of the project. The plan would include the revegetation (and monitoring) of all disturbed soil areas above the ordinary high-water mark (OHWM) with native redwood, Douglas fir, and alder trees.

### Fish Species

In order to avoid and minimize potential temporary effects on listed fish species, critical fish habitat and essential fish habitat, the following measures would be included:

- Where appropriate, measures would be implemented to minimize material/soil from falling down the slopes and entering the creek bed;
- Where appropriate, barriers would be placed downstream of construction activities in order to prevent material/soil from entering the creek outside of the work limits. Material/soil buildup behind the barriers would be periodically removed;

- Excess material/soil associated with construction would be removed at the end of construction;
- Water flow in Dunn Creek would be diverted around the work area.
- A qualified fisheries biologist would be present at the site when the creek diversion is initially established to ensure sedimentation is minimized;
- If pumps are used to lower the water level, they would be double screened to prevent fish from being pumped out with the water;
- Any fish remaining in the diverted work area would be removed and relocated by a qualified fisheries biologist;
- Bridge design includes the use of cast in drilled holes (CIDH) piles, eliminating the use of an impact hammer for pile driving;
- Removal of trees providing shade over the stream has been minimized as much as possible; and
- Revegetation efforts on the slopes would include erosion control and planting with a regionally appropriate California native seed mix and seedlings of plant species found on the site.

### Bird Species

In order to avoid and minimize potential effects on the northern spotted owl, marbled murrelet, and migratory birds the following measures would be included:

- No suitable nesting habitat for the northern spotted owl or the marbled murrelet would be removed.
- Impacts to suitable northern spotted owl dispersal and foraging habitat would be mitigated by replanting the affected areas with native plant material indigenous to the area. Revegetation efforts would also help to offset the temporal loss of habitat for migratory birds.
- In order to avoid impacts on nesting migratory birds, vegetation would be removed between September 1 and February 28. If vegetation has not been cleared outside of the breeding season (March 1-August 31), and construction is to begin after March 1, the following guidelines would be observed:
  - Surveys would be conducted (no earlier than two weeks prior to construction) by a qualified biologist to identify if birds are nesting within the project limits.
  - If bird nests are found during pre-construction surveys:

- The areas would be marked as environmentally sensitive and nests would be monitored by a qualified biologist for disturbance during construction.
- Buffer areas would be delineated around trees with active nests, and bird disturbing construction activities within the buffer area would not occur.
- Noise levels during construction are not anticipated to affect the northern spotted owl or marbled murrelet due to the low level of anticipated construction noise and the distance between the project locations and the nearest known northern spotted owl activity centers and suitable nesting habitat for both species.

### Plant Species

During construction, efforts would be made to minimize effects to *Mitella caulescens*. According to informal conversations with the California Department of Fish and Game, the plant is not very sensitive to disturbance, and would have a high likelihood of successfully re-colonizing the site after project completion. No additional measures are proposed for impacts to plant species.

### ***Cumulative Effects***

Given that this fish passage project is a mitigation effort to improve fish habitat, many long-term beneficial effects on fish are anticipated. Based on the scope of the project and the proposed avoidance, minimization and restoration measures, no cumulative impacts are anticipated with the project.



Figure 7. Area of Potential Impact

Figure7. Area of Potential Impact



## **Aesthetic Resources**

This section evaluates the project's potential to impact visual resources within the project area. A Visual Impact Assessment was completed in March 2010, and is available for public review.

## ***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 Section 21001(b)]

## ***Affected Environment***

The Dunn Creek Fish Passage Project is located on a rural stretch of State Route 1. State Route 1 crosses Dunn Creek approximately 6.0 miles north and inland from the Pacific Ocean coastline and 13 miles west of the town of Leggett and State Route 101. This 19-mile stretch of highway between the ocean and Leggett is a narrow, winding road, traversing along the Coast Mountain Range. The coastal mountains are thickly forested with redwoods and Douglas fir, with alder and willow trees generally found along creek beds. State Route 1 is considered a scenic highway, offering spectacular views of the Pacific Ocean and coastline, while providing access to the famous "Redwood Corridor" along State Route 101. State Route 1 and the "Redwood Corridor" are considered a travel destination due to their natural beauty.

Within the project limits, State Route 1 is 25 feet wide and makes a sharp 90-degree U-turn as it crosses over Dunn Creek. The Dunn Creek drainage is entirely within the steep slopes of a redwood forest. The tree canopy opens up enough for sunlight to support a few alders growing near the road by the creek.

## ***Potential Impacts***

The proposed project would change the features of the existing visual environment within the project limits. These changes would include:

- Relocating the highway alignment 100 feet downstream of the existing highway alignment;
- Using concrete (for the bridge deck) versus the existing highway asphalt pavement (difference in construction material used and color);

- Installing a bridge that would be almost twice as wide (47 feet) as the existing highway;
- The introduction of bridge piers in the highway travelers' viewshed;
- The introduction of a three foot high barrier rail with an added 16 inch bicycle rail;
- Realigning the existing logging road;
- Partially paving the existing logging road; and
- Tree removal to accommodate the new bridge/highway realignment

The Visual Impact Analysis indicated that the change in the highway and logging road alignment, bridge deck material/color, and partial paving of the logging road would be a moderate visual impact. The bridge piers would only be visible to highway travelers for a short duration along the inside curve and would not be considered a visual impact.

The project would require the removal of 59 trees. The majority of the trees are alders and redwoods, with some Douglas fir (see Table 1, Proposed Tree Removal, page 34). The removal of the trees would open up the area to more sunlight. In addition, after the existing highway and highway fill are removed, the newly created creek banks would be temporarily void of trees and vegetation, which would be unnatural in a redwood creekside setting. The project would, though, improve the visual appearance of the creek bed (see Figure 4, Fish Weir Example, on page 11). The Visual Impact Analysis indicated the temporary loss of vegetation would be a low-moderate visual impact.

***Avoidance, Minimization, and/or Mitigation Measures***

In order to reduce the visual impacts associated with the introduction of a concrete bridge with bridge rails, the project would study the feasibility of tinting the bridge concrete to blend in with the surrounding landscape and study the feasibility of installing see-through barrier rail on such a tight radius curved bridge.

The highway/bridge was aligned as close as possible to the original highway alignment, which reduced the number of trees needing to be removed. In addition, the new creek alignment was “threaded” around trees to minimize tree take, and Rock Slope Protection (RSP) was included in the design to prevent the need to remove two large redwood trees (a four and six foot at dbh, see Figure 3, Fish Passage Design, page 9). Further, a Revegetation Plan, including all proposed revegetation,

monitoring requirements, planting objectives, and success criteria would be prepared by a qualified person for the project. The plan would identify the disturbed soil areas above the ordinary high-water mark (OHWM) for planting, as well as include a plant palate, selecting plants found in redwood forest plant communities. The palate would specifically focus on species found within and near the project limits.

### ***Cumulative Effects***

Due to avoidance, minimization, and enhancement measures, cumulative impacts to visual resources would not be anticipated with the project.

### **Water Quality**

This section evaluates the project's potential to impact water resources within the project area. A Water Quality Assessment was completed in January 2010, and is available for public review.

### ***Regulatory Setting***

Section 401 of the Clean Water Act requires water quality certification from the State Water Resource Control Board (SWRCB) or a Regional Water Quality Control Board (RWQCB) when the project requires a Federal permit. Typically this means a Clean Water Act Section 404 permit to discharge dredge or fill into a water of the United States, or a permit from the Coast Guard to construct a bridge or causeway over a navigable water of the United States under the Rivers and Harbors Act.

Along with Clean Water Act Section 401, Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and the nine RWQCBs. To ensure compliance with Section 402, the SWRCB has developed and issued Caltrans an NPDES Statewide Storm Water Permit to regulate storm water and non-storm water discharges from Caltrans right-of-way, properties and facilities. This same permit also allows storm water and non-storm water discharges into waters of the State pursuant to the Porter-Cologne Water Quality Act.

Storm water discharges from the Caltrans construction activities disturbing one acre or more of soil are permitted under the Caltrans Statewide Storm Water NPDES permit. These discharges must also comply with the substantive provisions of the SWRCB's Statewide General Construction Permit. Non-Caltrans construction

projects (encroachments) are permitted and regulated by the SWRCB's Statewide General Construction Permit. All construction projects exceeding one acre or more of disturbed soil require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. The SWPPP, which identifies construction activities that may cause discharges of pollutants or waste into waters of the United States or waters of the State, as well as measures to control these pollutants, is prepared by the construction contractor and is subject to Caltrans review and approval.

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) have jurisdiction to enforce the Porter-Cologne Act to protect groundwater quality. Groundwater is not regulated by Federal law, but is regulated under the state's Porter-Cologne Act.

### ***Affected Environment***

Dunn Creek drains approximately 1,360 acres of coastal forestlands in Mendocino County. The project area is at an elevation of approximately 335 feet above sea level, and is surrounded by deep ravines, sharp ridges, and thick forest. As noted earlier in this report, Dunn Creek is a tributary to the North Fork of Cottaneva Creek, which is located approximately 0.5 miles downstream from the project limits. From there, the North Fork of Cottaneva Creek travels approximately 0.8 miles downstream where it joins the main branch of Cottaneva Creek. Cottaneva Creek then travels approximately 4.5 miles where it drains into the Pacific Ocean.

Neither Dunn Creek nor Cottaneva Creek are listed as impaired on the 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments Requiring Total Maximum Daily Loads.

The project is located within the Mendocino Coast Hydrologic Unit, Rockport Hydrologic Area, Wages Creek Hydrologic Sub-Areas (HAS #113.12), and within the jurisdictional boundary of the North Coast Regional Water Quality Board (NCRWQCB). The NCRWQCB has adopted a Basin Plan for the North Coast Region, which includes the area within the project limits. The Basin Plan defines beneficial uses of receiving waters, sets forth water quality objectives to protect and enhance these beneficial uses, and formulates water management programs to control discharges to receiving waters. Though not a tributary to Wages Creek, Dunn Creek is located within the Wages Creek Hydrologic Sub-Areas. The NCRWQB has

designated the following as “existing” beneficial uses for the Wages Creek Hydrologic Sub-Areas:

- Municipal and Domestic Supply
- Agricultural Supply
- Industrial Service Supply
- Groundwater Recharge
- Freshwater Replenishment
- Navigation (NAV)
- Water Contact Recreation
- Non-Contact Recreation
- Commercial and Sport Fishing
- Cold Freshwater Habitat
- Wildlife Habitat
- Rare, Threatened, or Endangered Species
- Migration of Aquatic Organisms
- Spawning, Reproduction, and/or Early Development

The NCRWQCB has the authority to implement water quality protection standards through the issuance of permits to protect waters of the state. Water Quality Objectives for the North Coast Region are specified in the Water Quality Control Plan for the North Coast Region (Basin Plan) prepared in compliance with the Federal Clean Water Act and the State Porter-Cologne Water Quality Control Act. The Basin Plan establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of both surface waters and groundwater.

### ***Potential Effects***

Analysis of the specific hydraulic conditions at the project site, and discussions with the North Coast Regional Water Quality Control Board (NCRWQCB) staff have identified the following water quality concerns related to the project:

- Sediment and other discharges related to construction, operation, and dewatering;
- Dredge and fill impacts to jurisdictional waters;
- Potential for high pH discharges for water that has contacted wet concrete; and
- Accidental leaks, including fuel, oil or other hazardous materials, during construction.

The project would have a total disturbed soil area of 1.5 acres (see Figure 7, Area of Potential Impact, page 39). This includes the area along the existing highway alignment, the area along the newly proposed highway/bridge alignment, the area for construction access, and the area where the fish passage structures and bridge piers would be installed. The removal of the existing highway alignment would result in the excavation of 4,850 cubic yards of material from the channel of Dunn Creek. The removal of this material (e.g., highway fill, existing culvert, etc.) would result in a total of 0.19 acres of additional riparian and creek habitat. The removal of the material from the creek and the addition of 0.19 acres of riparian and creek habitat would be expected to have a long-term beneficial effect on water quality.

As way of background, even though the area beneath the proposed bridge deck would consist of soil and vegetation (be permeable, not paved), for water quality analysis purposes the bridge deck area is included in the quantity of impervious surface area (paved area) because it would prevent rain from falling directly on the soil beneath the bridge deck. The project would remove 0.214 acres of existing highway pavement area and add 0.115 acres of new pavement area, for a net decrease in paved area of 0.099 acres. Adding the bridge deck area (0.139 acres) to the total impervious surface area results in a net increase in impervious surface area by 0.04 acres. The 0.04-acre increase in impervious surface area is primarily generated from paving the entrance of the existing logging road. The increase of 0.04 acres in impervious surface area, as far as potential storm water run-off impacts, is considered negligible. No downstream effects are anticipated, as the increased storm water runoff from the increase in impervious surface is small (0.04 acres) compared to that of the Dunn Creek watershed (1360 acres).

In general, this fish passage project is expected to have long-term water quality benefits by significantly enhancing receiving the waters for the following beneficial uses: Commercial and Sport Fishing; Rare, Threatened, or Endangered Species; Spawning, Reproduction, and/or Early Development.

***Avoidance, Minimization, and/or Mitigation Measures***

In order to avoid and minimize the potential for sedimentation and other construction related impacts, the project would be constructed using several erosion and water quality control practices. The Best Management Practices (BMPs) would include the following:

- Temporary sediment control (e.g. silt fences, fiber rolls, and straw bale barriers);
- Temporary soil stabilization (e.g. hydraulic mulching, hydroseeding, and straw mulch);
- Tracking control (stabilized construction entrance/exit, and stabilized construction roadway);
- Non-storm water management (e.g., water conservation practices, clear water diversion, concrete curing, and concrete finishing);
- Waste management and materials pollution control (material delivery and storage, material use, stockpile management, spill prevention and control, solid waste management, hazardous waste management, concrete waste management, and liquid waste management);
- Specific construction site BMPs to address potential discharges of water with a high pH from contact with wet concrete would be specified by the Project Engineer with concurrence by the Construction Storm Water Coordinator for inclusion in the contract; and
- Preservation of existing vegetation, concentrated flow conveyance systems, and slope/surface protection.

In addition, the Project Engineer would be required to evaluate permanent treatment BMPs to the standard of Maximum Extent Practicable (MEP) in accordance with the Caltrans NPDES Permit. Because of limited available space and steep terrain at the project site, the placement of post construction treatment BMPs is not likely, but other strategies for reducing sedimentation would be pursued. For example, conveying storm water off the bridge deck to adjacent armored slopes and maximizing sheet flow patterns from impervious surfaces onto available vegetated surfaces should minimize storm water impacts.

### ***Cumulative Impacts***

Given this fish passage project would result in a net increase in riparian and creek habitat, long-term beneficial effects on water quality would be anticipated. Based on the scope of the project and due to avoidance, minimization and restoration measures, cumulative impacts on water quality would not be anticipated with the project.

## ***Climate Change***

This section evaluates the project's potential to contribute to climate change.

### ***Regulatory Setting***

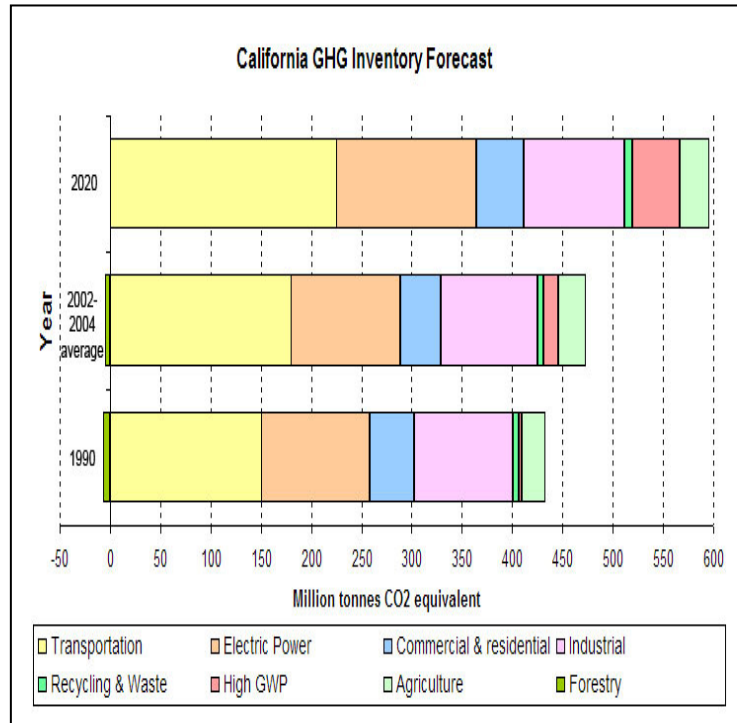
In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with Greenhouse Gas (GHG) emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32, signed September 27, 2006), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 (signed October 18, 2006) further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

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

According to recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in California Environmental Quality Act (CEQA) Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.

In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. As part of its supporting documentation for the Draft Scoping Plan,

CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.



**Figure 8. California Greenhouse Gas Inventory**  
 Taken from : <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing Greenhouse Gas (GHG) emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation (see Climate Action Program at Caltrans (December 2006), Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. This document can be found at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>

### ***Project Analysis***

This is a fish passage project, and would not increase or change long-term traffic. Therefore, no increase in operational GHG emissions is anticipated to occur with the project.

### **Construction Emissions**

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. Construction of this project would produce a small amount of GHG emissions associated with the operation of construction equipment and construction vehicles. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be minimized to some degree by longer intervals between maintenance and rehabilitation events.

### **AB 32 Compliance**

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement the Governor's Executive Orders 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. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion.

As part of the Climate Action Program at Caltrans (December 2006, <http://www.dot.ca.gov/docs/ClimateReport.pdf>), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high

density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by EPA and CARB. Lastly, the use of alternative fuels is also being considered; the Caltrans is participating in funding for alternative fuel research at the UC Davis.

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

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

On August 3, 2009, the Natural Resources Agency, in cooperation and partnership with multiple state agencies, released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft,

including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November 2008 [Executive Order S-13-08](#) that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

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

## **Right of Way**

A Temporary Construction Easement would be obtained for 0.8 acres from Assessor Parcel Number 012-510-20 on the north side of the highway to provide a staging area for the bridge and fish passage installation. The nearest residential parcel is located three miles to the east. No relocations or community impacts are anticipated.

## Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including Project Development Team meetings, interagency coordination meetings, consultations with the United States Fish and Wildlife Service, the National Oceanic and Atmospheric Administration National Marine Fisheries Service, and the California Department of Fish and Game.

In addition to the meetings listed below, Caltrans has been conducting ongoing email and phone correspondence with external resource agencies and with Soper Wheeler Logging (adjacent property owners) representatives.

- |                    |   |
|--------------------|---|
| December 15, 2009  | Onsite field meeting with the U. S. Fish and Wildlife Service.  |
| June 24, 2009      | Onsite field meeting with the California Department of Fish and Game.   |
| September 25, 2009 | Onsite field meeting with the California North Coast Regional Water Quality Control Board   |
| August 26, 2008    | Onsite field meeting with the California Department of Fish and Game and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service. |
| September 15, 2008 | Onsite field meeting with the California Department of Fish and Game and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service. |
| January 2, 2008    | Onsite field meeting with the California Department of Fish and Game.   |
| April 1, 2007      | Phone and email correspondence with a Humboldt State University Environmental Resources Engineer.   |
| January 9, 2007    | Onsite field meeting with the California Department of Fish and Game.   |



## List of Preparers

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

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**Michael Cullen**, Structures Design Engineer. Contribution: Bridge Design.

**Dianne Edwards**, Project Engineer. Contribution: Highway and Bridge Design.

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**Kevin Flannery**, Associate Environmental Planner. Contribution: Document Peer Review.

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

**Mark Melani**, Associate Environmental Planner. Contribution: Initial Site Assessment (Hazardous Materials Report).

**Kemset Moore**, Hydraulics Engineer. Contribution: Fish Passage Design.

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