Fort Goff Creek Fish Passage Project

SISKIYOU COUNTY, CALIFORNIA
02-SIS-96-PM 56.0
02-4E6300
EFIS#: 02-1200-0010

Initial Study with Proposed Negative Declaration

Prepared by the
State of California Department of Transportation District 2
1657 Riverside Drive, MS-30
Redding, CA 96001

Caltrans

May 2013

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SCH No.
02-SIS-96-56.0
02-4E6300
EFIS#: 02-200-0010

General Information about This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Draft Initial Study, which examines the potential environmental impacts of the proposed fish passage improvement project on State Route 96, in Siskiyou County. This Initial Study was prepared to comply with the California Environmental Quality Act (CEQA). This document describes the purpose and need for the project, project alternatives, existing conditions, and potential effects from each of the project alternatives.

What should you do?

- Please read this Initial Study
- We welcome your comments. If you have any information or concerns regarding the project, please send your written comments to Caltrans by the deadline. Submit comments via regular mail to:

  California Department of Transportation
  Attention: Brian Humphrey
  North Region Office of Environmental Mgmt.
  1657 Riverside Drive, MS-30
  Redding, CA 96001

- You may also submit comments via e-mail to brian_humphrey@dot.ca.gov
- Submit comments by the deadline: June 7, 2013

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could 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: Equal Employment Opportunity Officer, 1657 Riverside Drive, Redding, CA 96001; (530) 225-3055 Voice, or use the California Relay Service TTY number, (530) 225-2019.

SCH No.
02-SIS-96-PM 56.0
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Fort Goff Creek Fish Passage Project

In Siskiyou County, California on State Route 96
at Post Mile 56.0

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION

Submitted Pursuant to: (State) Division13, California Public Resources Code

STATE OF CALIFORNIA
Department of Transportation

May 3, 2013
Date of Approval

CINDY ANDERSON
Office Chief-North
North Region Environmental Services
California Department of Transportation
CEQA Lead Agency

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SCH No.
02-SIS-96-56.0
02-4E6300
EFIS#: 02-200-0010

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, California Public Resources Code

Project Description

The California Department of Transportation (Caltrans) is proposing to improve fish passage on Fort Goff Creek. The proposed project is located approximately 4 miles west of the community of Seiad Valley in Siskiyou County. The proposed project would include replacing an existing 15-foot diameter culvert under State Route 96 with a single span bridge structure. The project as proposed would improve fish passage on Fort Goff Creek under State Route 96.

Determination

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

- The proposed project is consistent with planning, land use, transportation, housing, emergency services, utilities, and other social and economic factors relevant to the area.

- The proposed project will not have an effect on aesthetics, agriculture, forest resources, air quality, historical and cultural resources, geology and soils, hazardous materials, mineral resources, public services, wild and scenic rivers, or energy resources.

- The proposed project will have a less than significant effect on noise, floodplain, and water quality.

- The proposed project will not have a significant effect on fish and wildlife, riparian habitat, or water quality standards because the following mitigation measures will reduce potential effects to a level below significance.

    - A temporary stream diversion will be utilized to isolate the work area from the flowing stream, while work within the stream channel will take place during the summer/fall low flow period.
    - Any fill material placed within the channel for the temporary stream diversion or temporary detour will consist of clean river run gravel or

streambed material approved by California Department of Fish and Wildlife.

- Fish and amphibian species will be excluded from entering the project limits, while any fish and amphibian species located within the project limits will be relocated outside the project limits.
- Any pumps used for dewatering will have intakes fitted with fish screens.
- Installation of pile casings will avoid percussive pile driving activities.
- A Storm Water Pollution Prevention Plan will be prepared by the contractor, which will include Caltrans' best management practices to minimize potential sediment delivery or chemical contamination from entering Fort Goff Creek and/or the Klamath River.
- Removal of vegetation will be minimized to the extent necessary to construct the project. Following construction, all disturbed stream banks will be planted with native riparian vegetation, while upland ground disturbance will be hydro-seeded.

- The proposed project would improve fish passage for state and federally threatened Southern Oregon/Northern California Coast (SONCC) coho salmon, as well as other anadromous salmonids and other local fish species. The proposed project would also improve passage for other species, such as lamprey, amphibians and terrestrial wildlife.

_____ _____

Cindy Anderson
Office Chief - North
North Region Environmental Services
California Department of Transportation
CEQA Lead Agency

Date

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Chapter 1. Proposed Project

1.1. Project Title

Fort Goff Creek Fish Passage Project

1.2. Lead Agency Name and Address

California Department of Transportation, District 2
1657 Riverside Drive, MS-30
Redding, CA 96001

1.3. Contact Person and Phone Number

Brian Humphrey
Environmental Coordinator
Caltrans, North Region Office of Environmental Management
Redding, CA
Phone (530) 225-2917

1.4. Project Location

The proposed project is located on Fort Goff Creek, approximately 400-500 feet (ft.) upstream of its confluence with the Klamath River, where flows are conveyed under State Route 96 at Post Mile 56.0. Fort Goff Creek is located approximately four miles west of the community of Seiad Valley in Siskiyou County (Figures 1 and 2).

1.5. Project Sponsor's Name and Address

California Department of Transportation, District 2
North Region Office of Environmental Management
1657 Riverside Drive, MS-30
Redding, CA 96001

1.6. Purpose and Need

In addition to California Department of Transportation (Caltrans) funds, Caltrans has also received grant funding from both U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife's (DFW's) Fisheries Restoration Grant Program (FRGP) to replace the existing culvert with a bridge. A Mitigated Negative Declaration pursuant to CEQA has been prepared by DFW to address potential environmental impacts associated with projects funded under DFW's FRGP, which includes the Fort Goff Creek Fish Passage Project.

Purpose

The project proposes to improve fish passage near the mouth of Fort Goff Creek, where a 15 ft. diameter culvert currently conveys flows under State Route 96.

Need

The existing culvert currently restricts steelhead (*Oncorhynchus mykiss*) upstream access to approximately 4 miles of suitable habitat, while restricting coho salmon (*Oncorhynchus kisutch*) and Chinook salmon (*Oncorhynchus tshawytscha)* access to approximately 1.6 miles of suitable habitat. The need to remedy the fish passage barrier at Fort Goff Creek is listed in the National Marine Fisheries Service's (NMFS).

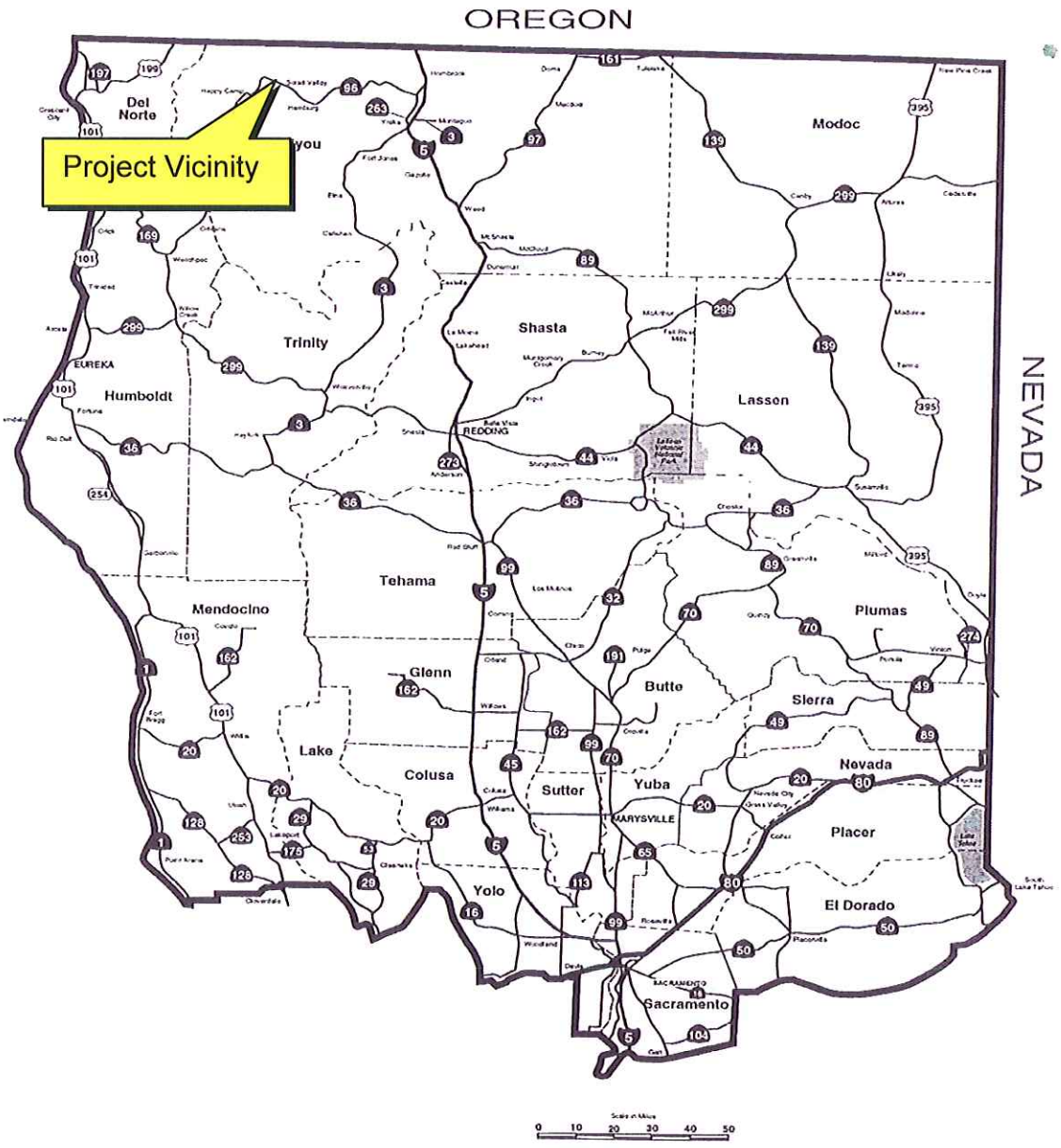


Figure 1. Project Vicinity Map

Caltrans	State of California Department of Transportation	Fort Goff Creek Fish Passage Improvement Project
	SIS-96-PM 56.0 02-4E6300 EFIS#: 02-1200-0010	

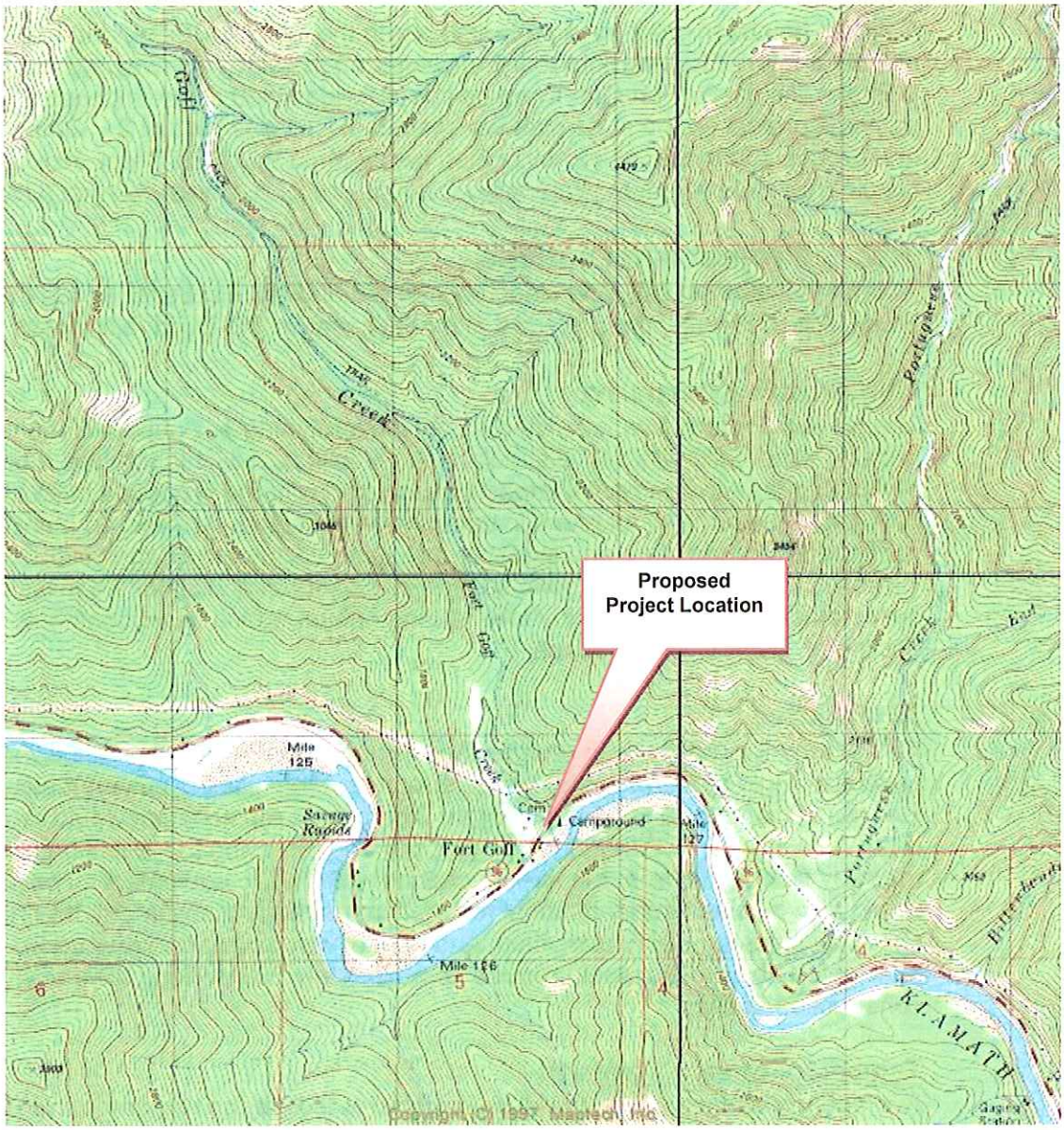


Figure 2. Project Location Map

Caltrans	State of California Department of Transportation	Fort Goff Creek Fish Passage Project
	02-4E630-SIS-96 EFIS#: 02-1200-0010	

"Draft Southern Oregon/Northern California Coast Coho Recovery Plan" (NMFS 2012) and the DFW's "Recovery Strategy for California Coho Salmon" (CDFG 2004).

Caltrans has been working in partnership with the DFW, USFWS, and NMFS to identify and prioritize barriers to fish passage on the state highway system in Caltrans District 2. Fort Goff Creek is currently identified as the highest priority fish passage project on the state highway system in Caltrans District 2. Other agencies and groups supportive of improving fish passage on Fort Goff Creek include the Karuk Tribe, Mid-Klamath Watershed Council, and U.S. Forest Service (USFS).

1.7. Project Alternatives

Two project alternatives have been considered and are discussed in this Initial Study; Alternative "A" the preferred alternative, and a "No-Build" alternative.

"No Build" Alternative

The No-Build Alternative is defined as not implementing any aspect of the proposed project. A no-build alternative should also be considered as it provides a baseline for comparing the environmental impacts associated with the proposed build alternative. This alternative would not result in temporary environmental impacts, but would continue to impede state and federally threatened Southern Oregon Northern California Coasts (SONCC) coho salmon access to an additional 1.6 miles of suitable adult spawning and juvenile rearing habitat, which could contribute to the decline of SONCC coho salmon.

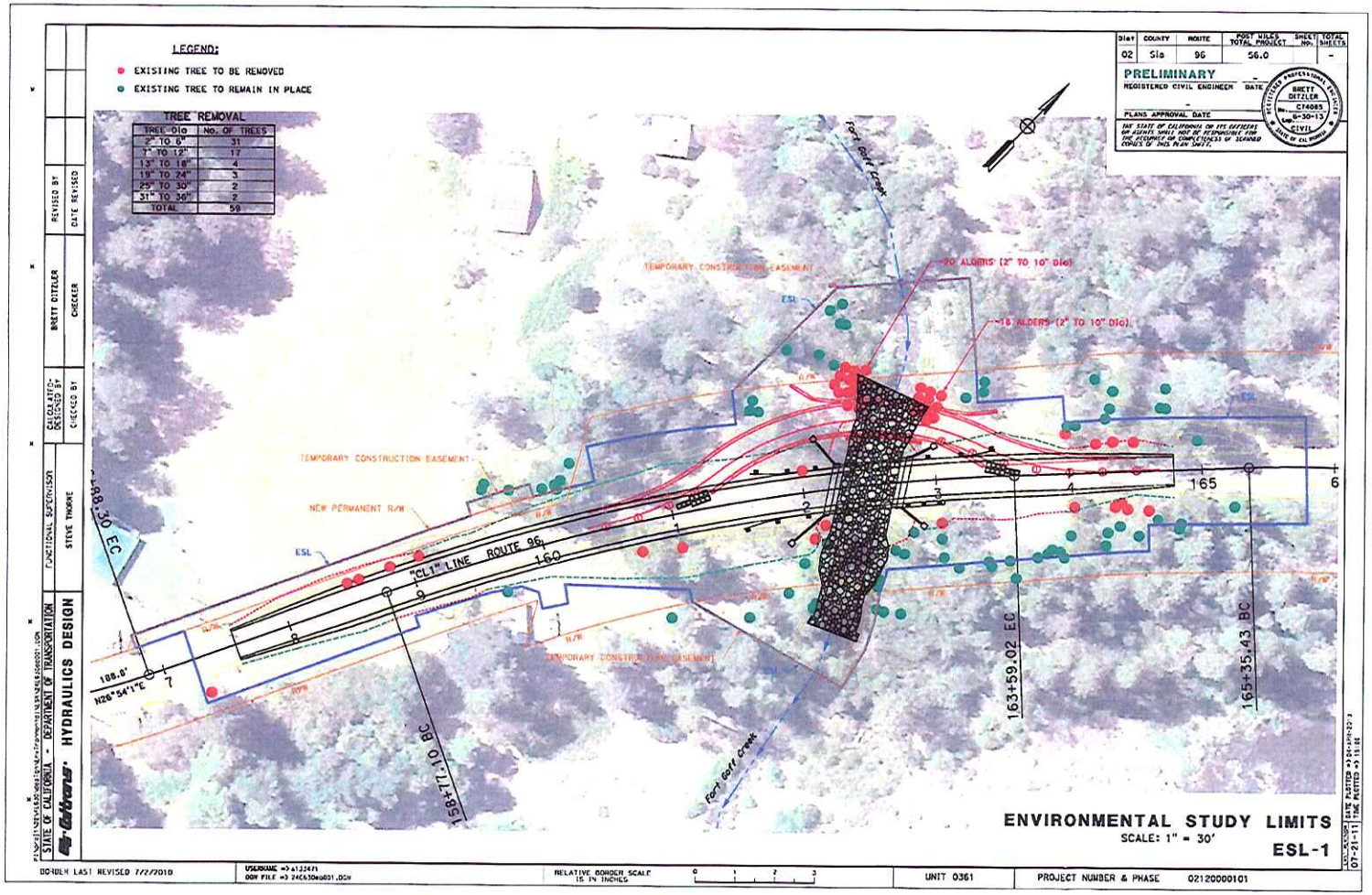
Alternative "A"

This alternative proposes to replace the existing structural steel plate culvert with a concrete single span (no piers) bridge structure. The existing culvert measures 15 feet (ft.) in diameter and 65 ft. in length. The culvert replacement would require diverting stream flow through the project site and removing the existing culvert and roadway fill material from the stream channel with heavy equipment. The project would also involve stream channel restoration, roadway realignment, tree removal, shoulder widening, utility relocation, and right of way acquisition (Figure 3). It is anticipated, the project would require approximately 120 working days over one construction season.

Temporary Stream Diversion

A temporary stream diversion will be required to isolate the work area from the live stream, which will likely be accomplished by diverting flows through the work area using temporary culvert(s) and/or a plastic lined ditch. It is anticipated a gravel berm, sandbags, k-rail, or combination of these would be placed with plastic sheeting upstream of the temporary detour area to divert the stream flows into a temporary pipe culvert(s) and/or plastic lined ditch. The temporary stream diversion would convey stream flows through the construction area and outlet downstream of the work area. If a gravel berm is used to divert stream flows, materials shall consist of clean river run gravel. Following construction, flows will be returned to the stream channel, while clean river run gravel may be left in the stream channel, provided it does not impede stream flow or fish passage, and conforms to the natural channel morphology. If any other materials are used to divert the stream flows, they shall be removed from the stream channel following construction.

Figure 3. Environmental Study Limit Map



Temporary Detour

The proposed culvert removal and bridge construction would require a temporary traffic detour upstream of the existing culvert during construction. The detour would likely consist of a single lane with flashing beacons and stop signs at each end of the detour, which would allow traffic to stop and proceed through the detour when clear.

The detour would either utilize a temporary bridge to span Fort Goff Creek or consist of temporary fill and culverts placed within the channel immediately upstream of the existing culvert. Temporary fill material placed within the stream channel will consist of clean river run gravel or streambed material approved by DFW.

Bridge Structure

The proposed single span bridge structure will measure 38 ft. wide by 60 ft. in length, which would provide a 12 ft. lane and 4 ft. shoulder in each direction (Figure 4). The proposed bridge structure will consist of a pre-cast bridge deck, two pre-cast bridge abutments, and four pre-cast wing walls. The proposed bridge deck will be supported by an abutment at each end, while wing walls would be placed upstream and downstream of each abutment. Six 24 inch (in.) diameter cast-in-drilled-hole (CIDH) piles will be utilized to secure each bridge abutment (Figure 5).

Stream Channel Restoration

Following the removal of the existing culvert and roadway fill material, approximately 200 ft. of stream channel within the project limits will be restored with input provided by DFW. The channel profile would be slightly adjusted to match the existing stream gradient, while the channel bottom would be reshaped and reinforced with new bed material within the limits of the existing culvert and for a short distance upstream and downstream. Fine sediment will be incorporated into the streambed material mix to fill voids and prevent stream flows from flowing sub-surface, resulting in a potential fish barrier. The stream banks will be reinforced with rock slope protection upstream and downstream of the proposed wing walls. The placement of rock will extend up the stream bank to approximately the 5-year water surface elevation (Figure 6).

Additional Roadway Improvements

This section of highway will be improved for a length of 720 feet in order to conform to the proposed bridge structure. Metal beam guardrail will be installed along the roadway shoulders at each of the bridge approaches. The existing lanes will be widened from 11 ft. to 12 ft., while the existing roadway shoulders will be widened from approximately 1 ft. to 4 ft. The super-elevation will be adjusted and the roadway will be slightly realigned no more than 4 ft. to the north or south. The roadway widening and realignment will require Caltrans to purchase additional right of way to the north along the west side of Fort Goff Creek. A clear recovery zone for errant vehicles will be provided along this section of highway, which would require tree removal adjacent to the highway.

Staging Areas and Stream Access

The campground parking area and existing wide pull-outs on each side of Fort Goff Creek will likely be used for the staging of equipment and materials. Staging areas will also include the existing pull-outs and roadway shoulders within the project limits. Temporary construction easements will be necessary to access the stream channel both upstream and downstream of the proposed work area, which will require a

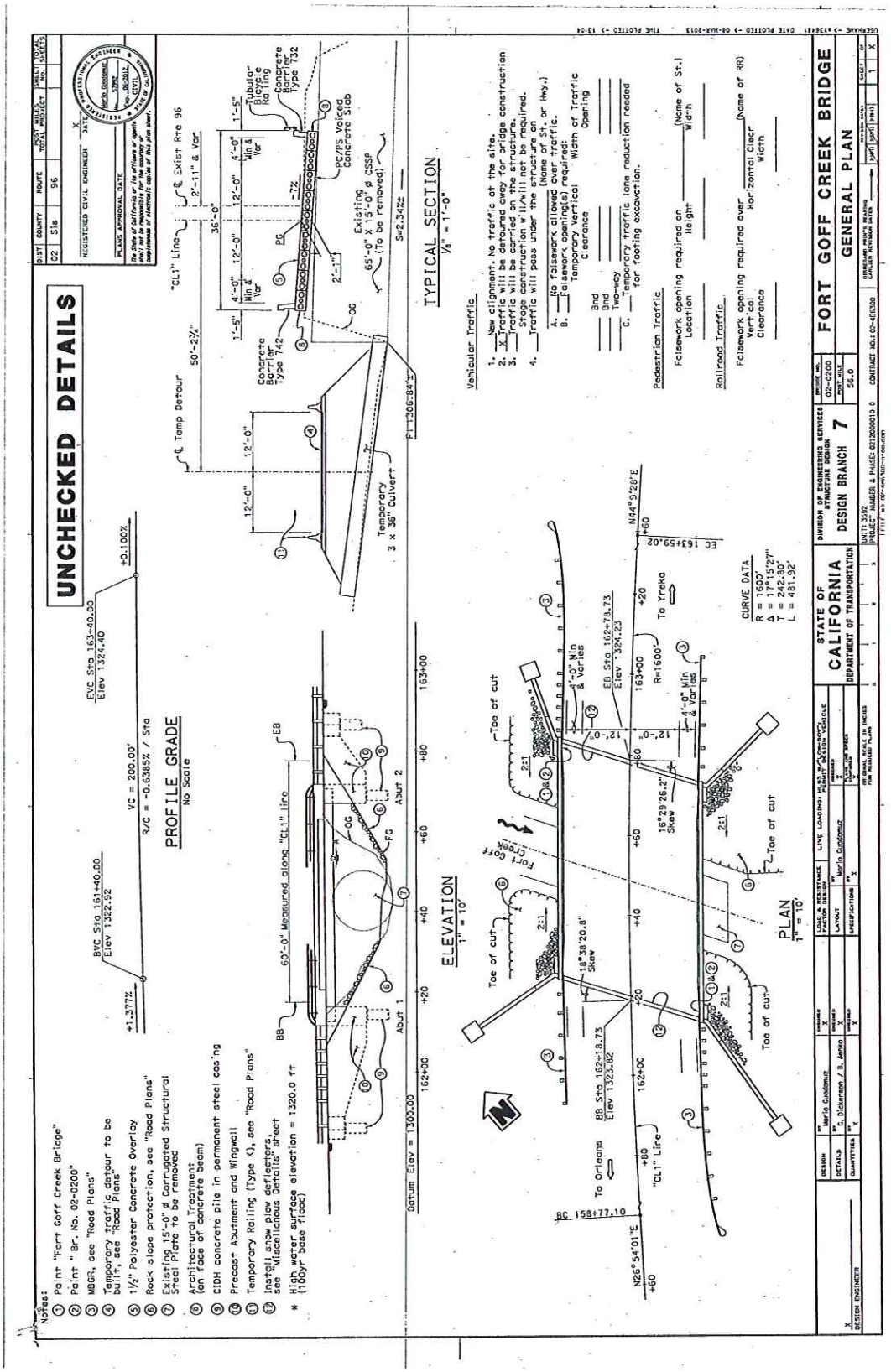


Figure 4. Bridge Structure Plan

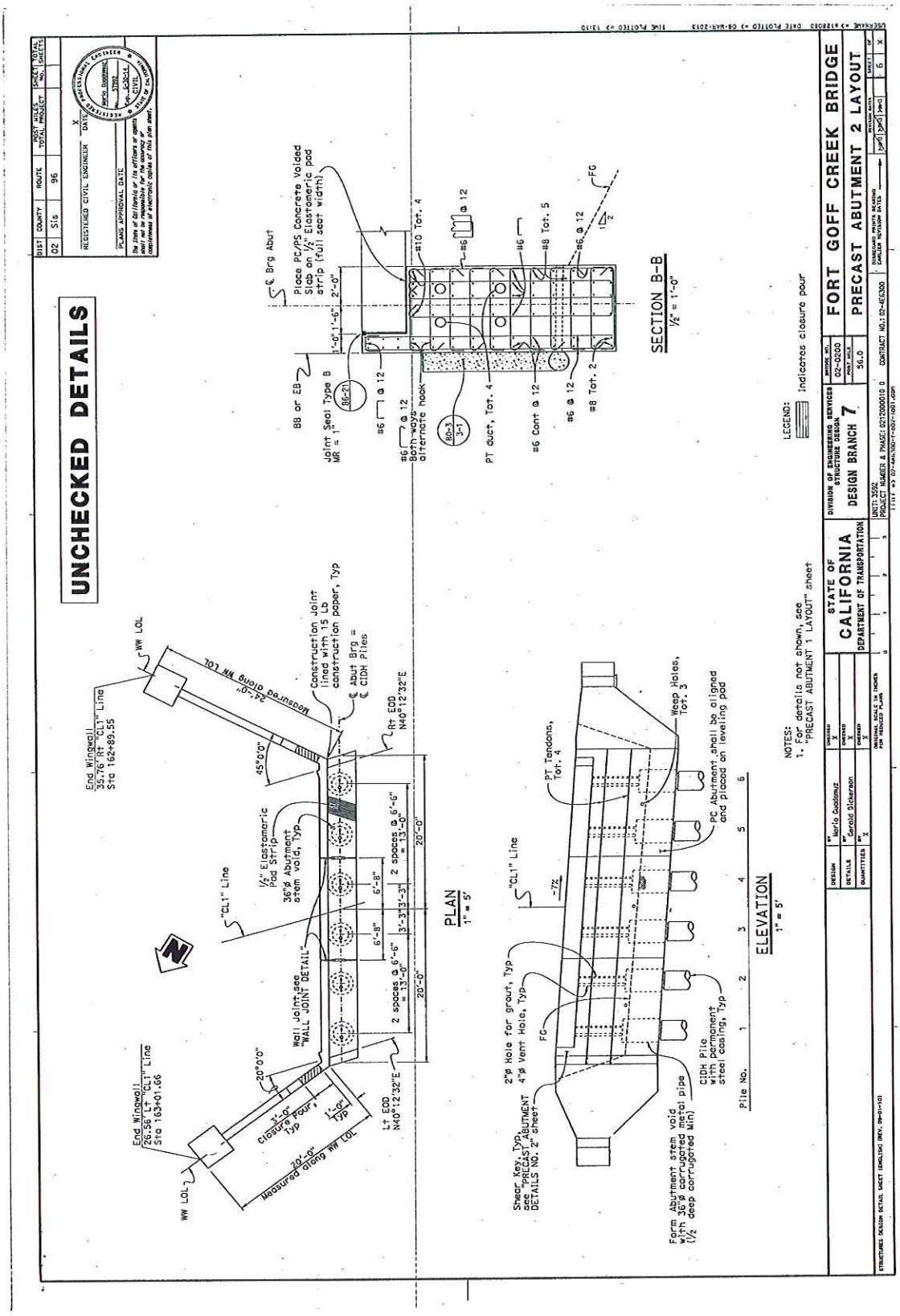


Figure 5. Bridge Abutment Plan

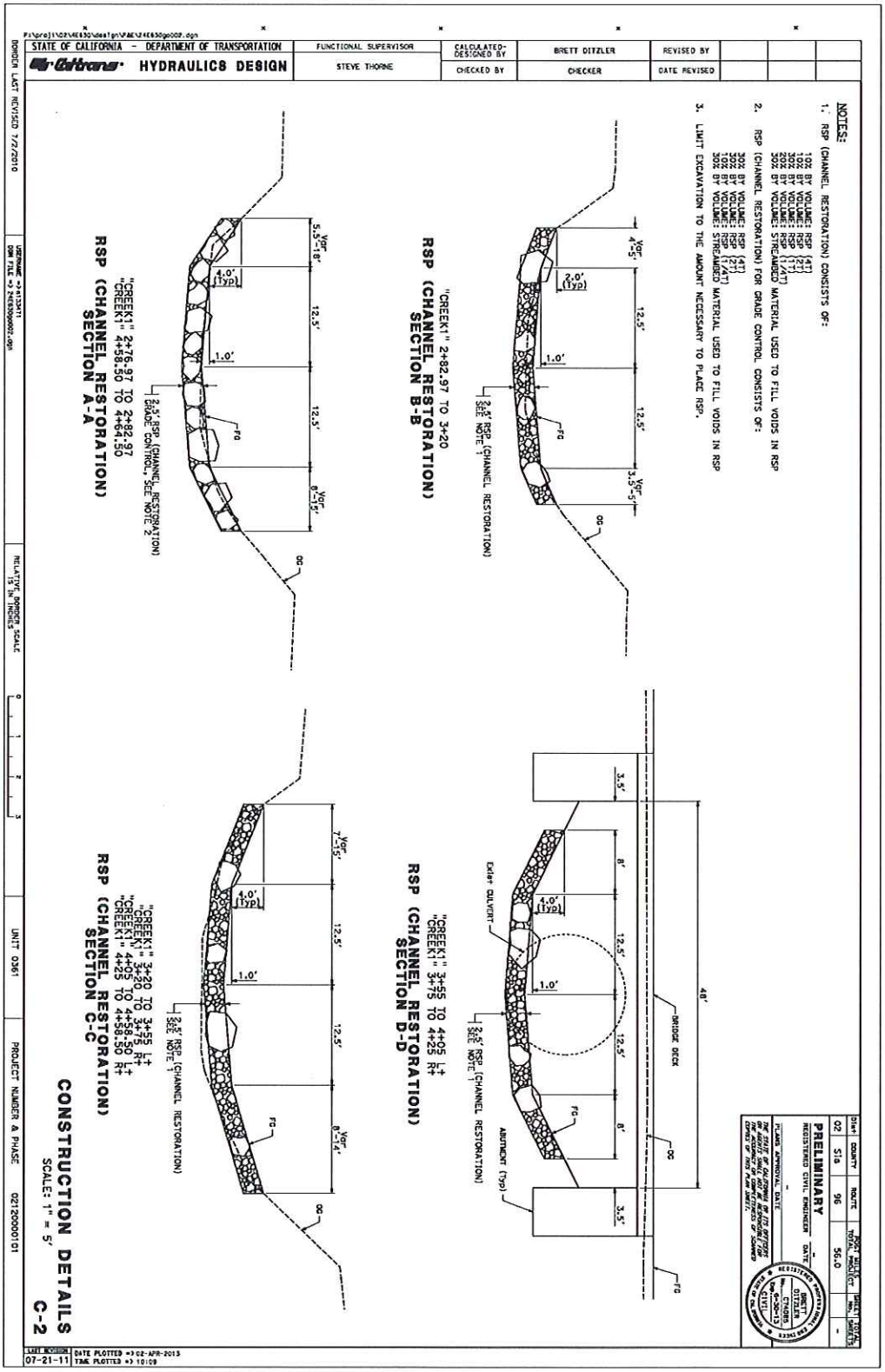


Figure 6. Channel Restoration Plan

Special Use Permit to be obtained from the USFS to access the stream channel downstream of the work area.

1.8. Permits and Approvals

Proposed work within Fort Goff Creek will require permits from DFW, U.S. Army Corps of Engineers (USACE), and Regional Water Quality Control Board (RWQCB). Proposed activities within and adjacent to Fort Goff Creek require consultation with NMFS pursuant to Section 7(a)(2) of the Endangered Species Act with regards to potential impacts to Southern Oregon/Northern California Coasts (SONCC) coho salmon Evolutionary Significant Unit (ESU) and it's designated critical habitat. In addition, a Special Use Permit and Wild and Scenic River concurrence will be obtained from the USFS.

The Fisheries Restoration Grant Program (FRGP) operates under USACE Regional General Permit (RGP) 12 (file number 2003-27922N), which was issued by the San Francisco District USACE in 2010 to allow DFW, grantees and other individuals and groups to conduct fishery habitat restoration activities using methods described in the "California Salmonid Stream Habitat Restoration Manual 4th edition" (Flosi et al. 2010) that have been evaluated by DFW biologists. NMFS and USFWS have issued biological opinions to address the impacts of the FRGP, which stipulate the conservation measures that shall be implemented to avoid and/or minimize impacts to listed species. The biological opinions have been incorporated in the USACE RGP 12 (USACE 2010), which address potential impacts to SONCC coho salmon.

The FRGP shall submit an annual application for a programmatic Section 401 Certificate to the State Water Resources Control Board. A description of project work and methods to prevent impacts on water quality shall be provided annually to the State Water Resources Control Board and to the North Coast RWQCB.

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented in accordance with the National Pollutant Discharge Elimination System (NPDES). Caltrans will obtain a DFW Streambed Alteration Agreement, USFS Wild and Scenic River concurrence, and USFS Special Use permit prior to beginning construction.

Chapter 2. CEQA Environmental Checklist

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

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

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

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:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh,	☐	☐	☐	☒

vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

V. CULTURAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

VI. GEOLOGY AND SOILS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning	☐	☐	☐	☒

Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS:
Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

X. LAND USE AND PLANNING: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒

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

XI. MINERAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

XII. NOISE: Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XIII. POPULATION AND HOUSING: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

XVI. TRANSPORTATION/TRAFFIC: Would the project:

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

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

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

Chapter 3. Discussion of Environmental Impacts

3.1. Biological Resources

Threatened, Endangered or Proposed Species

There is potential at the project site for the presence of state and federally threatened SONCC coho salmon. Proposed activities within and adjacent to Fort Goff Creek have the potential to impact SONCC coho salmon and their designated critical habitat. As part of the funding received by DFW's FRGP, NMFS has issued a biological opinion, pursuant to Section 7 of the Endangered Species Act, which addresses potential impacts and stipulates appropriate conservation measures that will be implemented to avoid and/or minimize impacts to SONCC coho salmon and their designated critical habitat.

Proposed construction activities within Fort Goff Creek will take place during the summer/fall low flow period. A temporary stream diversion will be utilized to isolate the work area from the flowing stream. If a gravel berm is utilized in the temporary stream diversion or temporary detour, material placed within the stream channel will consist of clean river run gravel. Prior to the placement of the temporary stream diversion, fish will be excluded from the work area by placing fine mesh net or screen both upstream and downstream of the project site, while any fish and/or amphibians within the project limits will be captured and relocated to an appropriate location outside the project limits. Any pumps used for dewatering will have intakes fitted with fish screens meeting DFW and NMFS criteria to prevent entrainment or impingement of small fish and/or amphibians.

Conditions at the site preclude the design of a temporary stream diversion that would facilitate fish passage during construction. However, following construction the proposed project would improve passage for coho salmon, Chinook salmon, steelhead, Pacific lamprey (*Entospherius tridentatus*), Klamath River lamprey (*Entospherius similes*), and other native fish species. The proposed bridge would also provide a wildlife crossing corridor for other aquatic and terrestrial species. The proposed project will follow the guidelines for Salmonid Passage at Stream Crossings (NMFS 2001) and DFW Criteria for Fish Passage (Flosi et al. 2003). The proposed project would provide a long-term benefit to both anadromous salmonids and other fish and wildlife.

Riparian Vegetation

Riparian vegetation adjacent to streams and rivers provide a variety of important values to fish and wildlife species. Riparian trees provide canopy, which result in cooler water temperatures and retain high levels of dissolved oxygen. Riparian trees provide bank stabilization, large woody debris, leaf litter, and invertebrates. In addition, riparian areas can also act as wildlife corridors.

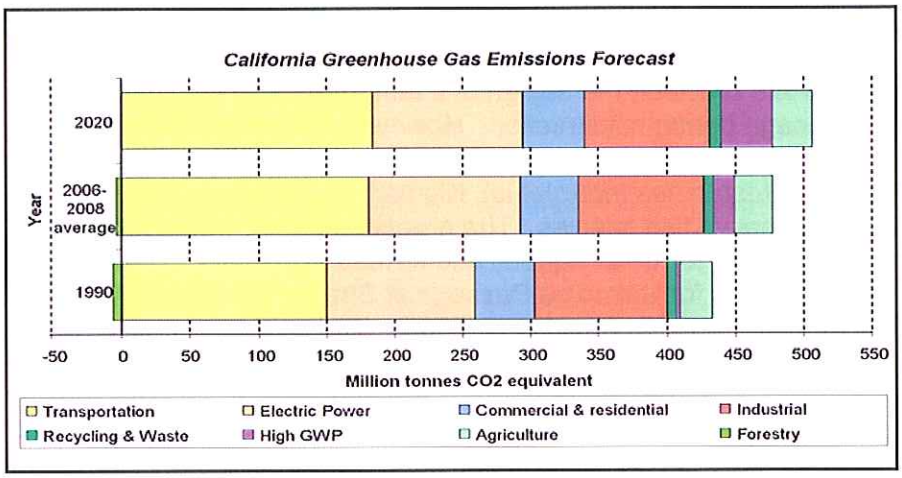
The proposed temporary detour and proposed construction activities adjacent to Fort Goff Creek is estimated to require the removal of approximately 40 white alder (*Alnus rhombifolia*), ranging in size from 2 in. to 10 in. diameter at breast height (dbh). Tree removal will be limited to the minimum extent necessary to construct the proposed project. Where possible, riparian vegetation anticipated to be removed will be trimmed or cut back rather than removed in an attempt to leave the root system intact. Following

construction, all disturbed stream banks will be replanted with native riparian species. The proposed project would improve the riparian corridor within the project site, since the bridge would allow the riparian on both sides of the highway to be contiguous.

3.2. Greenhouse Gas Emissions

An individual project does not generate enough greenhouse gas (GHG) emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contribution of all other sources of GHG.[1] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

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



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

Figure 7. California Greenhouse Gas Forecast

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

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[2]

Project Analysis

The purpose of the proposed project is to improve fish passage on Fort Goff Creek by replacing a 15 ft. diameter culvert with a single span bridge. The proposed project will not increase capacity or vehicle miles travelled, therefore no increases in operational GHG emissions are anticipated.

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. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. Even though the project is not anticipated to increase operational GHG emissions, the proposed project would generate some GHG emissions during construction.

CEQA Conclusion

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

Greenhouse Gas Reduction Strategies

Project level GHG measures

Following construction, the project proposes planting riparian vegetation along Fort Goff Creek. Planting trees and other vegetation reduces surface warming, and through photosynthesis decreases carbon dioxide. It is currently estimated the proposed project will not require more than 120 working days to construct. During construction, the project will utilize a "stop and proceed when clear" type of temporary detour, which would eliminate traffic delays and long periods of traffic holding (idling). While

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

construction emissions of greenhouse gases are unavoidable, the proposed project is minor in scope. Construction utilizing mechanized equipment will be of short duration and the type of equipment used will be small in scale.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as ARB works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: systems monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 8.

Figure 8. Mobility Pyramid

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

Adaptation Strategies:

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

heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

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

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

The proposed project location is outside of the coastal zone and is not in an area expected to experience direct impacts due to sea level rise for the projected 2050 and 2100 years.

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

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

3.3. Hydrology and Water Quality

The temporary stream diversion and reconstruction of the stream channel is anticipated to result in short-term increases in turbidity during channel dewatering, rewatering, and during the first major rain event following project completion. It is expected the majority of suspended fines will likely settle out within a few hours and prior to reaching the Klamath River. Some fines may reach the Klamath River, but this would not have an appreciable effect on background sediment levels in the river.

In accordance with the Caltrans Standard Specifications, the contractor will be required to submit a SWPPP. The SWPPP must be prepared in accordance with Caltrans' Storm Water Management Program and the Statewide Caltrans NPDES Permit issued by the State Water Resources Control Board. The SWPPP identifies potential sources of pollution and includes Caltrans' best management practices (BMPs) that will be

implemented to avoid and/or minimize potential sediment delivery or chemical contamination from entering Fort Goff Creek and/or Klamath River. Construction activities within the stream channel will take place during the summer and fall, when flows are at their lowest.

3.4. Noise

The project is located within a rural setting, approximately 4 miles west of the community of Seiad Valley. Existing noise receptors near the project limits include an adjacent campground and a couple of adjacent residences. The campground is seldom used and the parking area would be closed for staging of equipment and/or materials during the majority of proposed construction activities. Temporary increases in ambient noise levels will occur in the project vicinity during construction due to the operation of construction equipment. To avoid potential impacts to fisheries and the adjacent campground and residences, installation of pile casings will avoid the use of percussive pile driving activities.

Noise produced by construction equipment shall conform with Caltrans' 2010 Standard Specifications, Section 14-8.02. The noise level from proposed construction activities between 9:00 p.m. and 6:00 a.m. shall not exceed 86dBa (decibels) at a distance of 50'. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud signals shall be avoided in favor of light warnings, except those required by safety laws for the protection of personnel. All internal combustion engines used for any purpose on the job or related to the job, shall be equipped with the manufacturer recommended muffler. No internal combustion engine shall be operated on the project site without a muffler. In addition, personnel shall wear hearing protection while operating or working near equipment (producing noise levels greater than 84 db, including chainsaws, excavators, and backhoes).

Chapter 4. List of Preparers

This Initial study was prepared by the California Department of Transportation, North Region Office of Environmental Management, with input from the following staff:

Brett Ditzler, Project Engineer
Contribution: Project design

Tom Graves, Hazardous Waste Coordinator
Contribution: Initial Site Assessment for Hazardous Waste

Brian Humphrey, Environmental Coordinator / Biologist
Contribution: Document writer and review of biological studies

Tauni Melvin, Federal Lands Coordinator
Federal Agency Liaison and Right-of-Way coordination

Brenda Powell-Jones, Senior Environmental Planner
Contribution: Greenhouse Gas Emissions

Chris Quiney, Environmental Branch Chief
Contribution: Document preparation oversight

Steve Thorne, Senior Hydraulics Engineer
Contribution: Project Design

Brian Walsh, Project Archaeologist
Contribution: Cultural resource surveys, Native American coordination and Section 106 compliance

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Appendix A. Proposed Conservation Measures

The following conservation measures will be included in the project to avoid and/or minimize adverse impacts:

1. All construction activities within the live stream of Fort Goff Creek shall take place during the summer low flow period, which will be specified in the DFW 1602 Streambed Alteration Agreement.
2. The environmental construction liaison shall be notified at least two weeks prior to construction for direction of the placement of Environmental Sensitive Area (ESA) fencing. To prevent impacts to any cultural resources, ESA fencing will be placed between the roadway shoulder and the adjacent cemetery.
3. The DFW FRGP Grant Manager shall be notified a minimum of 5 working days prior to the placement of the temporary stream diversion, which will allow DFW to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids, other fish life, and amphibians from the project area.
4. Prior to the placement of the temporary stream diversion, fish will be excluded from the work area by placing a fine mesh net or screen both upstream and downstream of the proposed temporary stream diversion. Mesh shall be no greater than 1/8 inch diameter, while the bottom edge of the net or screen shall be completely secured to the channel bed. Nets or screens shall be regularly checked and cleaned of debris.
5. Several days prior to the placement of the temporary stream diversion, fish and/or amphibian species will be captured and relocated by DFW personnel or designated agents. The following measures shall be implemented to minimize harm or mortality to captured fish or amphibian species:
    - Fish relocation shall take place during the low flow period, specified in the DFW 1602 Streambed Alteration Agreement.
    - All electro-fishing shall be performed by a qualified fisheries biologist and conducted according to the NMFS, Guidelines for Electro-fishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
    - Prior to capturing fish, the most appropriate release location shall be determined. Rescued fish shall be moved to the nearest appropriate site outside the project area, which include the following:
        - The water temperature shall be similar as the capture location.
        - There shall be ample habitat for the captured fish.
        - There shall be a low likelihood for the fish to re-enter the work site or become impinged on exclusion net or screen.
    - A record shall be maintained of all fish rescued and moved. The record shall include the date of capture, and relocation, the method of capture, the location of the relocation site in relation to the project site, and the number and species of fish captured and relocated. The record shall be provided to DFW within two weeks of the completion of the work season or project, whichever comes

first. Caltrans shall provide fish relocation data to the DFW Grant Manager on a form provided by DFW.

- Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual.

6. A temporary stream diversion will be utilized to isolate the work area from the flowing stream. Any equipment entering the active stream shall be preceded by an individual on foot to displace fish or amphibians and prevent them from being crushed. If a gravel berm is utilized in the stream diversion, material shall consist of clean river run gravel or streambed material approved by DFW. Following construction, clean river run gravel utilized in the temporary stream diversion or detour may be left in the stream channel, provided it does not impede stream flow or fish passage. The temporary stream diversion shall not dewater more than 500 ft. of Fort Goff Creek, while making every effort to minimize the length of stream to be dewatered.
7. If a temporary traffic detour requires placement of fill within Fort Goff Creek, material placed within the channel will consist of clean river run gravel or streambed material approved by DFW.
8. The contractor shall prepare a SWPPP, which will include Catrans' BMPs that will be implemented to avoid and/or minimize potential sediment or chemical contamination from entering Fort Goff Creek and/or Klamath River.
9. Any pumps used for dewatering shall have intakes fitted with fish screens meeting DFW and NMFS criteria to prevent entrainment or impingement of small fish or amphibians. Pump intakes shall be periodically checked for impingement of fish or amphibians, and shall be relocated outside the project area. Any turbid water pumped from the work site will be pumped to a portable tank, truck, or an adjacent upland area, making certain surface water will not be returned to Fort Goff Creek or the Klamath River.
10. All equipment used in the implementation of this project shall be cleaned (i.e. free of dirt, grease, debris and material that may harbor noxious weeds and their seeds) prior to its arrival to the project site.
11. Noise produced by construction equipment shall conform with Caltrans' 2010 Standard Specifications, Section 14-8.02. The noise level from proposed construction activities between 9:00 p.m. and 6:00 a.m. shall not exceed 86dBa (decibels) at a distance of 50 ft. The use of loud signals shall be avoided in favor of light warnings, except those required by safety laws for the protection of personnel. All internal combustion engines used for any purpose on the job or related to the job, shall be equipped with the manufacturer recommended muffler.
12. To avoid potential impacts to fisheries and the adjacent campground and residences, installation of pile casings will avoid percussive pile driving activities.
13. Vegetation removal will be limited to the minimum extent necessary to construct the proposed project. Chainsaws shall use vegetable-based bar oil when possible during the removal of riparian vegetation. Where possible, riparian vegetation will be cut back rather than removed in an attempt to leave the root system intact.

14. Staging areas for equipment, materials, fuels, lubricants, and solvents, will be located outside of the high water channel and associated riparian area of Fort Goff Creek. Stationary equipment such as motors, pumps, generators, compressors, and welders located within the dry portion of the stream channel or adjacent to Fort Goff Creek, will be positioned with drip pans. Vehicles will be moved out of the normal high water area of Fort Goff Creek prior to refueling and lubricating. Best management practices to reduce spills will be used during equipment refueling and other activities that may release petroleum products into the environment.
15. The project will follow the NMFS Guidelines for Salmonid Passage at Stream Crossings (NMFS 2001) and DFW Criteria for Fish Passage (as described in the Third Edition, Volume II, Part IX, February 2003, of the California Salmonid Stream Habitat Restoration Manual (Flosi. 2003). The engineered plans for the bridge installation shall be visually reviewed and authorized by NMFS or DFW engineers prior to commencement of work.
16. Following construction, all disturbed areas will be stabilized with mulch and/or erosion control seed mix.
17. Following construction, all disturbed stream banks will be replanted with native riparian species at a 2 to 1 replacement ratio. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings.
18. Excavated material shall be stockpiled in areas where it cannot enter Fort Goff Creek.
19. If DFW determines that turbidity/siltation levels resulting from an activity or activities constitute a threat to aquatic life, all activities associated with the turbidity/siltation shall cease until effective DFW approved sediment control devices are installed and/or abatement procedures are implemented.
20. Personnel shall wear hearing protection while operating or working near equipment (producing noise levels greater than 84 db, including chainsaws, excavators, and backhoes).