

Mococo Overhead Seismic Restoration Project

CONTRA COSTA COUNTY, CALIFORNIA
DISTRICT 4 – CC – 680 (PM 24.2/24.4)
3A8700

Initial Study [with Proposed Mitigated Negative Declaration]



Prepared by the
State of California Department of Transportation



April 2010

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General Information About This Document

What's in this document:

The California Department of Transportation (Department or Caltrans), has prepared this Initial Study (IS), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Contra Costa County, California. The document describes why the project is being proposed, alternatives 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 compensation measures.

What you should do:

Please read this Initial Study. Additional copies of this document as well as the technical studies are available for review at the Public Information Center, Department of Transportation, at 111 Grand Avenue, Oakland, CA 94612. Copies of the IS are also available at the following locations:

Department of Transportation
District 4
111 Grand Ave
Oakland, CA 94612

We welcome your comments. If you have any comments regarding the proposed project, please send your written comments to the Department by July 7, 2010.

- Submit comments via postal mail to:
Sheryl M. Garcia, Associate Environmental Planner,
- Attention: Craig Jung
Department of Transportation, Environmental Analysis
111 Grand Avenue, Oakland, CA 94612
- Submit comments via email to: Craig_jung@dot.ca.gov.

Submit comments by the deadline: July 7, 2010

What happens next:

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

For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attention: Craig Jung, Department of Transportation, Environmental Analysis, 111 Grand Avenue, Oakland, CA 94612; (510) 286-5701 Voice, or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

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This project proposes to seismically rehabilitate the Mococo Overhead on I-680 in Contra Costa County.

**INITIAL STUDY
with Proposed Mitigated Negative Declaration
Mococo Overhead Seismic Restoration Project
Contra Costa County, California**

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

THE STATE OF CALIFORNIA
Department of Transportation

April 29, 2010
Date of Approval


Melanie Brent
Office Chief
Office of Environmental Analysis
District 4 (Oakland)
California Department of Transportation

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PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code200

Project Description

The California Department of Transportation (Caltrans) proposes a seismic restoration to the southbound off-ramp at Interstate 680 (I-680) from Post Mile (PM) 24.26 to 24.40. The proposed project includes removing and replacing the existing southbound off-ramp structure and replacing the restrainer cables on the mainline and the hinge restrainers on the ramp using standard cables.

Determination

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

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

The proposed project would have no effect on farmlands, timberlands, land use, growth, community impacts, emergency services, traffic, transportation/pedestrian and bicycle facilities, visual or aesthetic resources, cultural resources, floodplains or hydrological resources, geology, soils, or topography, paleontological resources, air quality, and noise levels. The proposed project would also not affect or produce hazardous waste or materials.

The proposed project would have no significant adverse effect on threatened and endangered species and water quality resources because the proposed mitigation measures would reduce potential effects to insignificance:

Threatened and Endangered Species

- Construction Monitoring, Focused Preconstruction Surveys, Revegetation, Temporary Mouse-Proof Barrier (MPB) and Barrier Fences, Biological Monitoring, restoration of the project site after construction, Construction will not occur in channel or wetland areas after October 15, and special fencing will delineate the construction area.

James B. Richards
Deputy Director, Environmental Planning
and Engineering
District 4 (Oakland)
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

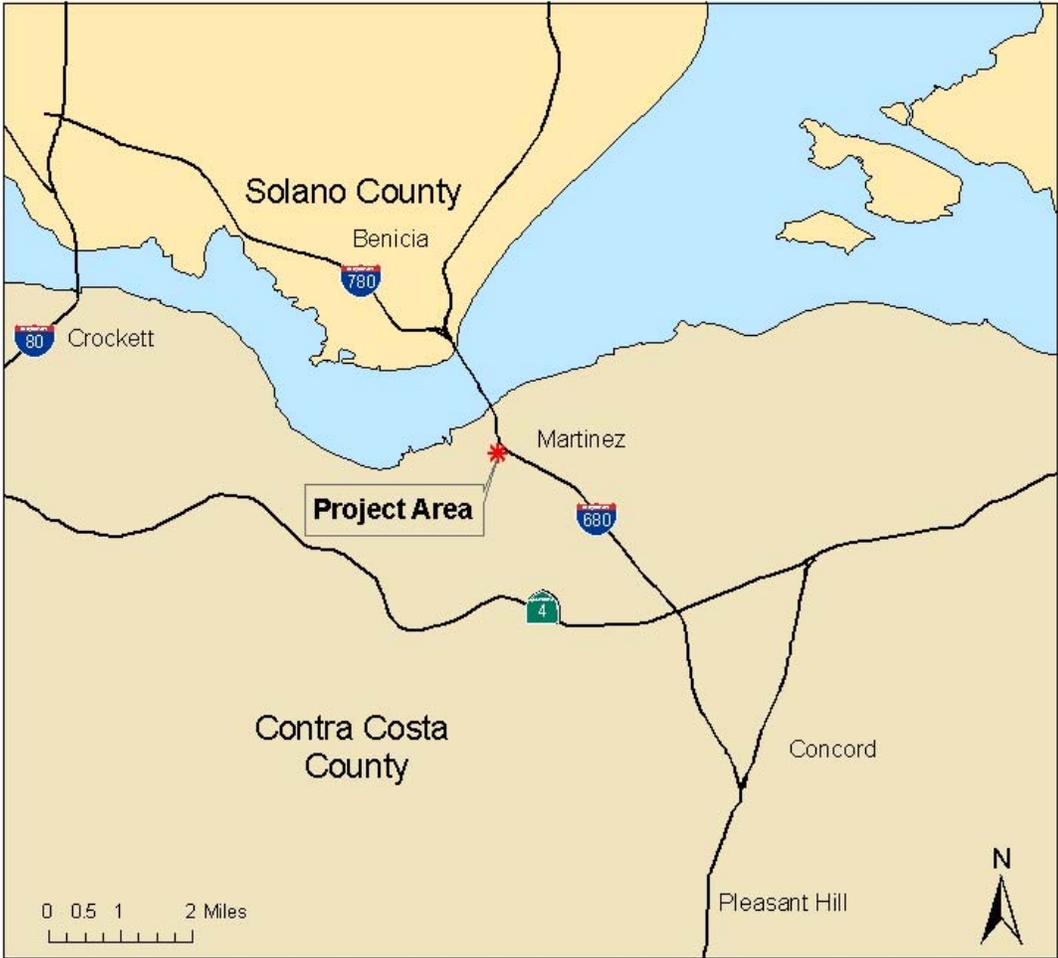
Interstate 680 (I-680) is a major north/south corridor connecting Santa Clara, Alameda, Contra Costa and Solano Counties. Given the high volume of traffic on I-680 during peak and off peak hours, the purpose of the proposed project would address any potential concerns arising from potential damage from either a major seismic event or normal maintenance issues on the Mococo Overhead.

The Department of Transportation (Department or Caltrans) proposes to provide maintenance to the Mococo Overhead (Bridge # 28-0171) located along I-680 in the City of Martinez, Contra Costa County from post mile (PM) 24.2 to post mile 24.4 (Figure 1). This maintenance project is in accordance with the Bridge Inspection Report dated April 19, 2005 and under the Bridge Seismic Restoration Program. The Bridge Seismic Restoration Program addresses seismic deficiencies of existing bridges due to changing conditions, deteriorated components or to provide upgrading for any bridges excluded from the Seismic Retrofit Program. The purpose of this program is to insure all Caltrans bridges can withstand a credible seismic event.

The Mococo Overhead lies within the San Andreas Fault system, a seismically active transform tectonic plate boundary between the Pacific Plate to the west and the North American Plate to the east. The Concord fault, 1.6 miles to the east, is the nearest active fault. This fault line has a maximum credible earthquake (MCE) magnitude of 6.5. The MCE is the largest reasonable earthquake at a fault without regard or consideration of how often the earthquake might occur (the return period). The Green Valley Fault, 11 miles to the northeast, has a maximum credible earthquake magnitude of 6.75. The Southampton Fault, 2.5 miles to the west, has a maximum credible earthquake magnitude of 6.25. The Hayward Fault, the Calaveras Fault, the Rogers Creek Fault and the San Andreas Fault are other major faults that are within 31 miles of the site. These faults are capable of maximum earthquakes reaching a magnitude 7.0 or greater.

This project is included in the FY 2008 State Highway Operation and Protection Program (SHOPP). The project is estimated to cost \$14,500,000.00.

Figure 1- Project Location



Mococo Overhead Project Area

**Mococo Overhead
Seismic Strengthening
and
Rehabilitation Project**



Vicinity Map

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to upgrade the existing overhead and improve safety by:

- Providing seismic rehabilitation to the overhead as recommended by the Bridge Inspection Report dated April 19, 2005;
- Complying with maintenance standards under the Seismic Restoration Program; and
- Ensuring that the Mococo Overhead can withstand a credible seismic event.

1.2.2 Need

The need for the project is:

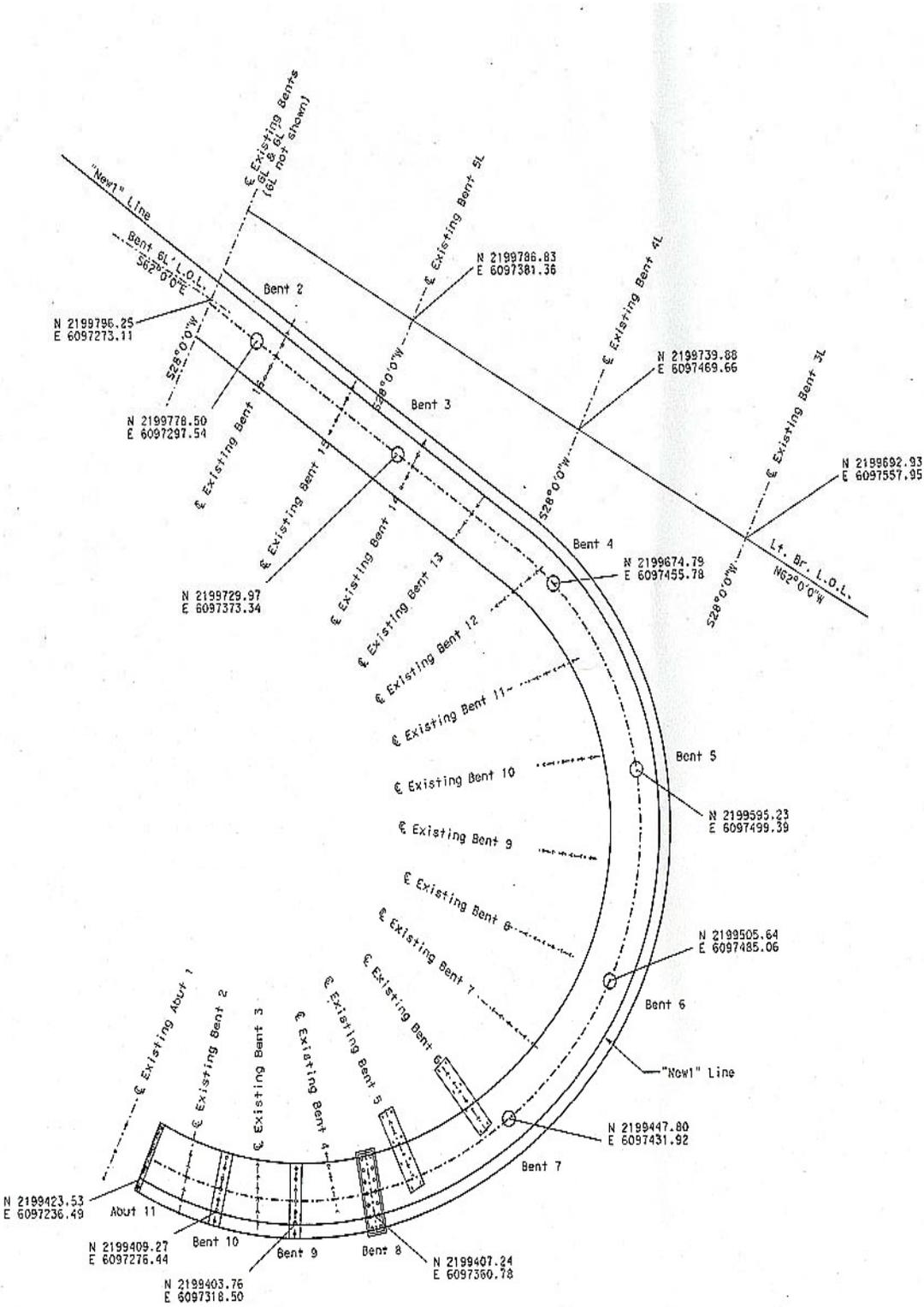
- Mococo Overhead currently does not meet credible seismic event standards;
- Restrainer cables are deteriorating; and
- Pile caps need to be reinforced and rehabilitated.

1.3 Project Description

The California Department of Transportation (the Department or Caltrans) proposes to remove and replace the existing southbound off-ramp structure. The existing off ramp structure is a cast in place concrete slab superstructure supported by fifteen bents. The configuration of the existing bents consists of multiple pile extension/column bents that are 16" in diameter. The proposed replacement structure type would consist of a cast in place concrete box girder superstructure combined with a cast in place concrete slab. Supports for the cast in place slab would be 16" diameter multiple cast in steel shell (CISS) pile extension/column bents located from Bent 8 to Abutment 11 (Figure 2). Supports for the cast in place box girder superstructure would be single 5' diameter column bents supported on 6.5' diameter CISS pile shafts supported by approximately six bents. The configurations of the proposed bents are single 5' diameter columns supported by 6.5' diameter pile shafts. To avoid the existing bents, Abutment 1 will be relocated approximately 20 feet from its present location. In addition, cross bracing will be installed along the mainline.

The project site is in Shell Marsh. It is within the area that is part of the 1992 Shell Marsh Restoration Plan. Tide gates were opened during 2009 to restore some 200 acres of marsh habitat, including the project site. The project site needs to be kept dry prior to and during construction operations to minimize damage to Shell Marsh. Temporary sump pumps, powered with diesel generators, would be used to remove Shell's stormwater discharge, seawater and groundwater, etc. from the project site before and during construction. An inflatable bladder will be placed in the existing culvert, prior to construction phase of the project, under the eastbound I-680 on off ramps to prevent backwater from entering the project location. Sand bags will be placed around the utility box culvert opening to prevent backwater through that culvert as well. The objective is to keep the project area relatively dry until construction is completed.

Figure 2 – Bents and the Abutment



Removal of existing off-ramp structure deck will occur in sections using heavy equipments from the ground including all existing Raymond piles up to two feet below ground. All spoils would also be hauled off from the project site using large dump trucks. Caltrans will remedy existing seismic vulnerabilities due to corroded restrainer cables, provide additional lateral bracings to span end diaphragms at all existing mainline bents and replace the restrainer cables on the mainline.

Fill material will be required to fill the void created. A 30' temporary road measured from both sides of the new and existing superstructures would be required to complete the construction operations for removal and construction of the new off-ramp structure. Contractors will use construction fabric and a layer of gravel for access roads and staging areas to protect the original contour of all wetland(s) that cannot be avoided within the identified temporary affected areas adjacent to or within the right-of-way. Construction of a temporary road abutting the existing on-ramp would be required to access the outside of the off-ramp.

1.4 Project Alternatives

The alternatives for this project are the Build Alternative and the No Build Alternative. The Build Alternative will address the purpose and need of the project. The No Build Alternative will not address nor fix any of the problems associated with the proposed project.

1.4.5 Existing Facility

The existing off-ramp structure is located at PM 24.26, along I-680 and near Martinez, California. The structure serves I-680 southbound traffic exiting onto Marina Vista Avenue. The off ramp has three, non-standard lanes, shoulder widths ranging from 2'-10' and a 2.5' median. The off-ramp roadway is situated over a marsh.

1.4.6 Alternative 1, Seismic Restoration of the Existing Overhead

Alternative 1 proposes to remove and replace the existing southbound off-ramp structure. Removal of the existing off-ramp structure deck will occur in sections using heavy equipments from the ground including all existing Raymond piles up to 2' below ground. All spoils would also be hauled off from the project site using large dump trucks. This will be the first phase of the project and is scheduled to happen in March 2013.

The existing off ramp structure is a cast in place concrete slab superstructure supported by fifteen bents. The configuration of the existing bents consists of multiple pile extension/column bents that are 16" in diameter. The proposed replacement structure type would consist of a cast in place concrete box girder superstructure combined with a cast in place concrete slab. Supports for the cast in place slab would be 16" diameter multiple cast in steel shell (CISS) pile extension/column bents located from Bent 8 to Abutment 11. Supports for the cast in place box girder superstructure would be single 5' diameter column bents supported on 6.5' diameter CISS pile shafts supported by approximately six bents. The configurations of the proposed bents are single 5' diameter columns supported by 6.5' diameter pile shafts. To avoid the existing bents, Abutment 1 will be relocated approximately 20' from its present location (Figure 2). Alignment and construction of the new abutment will occur during this phase.

A temporary 30' road measured from both sides of the reflected edges of the new bents is required to complete the construction operations. A temporary trestle or elevated platform,

30' wide and approximately 25' long, would be constructed over the existing drainage canal to avoid impacts.

Restrainer Cable Replacement

Caltrans will replace the restrainer cables on the mainline. Replacing the restrainer cables will address the existing seismic vulnerabilities because the restrainer cables are corroded. This work will provide additional lateral bracings to span end diaphragms at all existing mainline bents. The cable work will require partial closure of Marina Vista Avenue/Waterfront Road, with traffic re-routed first onto the northern half of the road, then the southern half, until repairs to the understructure are completed.

Crossing Bracing Replacement

The cross bracing along the mainline will be installed. All of the construction will occur from Marina Vista Avenue.

1.4.7 Alternative 2, “No Build Alternative”

The No Build Alternative would not implement any of the proposed improvements proposed by the project. The effects of not implementing the proposed project would result in the Mococo Overhead not complying with the maintenance standards under the Seismic Restoration Program. In the event of a major earthquake the Mococo Overhead could sustain serious damage that may make the overhead unsafe to motorists, impair the flow of traffic, jeopardize the structural integrity of the overhead and elevate the costs to repair and maintain the overhead.

1.4.8 Comparison of Alternatives

The Build Alternative will address the problems and concerns of the Mococo Overhead and the off-ramp. The seismic deficiencies will be fixed and comply with Bridge Inspection Report dated April 19, 2005. The cost to fix the overhead and replace the off-ramp will be \$14,500,000.00. Environmental resources will be impacted by implementing the proposed project.

The No Build Alternative will not address any of the problems associated with the Mococo overhead and the off-ramp. Both the seismic deficiencies and the maintenance issues will still be a problem for both of the structures. All the recommendations for the Bridge Inspection Report will not be addressed or remedied. The advantages of the No Build Alternative is the cost will be much lower than the Build Alternative and the environmental resources will not be impacted.

The preferred alternative is to provide seismic restoration to the Mococo Overhead.

1.5 Permits and Approvals Needed

The following permits and approvals will be required for this project, as shown in Table 1.

Table 1 – Permits and Approvals

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species, Salt Marsh Harvest Mouse. Review and Comment on 404 Permit	Caltrans is requesting from USFWS that the Mococo project description be included in the original Biological Opinion for the Benicia Martinez Bridge
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States.	Application will be submitted during the design phase of the project.
California Department of Fish and Game	1602 Agreement for Streambed Alteration.	Application will be submitted during the design phase of the project.
California Regional Water Quality Control Board	Section 401 and 402	Applications will be submitted during the design phase of the project

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

As part of the scoping and environmental analysis conducted for the project, the Department considered the following environmental resources. No potential for adverse impacts to these resources was identified with Alternative 1. Consequently, there is no further discussion regarding these issues in this document:

- farmlands;
- timberlands;
- land use;
- growth;
- community impacts;
- emergency services;
- traffic, transportation/pedestrian and bicycle facilities;
- visual or aesthetic resources;
- cultural resources;
- paleontological resources;
- hazardous waste or material;
- air quality; and
- noise levels.

2.1 Physical Environment

2.1.1 HYDROLOGY AND FLOODPLAINS

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments;
- Risks of the action;

- Impacts on natural and beneficial floodplain values;
- Support of incompatible floodplain development; and
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Affected Environment

The following information is from the Location Hydraulic Study dated September 23, 2008. The Peyton Slough Watershed encompasses an area of approximately 6.1 square miles. This area includes the Shell Refinery to the west, the communities of Mountain Creek and Vine Hill to the south and borders Pacheco Creek to the east. Peyton Creek is the main waterway draining this watershed. It begins north of State Route 4 near Martinez Ridge and flows into Peyton Slough, which ends at the Carquinez Strait. The total channel length of Peyton Creek and Peyton Slough is 8.11 miles.. A third of Peyton Creek runs through the urban and industrial areas of the watershed, flowing through underground culverts.

Elevations within the watershed range from sea level to 400’ above sea level. From an elevation of 400’, Peyton Creek flows in a northeasterly direction. The terrain slopes gently until it reaches the general area of the McNabney Marsh (originally known as Shell Marsh), where it becomes flat. In this area, Peyton Creek flows into Peyton Slough, which flows northward and discharges into the Carquinez Straight. Federal Emergency Management Agency (FEMA) Flood Insurance Maps (FIRM) (Figure 3) show that most of the lower watershed and the area around Peyton Creek in the upper watershed are within the boundary of the base floodplain.

The residential communities of Mountain View and Vine Hill are located in the upper reaches of the watershed, which are heavily urbanized. In the lower watershed west of Peyton Slough the Shell Refinery takes up the majority of this area. A section of the lower watershed area is protected from the base flood by levees. McNabney Marsh and Pacheco marsh are located in the lower part of the watershed east of Peyton Slough, which is mainly marshland.

An oil spill originated at the Shell Refinery in 1988 polluting the area. McNabney Marsh was covered in oil during the spill due to its location next to the refinery. In the aftermath of this incident, the decision was made to restore and enhance McNabney Marsh. The restoration resulted in the Shell Marsh Restoration Project. The construction of new levees and tidal gates was part of the project. The tidal gates were installed to restore the tidal flows into the marsh and to help control water levels. In addition, a section of Peyton Slough was realigned and sediment contaminated with industrial waste was capped. This project started in 1998 and completed in 2003. Currently the Peyton Slough watershed is not listed in the State of California’s 303 (d) list of Impaired Water Bodies.

Environmental Consequences

The main highway in this area is Route 680, which runs through the watershed to the west of McNabney Marsh. Peyton Slough crosses under I-680 as it flows northwards towards the

Table 2 – Tidal Data

Port Chicago (1983-2001 Epoch)			Mouth of the Peyton Slough
Tidal Datum	Elevation Compared to Mean Low Low Water (meter)	Elevation (ft NGVD)	Elevation (ft NGVD)
Mean High High Water	1.498	3.423	3.351
Mean High Water	1.343	2.915	2.813
Mean Tide Level	0.785	1.085	0.877
Mean Sea Level	0.781	1.072	0.863
Mean Low Water	0.226	-0.749	-1.062
Mean Low Low Water	0.000	-1.490	-1.847

Carquinez Strait. A stretch of I-680 in the vicinity of the Mococo Overhead is shown on the FIRM to be in an area with a base flood from 6' to 8.6'. This stretch of the freeway was built on a 10' high fill on top of tidal marshland made up of highly compressible bay-mud and peat. This resulted in differential settlement of the freeway ranging from 0.1' to 6', which brought the elevation of the freeway under that of the base flood.

The tide levels in Table 2 are approximations. The tide levels at the project site would vary from this data as the project is located roughly 2000' inland from the mouth of Peyton Slough, and the tide level in Peyton Slough is controlled by the tidal gates installed as part of the Shell Marsh Restoration Project.

On the mainline of I-680 within the proposed work area, elevations range from a high of 46 feet National Geodetic Vertical Datum (NGVD) at the end of the overcrossing to a low of approximately 16 feet NGVD at the beginning of the overcrossing. The lowest point on the off-ramp where work is occurring is approximately 6.6 feet NGVD.

The majority of the proposed work occurs on the bridge and ramp structure and as such has no direct impact on the floodplain. Proposed work that would have a direct impact on the floodplain would be the strengthening of the Raymond piles on the off-ramp, however, this proposed work is not expected to have any significant adverse impact on the floodplain because the area of impact is small. The construction of temporary construction platforms in the floodplain is proposed to provide access for the replacement of restrainer cables. These temporary construction platforms are to be situated near existing columns close to the existing drainage canal that flows under the Mococo Overhead. These construction platforms have to be constructed so as not to impede the flow of the drainage canal.

Avoidance, Minimization and/or Mitigation Measures

The proposed work is not expected to have an adverse impact on the floodplain. This is because the majority of the proposed work is on the bridge and ramp structure. Any temporary construction platforms built to provide access for the proposed work has to be built so as not to impede the flow of the existing drainage canal under the Mococo Overhead.

2.1.2 WATER QUALITY AND STORM WATER RUNOFF

Regulatory Setting

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers (USACE) to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit 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 nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all Department activities on its highways and facilities. Department construction projects are regulated under the Statewide permit, and projects performed by other entities on Department right-of-way (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. All construction projects over one acre require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. Department activities less than one acre require a Water Pollution Control Program.

Affected Environment

PROJECT LOCATION AND RECEIVING WATER BODIES AND GROUNDWATER

This project is located in Contra Costa County, within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Region-2), which is responsible for the implementation of the State and Federal water quality protection laws and regulations in the vicinity of the project site.

STORM WATER

The project site is within the Suisun-Concord-Martinez Hydrologic Sub-Area (HSA) #207.33. 303(d) lists the water bodies located within this HSA, which include the Carquinez Strait and Suisun Bay to the north of the project. The pollutants of concern for Carquinez Strait are: Chlordane, DDT, Dieldrin, Dioxin Compounds, Exotic Species, Furan Compounds, Mercury, Polychlorinated Biphenyls, Selenium, Sediment and Nickel.

The Region 2, RWQCB Basin Plan has established beneficial uses for the Suisun Bay area, which include estuarine habitat, commercial and sport Fishing, industrial service supply, navigation, contact and non-contact water recreation and wildlife habitat and spawning.

GROUND WATER

This project is located in the Arroyo del Hambre Valley Groundwater Basin in the county of Contra Costa. The potential beneficial uses of this groundwater resource according to the Basin Plan include:

- Municipal and domestic water supply;
- Industrial process water supply;
- Industrial service water supply; and
- Agricultural water supply.

Water Quality Impacts

Caltrans performed studies to monitor and characterize highway storm water runoff throughout the State. The “Final Report of the Caltrans BMP Retrofit Pilot Program” identified “Pollutants of Concern” produced from Caltrans’ projects. These pollutants are phosphorus, nitrogen, copper (total or dissolved), lead (total or dissolved), zinc (total or dissolved), sediments, general metals (unspecified metals), and litter. Sources of these pollutants are natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, trash and falling debris from motorists and wear from break pads. The primary pollutant of concern for this project is sediment

The estimated total disturbed soil area (DSA) is calculated as 2.5 acres and the net increased impervious area as 0.0 acre. Soil will be temporarily disturbed for staging and construction activities.

Due to work proposed at the drainage canal close to bent number 10 (See Figure 2), a 401 certification is anticipated for this project. Early discussion should be initiated regarding the handling and disposal of water during the design phase. The ground water will be tested for potential contamination as a part of the Hazardous Waste Site Investigation. Proper handling and disposal of the ground water should be based on the levels of contaminants reported in the Site Investigation Report.

Avoidance, Minimization and/or Mitigation Measures

Section 401 of the Clean Water Act

A 401 Water Quality Certification from Region 2, RWQCB is anticipated due to the proposed construction in the vicinity of the Peyton Slough and the Carquinez Strait.

Section 402 of the Clean Water Act

According to Caltrans' National Pollution Discharge Elimination System (NPDES) permit and the Construction General Permit, Best Management Practices (BMPs) will be incorporated to reduce the discharge of pollutants during construction as well as permanently to the Maximum Extent Practicable (MEP). These BMPs fall into three categories, Temporary Construction Site BMPs, Design Pollution Prevention BMPs, and Permanent Treatment BMPs.

(a) Construction Site BMPs

Construction Site BMPs are implemented during construction activities to reduce pollutants in storm water discharges throughout construction. Temporary silt fences, concrete washouts, stockpile cover, stabilized construction entrances/exits and temporary soil stabilizers are some of the temporary erosion and water pollution control measures that may be utilized in combination in order to prevent and minimize soil erosion and sediment discharges during construction. Given that the anticipated soil disturbance is greater than 0.4 hectares (1 acre), a Storm Water Pollution Prevention Plan (SWPPP) will be developed during construction. This dynamic document addresses the deployment of various erosion and water pollution control measures that are required commensurate to changing construction activities.

(b) Permanent Design Pollution Prevention BMPs

Design Pollution Prevention BMPs are permanent measures to improve storm water quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces. Erosion control measures will be provided on all disturbed areas to the extent feasible. These measures can utilize a combination of source and sediment control measures to prevent and minimize soil erosion from disturbed areas. Source controls utilize erosion control netting in combination with hydroseeding.

The biodegradable netting is effective in providing good initial mechanical protection while the seeds applied during the hydroseeding operation germinate and re-establish vegetation. Other forms of source control such as tacked straw may also be used when applicable. Sediment controls such as biodegradable fiber rolls can be used to retain sediments and to help control runoff from disturbed slope areas. These measures would be investigated during the design phase.

Outlet protection and velocity dissipation devices placed at the downstream end of culverts and channels are another form of Design Pollution Prevention BMPs that reduce runoff velocity and control erosion and scour. Implementing these devices for this project would be further investigated during the design phase.

For this project treatments may include Erosion Control (Type D) application to all disturbed soil areas and Fiber Roll installation along disturbed slopes to act as slope interrupter devices.

The project design is to minimize areas of disturbance to accommodate improvements and retain the existing vegetation to the maximum extent possible (MEP). Marsh areas that are environmentally sensitive are known to exist within the project limits. Measures to avoid and minimize disturbance to environmentally sensitive areas will be included. Measures will include implementing the exclusionary fencing in these environmentally sensitive areas with a high visibility (HV) fence fabric or a combination silt fence/HV

fence fabric to reduce, or eliminate the potential of sediment and other pollutant concentrations from construction activities.

(c) Permanent Treatment BMPs

Treatment BMPs are permanent devices and facilities treating storm water runoff. Department approved Treatment BMPs are Biofiltration Swales, Infiltration Basins, Detention Basins, Traction Sand Traps, Dry Weather Flow Diversions, Media Filters, Gross Solids Removal Devices (GSRDs), Multi-chamber Treatment Trains, and Wet Basins.

Due to the scope of work, this project is exempt from incorporating permanent Treatment BMPs.

2.1.3 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under the California Environmental Quality Act.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department’s Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. The current policy is to use the anticipated Maximum Credible Earthquake (MCE), from young faults in and near California. The MCE is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

Affected Environment

The District Preliminary Geotechnical Report was prepared to present existing geological and geotechnical information and concerns within the project limits. The report was prepared January 20, 2009 by the Department Engineering Geologist in the Office of Geotechnical Design-West.

The project is located in the northern portion of Contra Costa County along the Carquinez Strait, which is a narrow tidal strait that connects San Pablo Bay to Suisun Bay. The project site is on marshland just east of the base of Bulls Head Point and to the west of Pacheco Creek. The elevation is approximately sea level.

Geology

The project lies on the eastern edge of the central Coast Ranges geomorphic province. Located on the eastern region of the Carquinez Strait, the project location is in the southern area of this region. The Carquinez strait connects Suisun Bay to the east and San Pablo Bay to the west. The Carquinez Strait was created by erosion about 650,000 to 600,000 years ago when drainage from the Central Valley spilled over the Colma Gap near San Francisco.

Northwest oriented ridges and valleys, faults and folds characterize the regional geology of the area. Numerous west and southwest trending primarily dip slip faults have been mapped on regional geologic maps between the active Concord fault to the east of the project and the potentially active Franklin Fault to the west of the project. Sedimentary rocks from the Cretaceous Period of the Great Valley sequence occur to the east and south of the project. Sandstone and pebble conglomerate with thin shale interbeds of the Paleocene age Martinez formation overlie the Great Valley Sequence in the area. These rocks occur in the low hills to the north and west of the project. The project is on the southwest side of a large embayment where tidal marsh deposits overlie the bedrock. These soft bay mud deposits are from approximately 7 feet to 46 feet thick at the project site. Bedrock in the area has been folded. Sedimentary beds in the area dip steeply to the west and southwest.

Environmental Consequences

Seismicity

The project is located within the seismically active San Andreas Fault system. The San Andreas Fault system is a series of active faults that comprise a transpressional crustal plate boundary. The fault system separates the North American plate on the east from the Pacific plate on the west. Five active faults located near the project are capable of producing a major seismic event that could affect the project. These faults are the San Andreas, Hayward, Calaveras, Rogers Creek, Marsh Creek-Greenville and Concord Green Valley. Active faults are those with most recent movement in the past 11,000 years. In addition to these active faults, the nearby South Hampton Fault is potentially active and capable of producing an earthquake that can affect the project. Potentially active faults are those with most recent movement in the Quaternary period, 2 to 3 million years ago. The west to southwest trending dip slips faults in the area may not be seismogenic. They probably rupture sympathetically during large earthquakes on nearby strike slip faults of the San Andreas fault system.

The following table (Table 3) summarizes the nearby faults, their maximum credible earthquakes (MCE), the distance from the project and the estimated peak ground accelerations (PGA) that can be expected at the project during a maximum credible earthquake.

A small segment of a series of east trending dip slip faults is known to exist crossing the project on the northwest of the project. The fault is shown as concealed beneath Quaternary age bay mud. The fault is not considered active. It may rupture sympathetically during a large earthquake on one of the nearby active faults. Offsets are likely to be small, on the order of centimeters.

Table 3 – Faults and Maximum Credible Earthquakes (MCE)

Fault	Distance from project	MCE	PGA
Green Valley	11 miles east-northeast	6.75	0.23g
Concord	1.6 miles east	6.5	0.50g
Southampton	2.5 miles west	6.25	0.41g

Avoidance, Minimization, and/or Mitigation Measures

Since the original Log Of Test Borings (LOTB) were advanced in 1960, exploration could be necessary to determine, soil types and strengths and structural conditions in the rocks. Several investigative methods may be used, including but not limited to: soil borings, rock coring, cone penetrometry studies and geophysical studies. Laboratory testing may be required to determine soil strength, permeability and content.

2.2 Biological Environment

A Natural Environment Study (NES) and Preliminary Wetland Delineation Report were prepared for the Mococo Overhead Seismic Restoration Project. This section presents findings of these reports and studies for vegetation and wildlife communities, wetlands and other waters of the U.S., threatened and endangered species, and invasive vegetative species within the study area.

The NES was completed for this project in March of 2010. The project site is located entirely within Caltrans' right of way. The Action Area consists of all the work along I-680 (mainline) and the Marina Vista Ave. on and off ramps. All work will be restricted to existing maintenance roads bordering both sides of the superstructure.

2.2.1 WETLANDS AND OTHER WATERS

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the USACE with oversight by the Environmental Protection Agency (EPA).

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

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code

require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

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

Affected Environment

The project is located in the northern portion of Contra Costa County along the Carquinez Strait, which is a narrow tidal strait that connects San Pablo Bay to Suisun Bay. A seasonal brackish marsh and channel lies within the project footprint. The area goes completely dry in the summer. Oil refineries that occupy all land that is not marsh surrounding the site dominate land use. Refinery pipelines run northwest to southeast through the site. The Shell refinery uses the area to handle storm water overflows from ponds inside their facilities. Storm water from the refinery floods the area various times during the rainy season. The Union Pacific Railroad runs north of the site through Bulls Head Point and across the strait.

Wetland habitats occurring within the study area include a tidal channel. The channel runs east to west and joins a culvert, which connects to a series of gates and channels in Shell Marsh. In June 2009, Shell Marsh Technical Advisory Committee (SMTAC) restored the tidal action to the McNabney Marsh, Shell Marsh and Peyton Slough. Caltrans is working with the Shell Refinery, Contra Costa Mosquito Vector Control District, Mt. View Sanitary District and Rhodia, Inc., to isolate the Caltrans project area and maintain it in the pre-tidal hydrologic and vegetative condition until construction is completed.

Environmental Consequences

Permanent impacts resulting from the construction of the new CISS piles and new abutment is estimated to be 4,748 square feet (0.109 acre) of USACE jurisdictional wetlands. Temporary impacts are estimated to be approximately 155,850 square feet (3.58 acres) of temporal loss of marsh habitat through the installation of a temporary access roads and staging areas for materials and equipments.

Avoidance, Minimization, and/or Mitigation Measures

During the design phase of the project, avoidance of permanent impacts will be refined further. Measures to avoid and minimize damage include limiting the construction window to one season and clearly defining project boundaries during construction. Project boundaries will be defined with environmentally sensitive area (ESA) fencing. Access roads will be lined with geo-fabric and aggregate rock to limit erosion and compaction. After construction, the geo-fabric and aggregate will be removed from the project site.

All temporary impacts to the wetland will be restored to their preconstruction condition to the maximum extent feasible. A 404 permit from the USACE is required because construction and equipment staging will occur within a jurisdictional wetland.

Wetlands Only Practicable Finding

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

2.2.2 PLANT SPECIES

Regulatory Setting

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

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

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

Affected Environment

The project is within the range of soft bird's beak according to a California Natural Diversity Database (CNDDDB) database search. Soft bird's beak is a federally listed endangered species. The CNDDDB mentions that the species was extirpated from the area, which includes the project site. It was last observed in the area in 1881, which was recorded in 1978. Surveys were conducted again in 1986 and the results showed that there is no suitable habitat for the plant species in the area. In 1986 and 1993 further surveys were conducted and again the results showed that the species was not present in the area. After reviewing the CNDDDB and current field visits, it is unlikely that the soft bird's beak would be found within the project vicinity. Known occurrences near the project location have been extirpated and the marsh goes dry in the summer months.

Plant surveys were conducted on March 12, March 15 and March 27, 2009 within the project location. No rare plants were found during either of the surveys.

Environmental Consequences

The Department did not identify sensitive plant species or potential sensitive plant species' habitat within the project area and proposes that there will be no effect to the soft bird's beak.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans biologists did not identify sensitive species of plants in the project area or habitat for sensitive plant species. If identified in future surveys, Caltrans will place an environmentally sensitive area (ESA) fence around the populations identified by an accredited biologist during plant surveys.

2.2.3 ANIMAL SPECIES

Regulatory Setting

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

Federal laws and regulations pertaining to wildlife include the following:

National Environmental Policy Act;

Migratory Bird Treaty Act; and

Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the following:

California Environmental Quality Act;

Sections 1600 – 1603 of the Fish and Game Code; and

Section 4150 and 4152 of the Fish and Game Code

Affect Environment

The landscape at the project site consists of approximately five acres of seasonal tidal brackish marsh surrounding a channel, upland habitat, and some trees. The channel is connected by a culvert to Shell Marsh, which is located north and east of the project on the eastern side of I-680, north of Marina Vista Avenue. On Tuesday, June 16, 2009, the Shell Marsh Technical Advisory Committee (SMTAC) restored tidal action to Shell Marsh, McNabney Marsh and Peyton Slough. On Tuesday, June 23, 2009, SMTAC closed some or all of the tide gates that allow tidal flow into these marshes.

In addition to the wetland vegetation growing at the project site, much of the vegetation in the project area is characteristic of ruderal vegetation found along highways in this region. Within the project area, there are several native and non-native tree species. Biologists located a Blue Elderberry plant, which is a host for the federally threatened valley elderberry longhorn beetle, but the project area is outside of the beetle's habitat range. Therefore,

Caltrans has made the determination this project will have no effect on the valley elderberry longhorn beetle.

The trees and shrubs in the project site may provide nesting, foraging and resting habitat for a variety of bird species, including Red-tailed hawk and the Scrub jay. The Migratory Bird Treaty Act makes it unlawful at any time, by any means, or in any manner, to pursue, hunt, take, capture or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds.

Common animal species identified by Caltrans' biologist include: the Red-winged blackbird, Scrub jay, Great egret, Red-tailed hawk, House finch, Turkey vulture, Northern harrier, American crow, Common raven, Yellow-rumped warbler, White-tailed kite, Brewer's blackbird, American kestrel, Black-necked stilt, Northern mockingbird, Long-billed curlews and Whimbrel.

Essential Fish Habitat (EFH) includes waters and substrate necessary for fish spawning, breeding, feeding or growth to maturity. No EFH is identified within the project site.

Environmental Consequences

Caltrans has identified two types of potential temporal impacts: (1) physical habitat disturbance, and (2) noise-related disturbance to special-status species.

Caltrans anticipates 155, 850square feet (3.58acres) of temporal loss of marsh habitat through the installation of a temporary access roads and staging areas for materials and equipment. Caltrans anticipates a temporal loss due to potential noise disturbances from pile driving and construction activities. Potential effects of noise on terrestrial wildlife can be divided into three categories: (1) behavioral and physiological effects, (2) damage to hearing from acoustic over-exposure, and (3) masking of communication signals and other biologically relevant sounds. The mechanisms of hearing loss are the same in all mammals (National Institute of Health 1990) but are different in birds, which can regenerate sensory hair cells of the inner ear, allowing them to withstand much higher noise levels than mammals. Some small mammals have been known to lose hearing due to exposure to high noise levels.

Installation of the piles with an impact driver could produce peak in-air noise levels of 119 Lmax dB at a distance of 23 feet. Much of the noise energy produced would be below this maximum. Noise at peak intensity will attenuate to near-background highway noise (83 Lmax dB) at a distance of 1500 feet. Any individual subjected to sufficient noise has the potential to suffer temporary or permanent hearing loss. Permanent hearing loss from construction noise on birds, however, is not expected to be a significant effect.

Avoidance, Minimization and/or Mitigation Measures

The measures listed below are best management practices that may be applied to non-listed species that may be present in the project area. Specific measures to avoid take of listed species will be discussed in the Threatened and Endangered Species section.

Contractors will implement dust control measures during construction by regularly watering the construction access areas and disturbed soil areas with organic soil stabilizers. This will minimize airborne dust and soil particles generated from graded areas. Regular truck watering will be a requirement of the construction contract. In addition, for disturbed soil areas, an organic tackifier will be included in the contract special provisions and the project

SWPPP to control dust blowing from the right-of-way or out of the construction area during construction. Guidelines for truck watering will be established to avoid any excessive runoff that could flow into contiguous areas. Any material stockpiles will be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion.

To prevent animals from scavenging onsite, food scraps and all food-related trash such as wrappers, cans, and bottles will be disposed of in closed containers and removed at least once a day from the entire project site.

No firearms will be allowed on the project site except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.

To prevent harassment, injury, or mortality of any species or destruction of their burrows by dogs or cats, no canine or feline pets will be permitted in the action area.

All fueling and maintenance of vehicles and other equipment will take place at least 65 feet from any riparian or aquatic habitat.

All grindings and asphalt concrete waste will be hauled off-site, to an environmentally cleared location. It will be the responsibility of the construction contractor to obtain the necessary environmental clearance.

2.2.4 THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Game (CDFG) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the

FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Affected Environment

The information in this section is from the Natural Environment Study (NES) Mococo Overhead Seismic Restoration Project, March 2010.

According to the USFWS and CNDDDB species lists and an evaluation of the project site, Caltrans biologists determined the following animal species need further evaluation and consultation with the regulatory agencies: (1) California clapper rail and (2) Salt marsh harvest mouse (SMHM). Caltrans biologists determined the following animal species need further evaluation: (1) California black rail; (2) Longfin Smelt; (3) Delta Smelt; (4) Sacramento Splittail; (5) Chinook salmon; (6) Central Valley spring-run Chinook salmon, winter-run Chinook salmon and Central Valley fall and late-fall Chinook salmon and (7) Central Valley steelhead and Central California Coastal steelhead

Affected Environment

SALT MARSH HARVEST MOUSE (SMHM) (REITHRODONTOMYS RAVIVENTRIS)

The salt marsh harvest mouse is listed as an endangered species at both the federal and state levels. The SMHM is a cover-dependent species that inhabits tidal and diked salt marshes characterized by dense stands of pickleweed or the peripheral halophyte zone. Some daily movement from marsh to high-elevation grasslands may occur in spring or summer or when adjacent grasslands provide protection from predators during high tide or flood events. The salt marsh harvest mouse is specially adapted to tolerate high concentrations of salt in food and water. The mice have been known to drink and survive on saltwater or brackish water for long periods. Salt marsh harvest mice are thought to feed on seed, grass, and forbs, including pickleweed and saltgrass. In winter, they are known to consume fresh green grasses.

Barriers to movement surround the wetland, and it is unlikely that the salt marsh harvest mouse may move from suitable habitat in the vicinity to the marginal quality pickleweed within this wetland. Based on field surveys, passage barriers, and a visual assessment of aerial imagery, it is clear that there is no connectivity between areas of known occurrences to this area of potentially suitable, though marginal, habitat. Furthermore, the marsh goes dry during the summer months, thus degrading the potential habitat even further.

The location of suitable habitat and known occurrences was investigated to determine the potential for occurrence. The closest SMHM are known to occur approximately 0.2 miles east of the project area across I-680 and Waterfront Road in Shell Marsh.

In 2005, H.T. Harvey & Associates conducted a study for the South Bay Salt Pond Restoration Project on the existing biological conditions in the area, including areas within the BSA. The report classified the narrow pickleweed stands north and south of the BSA near the eastern abutment as barriers to salt marsh harvest mouse movement, based on the fact that the farthest the mouse has been observed to move through water is 13 to 16 feet and over bare ground on land is 16 feet. The maximum distance the salt marsh harvest mouse has been observed to move through brackish or freshwater marsh, vegetation cover is approximately 656 feet. Based on these observed movements, it has been hypothesized that areas with stretches of bare ground more than 16 feet, stretches of water more than 13

feet and stretches of freshwater or brackish marsh more than 820 feet represent barriers to movements for the salt marsh harvest mouse.

Marina Vista off-ramp separates the project area from the known occurrences in Shell Marsh, approximately 0.2 miles from the project area. The road distance with no cover for the SMHM is approximately 93 feet. The culvert that connects Shell Marsh to the project area does not allow for habitat connectivity due to its year round inundation. Directly west of Marina Vista off-ramp, approximately 730 feet east of the project area, is suitable SMHM habitat. There is approximately 430 feet of bare ground separating this suitable SMHM habitat and the suitable SMHM habitat at the project location. Currently, the majority of the project area is inundated with brackish water.

Environmental Consequences

Potential direct impacts, such as injury or mortality, on individual SMHM will be avoided through implementation of the proposed avoidance and minimization measures. The proposed project could still have direct or indirect impacts, due to pile-driving noise and disturbance. Most prominently, noise could cause temporary or permanent hearing loss. Installation of the piles with an impact driver could produce peak in-air noise levels of 119 Lmax dB at a distance of 23 feet. Much of the noise energy produced would be below this maximum. Noise at peak intensity will attenuate to near-background highway noise (83 Lmax dB) at a distance of 1500 feet.

Some small mammals have been known to lose hearing due to exposure to high noise levels, although this varies greatly by species. Since mechanisms of hearing loss are the same in all mammals, any SMHM subjected to sufficient peak noise has the potential to suffer temporary or permanent hearing loss. However, the nearest known populations of SMHM to pile-driving locations are approximately 0.2 mile away. Caltrans has determined this distance to be far enough away that impacts to SMHM should not occur. Limiting pile driving to 10 days would significantly reduce this disturbance.

The proposed project would result in the permanent loss of a small area of marginally suitable pickleweed habitat. The area of permanent loss would be less than 4,748 square feet (less than 0.109 acre), although temporary loss during construction would occur in this entire area.

Through the successful implementation of avoidance and minimization measures, Caltrans proposes that the proposed project is likely to adversely affect but not jeopardize the continued existence the SMHM under FESA, but Caltrans anticipates no take of SMHM under CESA.

Avoidance, Minimization, and/or Mitigation Measures

Implementing the following avoidance and minimization measures, will avoid and/or minimize potential negative effects to SMHM populations and habitat in and around the project footprint.

Construction Monitoring- A consultant approved by the USFWS will be present onsite to monitor for salt marsh harvest mice prior to and during construction activities. The biological monitor will have the authority to stop work if deemed necessary for any reason to protect the species. If a SMHM is observed in the work area, then the biological monitor will stop work immediately until the species leaves the work area on its own volition. If the species does not leave the work area, work will not be reinitiated until after the USFWS and CDFG

have been contacted and a decision reached on how construction activities could proceed. The project resident engineer or construction inspector will consult with the biological monitor on how to proceed. The biological monitor will also inspect the MPB along the margins of project work areas.

Prior to construction, a temporary SMHM-proof barrier will be erected to prevent the potential movement of individuals into the construction zone. The mouse proof barriers (MPB) fences will consist of corrugated metal fencing. The fence will, at a minimum, be 1 foot taller than adjacent vegetation and buried 1 foot deep into the soil to prevent mice from burrowing under them. To ensure proper exclusion, the MPB must terminate at permanent passage barriers (e.g., permanent water, high levee) at both ends. The MPB will be installed in such a manner so as not to exclude SMHM from upland refuge habitat in the area.

Vehicle Use - Vehicle use near suitable habitat for the SMHM will be minimized to the maximum extent practicable. Vehicles will remain on paved roads and speeds will be limited to 10 miles per hour. No night driving or driving during periods of diminished visibility (e.g., heavy fog, a window of 1 hour before sunset to 1 hour after sunrise) will be permitted, if there is a need for night work.

Revegetation - All temporarily affected areas with suitable habitat for the SMHM will be replanted with native vegetation. This restoration plan will be monitored for three calendar years. Furthermore, Caltrans is anticipating restoring tidal action to the area. If, through monitoring, it is determined that the marsh restoration activities have resulted in the take of one or more SMHM, Caltrans shall work with the CDFG and USFWS to evaluate methods to avoid additional project-related impacts to this species.

CALIFORNIA CLAPPER RAIL (RALLUS LONGIROSTRIS OBSOLETUS)

Affected Environment

The California clapper rail is currently listed as an endangered species by the USFWS and CDFG. It is listed as fully protected under CDFG which means CDFG cannot allow any hunting, pursuing, killing, or capturing of this species. No critical habitat has been designated for the California clapper rail. California clapper rails are year-round (non-migratory) San Francisco Bay residents, which occur primarily in the emergent salt and brackish wetlands that also provide salt marsh harvest mouse habitat. Loss of the coastal salt marsh foraging habitat was the primary reason for its ESA listing.

In southern and central San Francisco Bay and along the perimeter of San Pablo Bay, California clapper rails typically inhabit salt marshes dominated by pickleweed and Pacific cordgrass. Pacific cordgrass dominates the middle marsh zone throughout the southern and central bay. California clapper rails have historically used Pacific cordgrass stands as nesting habitat. Recent studies, however, have documented California clapper rails' use of the hybrid as nesting habitat, although evidence suggests the hybrid may serve as an ecological trap because the characteristic lower elevation stands of the hybrid are subject to tidal inundation.

California clapper rails are secretive and difficult to observe in dense vegetation but once flushed, they can frequently be approached. They prefer walking or running to other forms of locomotion. When flushed, they normally fly only a short distance before landing. They can swim well, although swimming is used only to cross-sloughs or escape immediate threats at high tide. California clapper rails are most active in early morning and late evening, when

they forage in marsh vegetation in and along creeks and mudflat edges. They often roost at high tide during the day, relying on the surrounding wetland mud and water for protection and isolation from predators. California clapper rails lay their eggs on the ground in a shallow nest and build a canopy using dead marsh vegetation. They also build “brood nests,” which are ground nests for periods of high tide with no canopy cover. Breeding season for the California clapper rail is typically March through July.

Caltrans has conducted field surveys in the project footprint for the California clapper rail. There are patches of pickleweed, which is potentially suitable foraging habitat for the California clapper rail within the project footprint. This area provides marginally suitable nesting habitat for the California clapper rail.

Several documented occurrences of this species are known approximately 1.0 mile away in the nearby Shell Marsh. Visual assessments of aerial photography revealed suitable foraging habitat in dense stands of pickleweed across I-680 in Shell Marsh and to the north near the Carquinez Strait. The presence of suitable foraging habitat near the project footprint suggests California clapper rails may be present near the project area. Because this species could be negatively affected by construction noise, it must be assumed present in the project footprint.

Environmental Consequences

No direct impact to suitable foraging habitat for the California clapper rail through the destruction and/or alteration of pickleweed habitat is anticipated. The pickleweed and cordgrass habitat located 30' from the drip line of the proposed overhead structure will be fenced off as described previously.

By following the avoidance and minimization efforts, the project will not result in direct harm or injury to individuals. The mouse-proof barrier (MPB) fence will be particularly effective for the California clapper rail because, as ground foragers, the species tends to prefer walking rather than flying when moving amongst marsh vegetation.

Potential indirect impacts to the species include noise caused by construction, which could disturb nesting birds nearby. The three main categories of noise impacts on birds are: (1) behavioral impacts, (2) damage to hearing, and (3) masking of communication signals. Masking is of greatest concern for the California clapper rail because suitable foraging and nesting habitat exists within auditory range of the project area. However, limiting pile driving to 10 days would significantly reduce this disturbance.

Caltrans proposes that the project is likely to adversely affect but not result in jeopardy of the California clapper rail under FESA. Caltrans does not anticipate any take under CESA law through injury or mortality.

Avoidance, Minimization and/or Mitigation Measures

Implementing the following avoidance and minimization measures will ensure that project activities avoid and/or minimize potential negative effects to California clapper rail populations and habitat within the project footprint.

A preconstruction survey for California clapper rail in the area will be conducted no more than 30 days before the start of work. The area surveyed will include the work area and an additional 100-yard zone around the work area. If a California clapper rail (adult, juvenile [fledged young of that year], or chick [flightless usually less than 28 days old]) or nest is

within the surveyed area, no work will occur and the USFWS will be contacted. If chicks are present in the work area, no work will be conducted regardless of the survey results.

Prior to construction, a temporary barrier fence will be erected to prevent the potential movement of California clapper rail into the construction zone. The same MPB described for the salt marsh harvest mouse (SMHM) would be sufficient for the California clapper rail because they are ground foragers. The MPB will consist of corrugated metal fencing a minimum of 1 foot taller than adjacent vegetation, with environmentally sensitive area (ESA) fencing in front to increase visibility to construction traffic. The MPB fences will be installed to protect areas identified as sensitive for California clapper rail. The California clapper rail will also receive some protection from additional exclusionary fencing along the access roads into the project area.

A qualified biologist approved by the USFWS/CDFG will be present onsite to monitor for California clapper rail during construction activities on land. The biological monitor will have the authority to direct the Resident Engineer to stop work, if deemed necessary for any reason, to protect federally listed species. If a California clapper rail is observed in the work area, the biological monitor will stop work immediately until the rail leaves the work area of its own volition, and both USFWS and CDFG will be notified. If the California clapper rail does not leave the work area, work will not be reinitiated until after the USFWS and CDFG have made a decision on how to proceed with further construction activities. The project Resident Engineer or Construction Inspector will consult with the biological monitor on how to proceed accordingly.

Vehicle use near suitable habitat for the California clapper rail will be minimized to the maximum extent practicable. Vehicles will remain on designated roads and speeds will be limited to 10 miles per hour. No night driving or driving during periods of diminished visibility (e.g., heavy fog, a window of 1 hour before sunset to 1 hour after sunrise) will be permitted, if there is a need for night work.

All temporarily affected areas with suitable habitat for the California clapper rail will be replanted with native vegetation. This restoration plan will be monitored for three calendar years. Furthermore, Caltrans will restore tidal action to the area. If, through monitoring, it is determined that marsh restoration activities have resulted in the take of one or more California clapper rail, Caltrans shall work with the CDFG and USFWS to evaluate methods to avoid additional project-related impacts to this species.

CALIFORNIA BLACK RAIL (*LATERALLUS JAMAICENSIS COTURNICULUS*)

Affected Environment

The California black rail is listed as a threatened species under the California Endangered Species Act. Prior to its listing as a state threatened species in 1971, it was designated as a Fully Protected species in California. It currently retains both a state threatened and state fully protected species. The California black rail has no federal regulatory status; however, it is on the USFWS Region 1 list of Birds of Conservation Concern (BCC).

Although this species prefers dense pickleweed-dominated marsh habitat, it can be found in freshwater and brackish marshes as well. Preferred breeding habitat includes areas of mature, higher elevation marshes dominated by bulrush and pickleweed. Nests are typically found on or several inches above the ground in stands of pickleweed and tall grasses, often towards the upper limits of the tidal flooding zone. Breeding season starts as early as February and egg laying peaks around May 1. Non-breeding season is typically from

August through February. A relatively narrow range of conditions is required for occupancy and successful breeding. Too much water will prevent nesting and too little water will lead to abandonment of the site until the water source is reestablished. California black rail occurs at a number of sites in the San Francisco Bay Area, although they are more concentrated in the northern part of the region.

No focused surveys were conducted for this species within the project footprint. However, suitable foraging and nesting habitat is present in the pickleweed marsh. Documented occurrences of this species are located approximately 0.3 miles away across the mainline and railroad tracks in the marsh adjacent to the Carquinez Strait. Visual assessments of aerial photography revealed suitable habitat in dense stands of pickleweed at the nearby Shell Marsh and further north of the project. The presence of suitable habitat within and near to the project site suggests that California black rail may be present near or in the project area. Because this species could be negatively affected by construction noise, it must be assumed present within the project footprint.

Environmental Consequences

No direct impacts to suitable foraging habitat for the California black rail through the destruction and/or alteration of pickleweed habitat is anticipated. The pickleweed habitat 30' outside of the overhead structure will not be impacted. In addition, other ruderal vegetation and the marginal pickleweed within the project area is not considered habitat for the California black rail, so damage to this habitat would not affect this species.

Construction work will not result in direct harm or injury to individuals and by following the avoidance and minimization efforts, direct harm or injury from construction equipment would be avoided.

Potential indirect impacts to the species include noise caused by construction, which could disturb nearby nesting birds. The three main categories of noise impacts on birds are: (1) behavioral impacts, (2) damage to hearing, and (3) masking of communication signals. Masking is of great concern for the California black rail because suitable foraging and nesting habitat exists within auditory range of the project footprint. However, limiting pile driving to 10 days, will significantly reduce this disturbance.

Avoidance, Minimization and/or Mitigation Measures

Because the California black rail uses the same habitat as the California clapper rail and SMHM, the measures listed previously will ensure that any direct or indirect impacts to California black rails are avoided or minimized. In addition, focused preconstruction surveys will be conducted within the project footprint, if work will occur during the nesting season (February 1 through August 31). A preconstruction survey for California black rail in the area will be conducted no more than 30 days before the start of work. The area surveyed will include the work area and an additional 100-yard zone around the work area. If a California black rail (adult, juvenile [fledged young of that year], or chick [flightless usually less than 28 days old]) or nest is within the surveyed area, no work will occur and CDFG will be contacted. If chicks are present in the work area, no work will be conducted regardless of the survey results.

LONGFIN SMELT (*SPIRINCHUS THALEICHTHYS*)

Affected Environment

On May 6, 2008 a petition by the Bay Institute, Center for Biological Diversity, and the Natural Resources Defense Council to list Longfin smelt (*Spirinchus thaleichthys*) was found by the USFWS to present sufficient information about the imperiled condition of the species to initiate a status review and consider its listing under the federal endangered species act. That action opened a 60-day public comment period closing on July 7, 2008. Following the closure of the public comment period, the USFWS will complete a 12month review of the status of the species. The CDFG Commission listed longfin smelt as threatened under CESA on March 5, 2009.

Longfin smelt are a small silvery fish which can be distinguished from other smelts by their long pectoral fins, an incomplete lateral line. Mature males are generally darker colored than females, have an enlarged and more rigid dorsal and anal fin, and have breeding tubercles on their paired fins. In California Longfin smelt are anadromous species that can tolerate salinities ranging from freshwater to nearly pure seawater.

Populations in California were historically known from the San Francisco Estuary, Humboldt Bay, Eel River Estuary, and the Klamath River estuary. In the San Francisco estuary Longfin smelt are rarely found upstream of Rio Vista or Medford Island in the Delta. Adults can occur seasonally in the South San Francisco Bay but are more commonly known to be concentrated in Suisun, San Pablo, and North San Francisco Bays. They are regularly seen in the Gulf of the Farallones outside the Golden Gate Bridge and a specimen has been identified from Monterrey, California. The species is also known from bays and estuaries from Oregon to Alaska.

Longfin smelt are euryhaline, nektonic and anadromous moving into freshwater to spawn. They are found in a wide range of salinities from freshwater to seawater with a preference in the range of 15-19 ppt. They can occupy water as warm as 20 °C in summer months but prefer 15-18 °C waters. The principal food organism of Longfin smelt is the opossum shrimp (*Neomysis mercedis*). Other copepods and crustaceans also are commonly preyed upon by Longfin smelt. Longfin smelt can move up and down within the water column in order to maintain their position within the mixing zone of the estuary and to seek their prey, which vertically migrates diurnally.

Longfin smelt congregate for spawning in the upper end of Suisun Bay and lower and middle Delta especially in the Sacramento River channel and sloughs. The Sacramento Longfin smelt has a very prolonged spawning season with spawning occurring as early as November into June. The peak breeding season occurs between February and April with larger and older Longfin smelt spawning later in the year. Males are first to move into areas with gravel or sandy substrate where rocks and aquatic plants are present. Spawning occurs at night, when female smelt release an average of 5,000-24,000 adhesive eggs. Longfin smelt typically die after spawning though a few females may survive another year. The eggs hatch in around 40 days at 7° C and the larvae are transported downstream into the estuary. Newly hatched larvae are from 5-8 mm in length. Larvae are mobile and move according to salinity preferences. In 30-60 days, the larvae morphologically change into juvenile fish. Most growth takes place in the first 10 months of life when they reach approximately 6-7 cm standard length. The largest smelt are approximately 9-11 cm and typically are 3-year-old females.

There is a strong positive correlation between winter and spring Delta outflows and Longfin abundance the following year. There is also a strong correlation between juvenile survival in the San Francisco Estuary and Delta outflow. This likely as a result of increased rates of transport of juveniles into preferable rearing habitats in Suisun with higher outflows from the Delta. Historically in the San Francisco Estuary, there were large fluctuations in Longfin abundances. Numbers typically fell to their lowest abundances following drought years and recovered during wet water years. However, despite good Delta outflows in 1995-1999, smelt populations remained relatively low. This decline in Longfin abundance was similar to that for other Delta fishes including Delta smelt but to an even great extent.

No focused surveys were conducted for this species within the project footprint. Suitable spawning and rearing habitat is present nearby within Carquinez Strait. Caltrans reviewed the, URS Fisheries Study Results of Peyton Slough and its associated wetlands, dated December 4, 2009. In this report, surveys were conducted from 1986 to 2009. No longfin smelt were reported. Presence of Longfin smelt at the project location is not anticipated.

Environmental Consequences

Presence of Longfin smelt at the project location is not anticipated. Caltrans believes Longfin smelt will not be present during dewatering due to the project site containing poor levels of dissolved oxygen and not retaining optimum temperature levels. It has been identified that there is no spawning habitat for Longfin smelt within the project site. According to the Fisheries Study Results, the presence of several predators has been found within the system, including striped bass and other centrarchids.

Based on the provided project description, planned avoidance and minimization measures, and background research, Caltrans believes that Longfin smelt will not be present at the project location during the initial dewatering and throughout construction. Caltrans believes that this project is not likely to adversely effect Longfin smelt within the project action area.

Avoidance, Minimization and/or Mitigation Measures

Presence of Longfin smelt at the project location is not anticipated. However, the contractor's NMFS/CDFG fish salvage plan will minimize impacts to all fish should there be Longfin smelt in the project site during dewatering. Prior to construction, Caltrans will provide the contractor's dewatering and fish salvage plan to NMFS/CDFG for final approval.

If Longfin smelt are found within the surveyed area, no work will occur and NMFS/CDFG will be contacted.

DELTA SMELT (HYPOMESUS TRANSPACIFICUS)

Affected Environment

Delta smelt was federally listed as a threatened species on March 5, 1993. Critical habitat for delta smelt was designated on December 19, 1994. The Sacramento-San Joaquin Delta Native Fishes Recovery Plan was completed in 1996. The Five Year Status Review for the delta smelt was completed on March 31, 2004. CDFG re-categorized Delta smelt from threatened to endangered status on August 7, 2008.

Delta smelt are slender-bodied fish that generally reach 60-70 mm standard length (SL), to a maximum of 120 mm SL. The mouth is small and the eyes are relatively large. Small, pointed teeth are present on the upper and lower jaws. Live fish are nearly translucent and have a steely-blue sheen to their sides. Delta smelt belong to the family Osmeridae, a more

ancestral member of the order Salmoniformes which also includes the family Salmonidae (salmon and trout).

Delta smelt are native (endemic) to the upper Sacramento-San Joaquin estuary (Delta). They occur in the Delta primarily downstream Isleton on the Sacramento River, Downstream of Mossdale on the San Joaquin River, and in Suisun Bay in the Western Delta. Adult Delta smelt immigrates into freshwaters for spawning into the Sacramento River upstream to the confluence with the Feather River, the Mokelumne River system, within Cache Slough region, the Central Delta, Montezuma Slough, Suisun Bay and Marsh, Carquinez Strait, the Napa River and Marsh, and the San Pablo Bay. It is unknown if Delta smelt in the San Pablo Bay are a permanent population or if they are distributed into the Bay during high outflow periods. Since 1982, the center of Delta smelt abundance has been the northwestern Delta in the channel of the Sacramento River. In any month, two or more life stages (adult, larvae, and juveniles) of delta smelt have the potential to be present in Suisun Bay. Delta smelt are also captured seasonally in Suisun Marsh.

Spawning taking place in fresh water at temperatures of about 7°-15° Celsius (C) however hatched larvae have been collected at temperatures of 15°-22 C. Temperatures that are optimal for survival of embryos and larvae have not yet been determined. Delta smelt of all sizes are found in the main channels of the Delta and Suisun Marsh and the open waters of Suisun Bay where the waters are well oxygenated and temperatures relatively cool, usually less than 20°-22° C in summer. When not spawning, they tend to be concentrated near the zone where incoming salt water and out flowing freshwater mix (mixing zone). This area has the highest primary productivity and is where zooplankton populations are usually most abundant. At all life stages, delta smelt are found in greatest abundance in the top 2 m of the water column and usually not in close association with the shoreline.

Delta smelt inhabit open, surface waters of the Delta and Suisun Bay, where they school. In most years, spawning occurs in shallow water habitats in the Delta. Shortly before spawning, adult smelt migrate upstream from the brackish-water habitat associated with the mixing zone to disperse widely into river channels and tidally-influenced backwater sloughs. Spawning locations appear to vary widely from year to year. Sampling of larval smelt in the Delta suggests spawning has occurred in the Sacramento River, Barker, Lindsey, Cache, Georgiana, Prospect, Beaver, Hog, and Sycamore sloughs, in the San Joaquin River off Bradford Island including Fisherman's Cut, False River along the shore zone between Frank's and Webb tracts, and possibly other areas (Wang 1991). In years of moderate to high Delta outflow, smelt larvae are often most abundant in Suisun Bay and sloughs of Suisun Marsh. Some spawning probably occurs in shallow water habitats in Suisun Bay and Suisun Marsh during wetter years. Spawning has also been recorded in Montezuma Slough near Suisun Bay and may occur in Suisun Slough in Suisun.

The spawning season varies from year to year, and may occur from late winter (December) to early summer (July). Spawning may take place from mid-February to late June or early July, with peak spawning occurring in late April and early May. A recent study of delta smelt eggs and larvae confirmed that spawning may occur from February through June, with a peak in April and May. Delta smelt spawn in shallow, fresh, or slightly brackish water upstream of the mixing zone. Most spawning occurs in tidally influenced backwater sloughs and channel edgewater. Although delta smelt spawning behavior has not been observed in the wild, some researchers believe the adhesive, demersal eggs attach to substrates such as cattails, tules, tree roots, and submerged branches in shallow waters.

Delta smelt feed primarily on planktonic copepods, cladocerans, and to a lesser extent insect larva. Larger fish may also feed on the opossum shrimp, *Neomysis mercedis*. The most important food organism for all sizes seems to be the copepod, *Eurytemora affinis*, although in recent years the exotic species, *Pseudodiaptomus forbesi*, has become a major part of the diet. Delta smelt are a minor prey item of juvenile and subadult striped bass, *Morone saxatilis*, in the Sacramento/San Joaquin Delta. They also have been reported from the stomach contents of white catfish, *Ameiurus catus*, and black crappie, *Pomoxis nigromaculatus* in the delta.

Delta smelt were once one of the most common pelagic (living in open water away from the bottom) fish in the upper Sacramento-San Joaquin estuary, as indicated by its abundance in DFG trawl catches. Delta smelt abundance from year to year has fluctuated greatly in the past, but between 1982 and 1992, their population was consistently low. The decline became precipitous in 1982 and 1983 due to extremely high outflows and continued through the drought years 1987-1992. In 1993, numbers increased considerably, apparently in response to a wet winter and spring. During the period 1982-1992, most of the population was confined to the Sacramento River channel between Collinsville and Rio Vista. This was still an area of high abundance in 1993, but delta smelt were also abundant in Suisun Bay. The actual size of the delta smelt population is not known. However, the pelagic life style of delta smelt, short life span, spawning habits, and relatively low fecundity indicate that a fairly substantial population probably is necessary to keep the species from becoming extinct.

According to several abundance indices, which provide information on the status of this species it was consistently at low population levels through the 1980's. These same indices also showed a pronounced decline from historical levels of abundance. Both 2001 the tow net survey (TNS) and the Fall midwater trawl (FMWT) abundance indices decreased from 2000 and the 2001 TNS delta smelt index was less than 1999 and 2000 but comparable to previous years (1995, 1997, and 1998). Both surveys exhibited an overall trend of decline in these years but this decline was more pronounced in the TNS where the 2001 delta smelt index was 95% lower than the greatest index of record in 1978.

No focused surveys were conducted for this species within the project footprint. Suitable spawning and rearing habitat is present nearby within Carquinez Strait. Caltrans reviewed the, URS Fisheries Study Results of Peyton Slough and its associated wetlands, dated December 4, 2009. In this report, surveys were conducted from 1986 to 2009. No Delta smelt were reported. Presence of Delta smelt at the project location is not anticipated.

Environmental Consequences

Presence of Delta smelt at the project location is not anticipated. Caltrans believes Delta smelt will not be present during dewatering due to the project site containing poor levels of dissolved oxygen and not retaining optimum temperature levels. It has been identified that there is no spawning habitat for Delta smelt within the project site. According to the Fisheries Study Results, several predators have been found within the system, including striped bass and other centrarchids.

Based on the provided project description, planned avoidance and minimization measures, and background research, Caltrans believes that Delta smelt will not be present at the project location during the initial dewatering and throughout construction. Caltrans believes that this project is not likely to adversely effect Delta smelt within the project action area.

Avoidance, Minimization and/or Mitigation Measures

Presence of Delta smelt at the project location is not anticipated. However, the contractor's NMFS/CDFG fish salvage plan will minimize impacts to all fish should there be Delta smelt in the project site during dewatering. Prior to construction, Caltrans will provide the contractor's dewatering and fish salvage plan to NMFS/CDFG for final approval.

If Delta smelt are found within the surveyed area, no work will occur and NMFS/CDFG will be contacted.

SACRAMENTO SPLITTAIL (*POGONICHTHYS MACROLEPIDOTUS*)

Affected Environment

Sacramento Splittail (*Pogonichthys macrolepidotus*) was listed a federal threatened species on February 8, 1999 (Fed. Reg., 1999) and was subsequently de-listed on September 22, 2003 (Fed. Reg., 2003). It is currently a Class 1 (qualifies as Threatened) California State species of special concern (SSC). Class 1 SSC species' conform to the state definition of a threatened or endangered species and could qualify for addition to the official state list of threatened or endangered species but listing maybe justifiably avoided or postponed, provided there are efforts to protect and enhance populations of these fishes.

Sacramento Splittail is a large fish of the cyprinid (minnows) family reaching approximately 12 inches (30 cm) in length. It is distinctive in having the upper lobe of the caudal fin larger than the lower lobe. Body shape is elongate with a blunt head and may have small barbells on either side of the sub-terminal mouth. These fish are silver colored on the lateral sides and olive grey dorsally. In breeding condition the caudal, pectoral, and pelvic fins become red-orange and males develop small white tubercles on the head. Both male and female splittail mature at approximately two years of age.

Splittail are native to the California Central Valley mainly found in sloughs, lakes and rivers. Historically they ranged within the Sacramento River watershed from Redding to the north and within the San Joaquin River watershed to the current location of Friant Dam in the south (Moyle, et al., 1995). Their current range in the Sacramento River is downstream of Red Bluff, Tehama County. They are also known from the lower reaches of the Feather and American Rivers, and within the San Joaquin River downstream of its confluence with the Merced River. They were also known in the Southern San Francisco Bay near Coyote Creek. Until the mid-1980's Splittail were common in San Pablo Bay and Carquinez Strait following high winter flows. Presently, splittail are principally found in the Sacramento-San Joaquin Delta estuary, especially the western Delta and Suisun Marsh where their population is correlated with outflows. They are also common in and around the marshy areas of Sherman Island and Big Break. In these locations, they are year-round residents concentrating in the dead-end sloughs that typically have small streams feeding into them. Populations are also found within San Francisco and San Pablo Bays, and the Napa and Petaluma Rivers.

Splittail are adapted for estuarine life with its fluctuating environmental conditions being particularly tolerant to high salinities. They are frequently found at salinities of 10-18 parts per thousand (ppt) with adults tolerant to salinities of up to 29 ppt for short durations. Generally, however, this species prefers lower salinities. Splittail are typically found at temperatures from 5 to 24° C but given acclimation can tolerate water temperatures up to 33 C for short durations. This species is also known to be tolerant to dissolved oxygen

concentrations as low as < 1 mg O₂/liter. These tolerances to extreme environmental conditions make this species well suited to slow moving reaches of rivers and sloughs.

Spawning begins with increasing water temperatures and day lengths and primarily occurs from early March through May in the upper Delta. In the lower reaches of the Sacramento-San Joaquin estuary, spawning occurs as early as late January to early February through July. Splittail spawn on submerged vegetation in flooded areas, and spawning occurs in the lower reaches of rivers and in dead-end sloughs. Larvae remain in the shallow, weedy areas inshore and close to the spawning sites moving into the deeper offshore habitat as they mature. Splittail populations fluctuate on an annual basis depending on spawning success and strength of the year class. The reproductive period is variable with older fish reproducing first, and followed by younger fish reproducing later in the season.

Within their present range, Splittail have been estimated during most years to be only 35-60 percent as numerous as they were in 1949. CDFG trawl data indicates that a decline in the 1960's to the late 1970's was followed by an expansion in populations through the mid 1980's. This was followed by declines in populations until 1994 after which populations intermittently increased with 1995 and 1998 being years with very large recruitments. The over-all long term decline in Splittail populations can be attributed to reduction in Valley floor habitats, modifications of spawning habitats, changed hydraulics in the estuary (e.g. outflows), climatic variation, introduced species and exploitation.

No focused surveys were conducted for this species within the project footprint. Caltrans reviewed the, URS Fisheries Study Results of Peyton Slough and its associated wetlands, dated December 4, 2009. In this report, surveys were conducted from 1986 to 2009. Biologists found Sacramento splittail within the system during the 1968/1987 and 2009 surveys.

Environmental Consequences

Sacramento splittail have the potential to occur at the project site and may be present during dewatering. Based on the planned avoidance and minimization measures, Caltrans believes that this project will not take Sacramento splittail under the State's definition of take.

Avoidance, Minimization and/or Mitigation Measures

Sacramento splittail may be present within the project area. However, the contractor's NMFS/CDFG fish salvage plan will minimize impacts to all fish should there be the presence of Sacramento splittail in the project site during dewatering. Prior to construction, Caltrans will provide the contractor's dewatering and fish salvage plan to NMFS/CDFG for final approval.

If Sacramento splittail are found within the surveyed area, CDFG will be contacted immediately. Caltrans will work with CDFG on how to proceed with the dewatering and fish salvage at that time.

**CENTRAL VALLEY SPRING-RUN CHINOOK SALMON, WINTER-RUN CHINOOK SALMON AND
CENTRAL VALLEY FALL AND LATE-FALL CHINOOK SALMON (*ONCORHYNCHUS TSHAWYTSCHA*)**

Affected Environment

Central Valley spring-run Chinook salmon were listed as Federal Threatened on September 16, 1999, and State Threatened on February 5, 1999. Critical habitat for spring-run Chinook salmon was designated on February 16, 2000. Critical habitat for federal Central Valley spring-run Chinook salmon Environmentally Significant Unit (ESU) includes all river reaches accessible to listed Chinook salmon in the Sacramento River and its tributaries in California as provided in Federal Register Volume 70, Number 170, Friday, September 2, 2005. Also included are adjacent riparian zones, and river reaches and estuarine areas of the Sacramento-San Joaquin Delta; all waters from Chipps Island westward to Carquinez Bridge including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait; all waters of San Pablo Bay westward of the Carquinez Bridge; and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Excluded are tribal lands and areas above specific dams or above longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years). Major river basins containing spawning and rearing habitat for this ESU comprise approximately 9,329 square miles in California. The following counties lie partially or wholly within these basins (or contain migration habitat for the species): Alameda, Butte, Colusa, Contra Costa, Glenn, Marin, Napa, Nevada, Placer, Sacramento, San Francisco, San Mateo, Shasta, Solano, Sonoma, Sutter, Tehama, Yolo, and Yuba.

Spring run Chinook are large salmonids, reaching 2.5 to 3.3 ft (75-100 cm) standard length (SL) and weighing up to 20 to 22 pounds (9-10 kg) or more (Moyle et al., 1995). Reproductive adults are uniformly olive brown to dark maroon. Reproductive adult males are generally darker than females and have a hooked jaw (kype) and snout and an arched back. Chinook salmon are generally distinguished from other species of salmonids by the body coloration, specifically the spots on the back and tail and the solid black color of the lower gum line. Parr (juveniles) generally have 6-12 oval parr marks, evenly spaced and centered along the lateral line. The fins are clear in color, except for the dorsal, which may be spotted.

Presently, the most consistent self-sustaining wild populations in the Sacramento Valley are in Deer and Mill creeks, Tehama County. Additionally, a few fish are annually seen in Antelope, Battle, Big Chico, and Beegum creeks in some years. Large numbers of spring Chinook are also present in Butte Creek and the Feather River but the Feather River Hatchery may have a large role in the abundance of spring-run Chinook seen annually in the Feather River. Many Feather River spring run may also stray into the Yuba River, where apparently spring chinook have been observed in the cold water below Engelbright Reservoir. There is little reason to regard the Feather River hatchery "spring-run" fish as wild spring Chinook.

Spring Chinook salmon migrate considerable distances up streams to spawn. They enter the rivers from the ocean from March through May. A majority of the adults are three-year old at entrance to freshwater from the ocean. Like all salmon during migration and holding in the river, spring chinooks do not feed, and rely on stored body fat reserves for maintenance and maturation. Spring chinook are immature on their entrance into freshwater and their gonads develop during the summer holding period. In upper Sacramento Valley tributaries, spawning occurs from late August to mid- October. Eggs are laid in reeds and embryos hatch following a 5-6 month incubation period. Sac-fry remain in the gravel for another 2-3 weeks adsorbing a yolk sac. Fry then emerge begin external feeding. In the tributary stream,

juvenile spring-run salmon spend 9-10 months during which they feed on drifting inserts. Juveniles move downstream soon after hatching in March-April or may move downstream the following fall as yearlings. These emigrants may spend additional time in the Sacramento River or Delta before going out to sea. In the ocean, salmon will feed on other fish and grow rapidly. Adult spring chinook migrate up Sacramento Valley tributary creeks from March through June.

Most spring Chinook move out of holding areas into the upper watershed areas when ready to spawn; the rest remain and spawn in the tails of the holding pools. Spring Chinook adults hold in cold deep pools with suitable cover (especially “bubble curtains” created by inflowing water). These holding areas are generally in proximity to patches of gravel suitable for spawning. Prolonged water temperatures above 80° F (27° C) are lethal to adults. Holding pools are generally greater than 3 to 6 ft (1-3 m) deep, with bedrock bottoms and moderate velocities. Fish will spawn in gravel beds where the size of the gravel can be excavated.

Twenty “historically large populations” of spring run Chinook have been extirpated or reduced since 1940. Four additional runs (Butte, Big Chico, Deer, and Mill creeks) have exhibited significant declines during the same period. The only substantial, essentially wild populations of spring-run Chinook remaining in California are in Deer, Mill, and other smaller tributary creeks in the Sacramento River watershed. The Feather River and other populations may to be supported by hatchery stocks or co-mingled with fall run stocks. Spring-run Chinook salmon populations reached quite low abundance levels during the late 1980s (5-year mean population sizes of 67–243 spawners), compared to a historical peak abundance of nearly 700,000 spawners for the ESU.

Sacramento River winter-run Chinook salmon were listed Federal Endangered on January 4, 1994, and California Endangered on September 22, 1989. Critical habitat for winter-run Chinook salmon was designated on March 22, 1999. Critical habitat is designated to include the following: Sacramento River from Keswick Dam in Shasta County (River Mile [RM] 302) to Chipps Island (RM 0) at the westward margin of the Sacramento-San Joaquin Delta; all waters from Chipps Island westward to Carquinez Bridge including Honker Bay, Suisun Bay, and Carquinez Strait; all waters of San Pablo Bay westward of the Carquinez Bridge; and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Major river basins containing spawning and rearing habitat for this ESU comprise approximately 9,329 square miles in California. The following counties lie partially or wholly within these basins: Butte, Colusa, Contra Costa, Glenn, Napa, Nevada, Placer, Plumas, Sacramento, Shasta, Solano, Sutter, Tehama, Trinity, Yolo, and Yuba.

Winter-run Chinook salmon tend to be smaller than other Chinook species but still may weigh up to 20 or pounds (9 kg) or more. Similar to other Chinook salmon, reproductive winter-run adults are uniformly olive brown to dark maroon. Reproducing adult males are generally darker than females and have a hooked jaw (kype) and snout and an arched back. Chinook salmon are generally distinguished from other species of salmonids by the body coloration, specifically the spots on the back and tail and the solid black color of the lower gum line. Parr (juveniles) generally have 6-12 oval parr marks, evenly spaced and centered along the lateral line. The fins are clear in color, except for the dorsal, which may be spotted.

Presently Winter-run Chinook salmon are restricted to the Upper most portions of the Sacramento River and Battle Creek in Shasta County. Dams on the Sacramento River and Battle Creek have restricted this species to their historic range which was the McCloud River in Siskiyou County and Battle Creek in Shasta county.

Generally, winter-run adults migrate from December through July with a peak occurring in March in most years. Most returning adults are 3-years old on return from the ocean. Spawning occurs in mid to late April and continues through early August in most years with a peak in may and June. Fry emerge from the gravel in July through October and juveniles remain in the Sacramento River from 5 to 10 months. Juveniles may spend an indeterminate length of time in the Bay Delta estuary. Except for over-summering holding pools, habitat requirements for winter-run Chinook salmon are similar as described for spring-run Chinook salmon above.

Winter-run Chinook salmon numbers have increased overall since the early 1990s when spawning escapements were estimated to be in the hundreds. These small population sizes, escapement fell below 200 fish in the 1990s. Population size declined from highs of near 100,000 fish in the late 1960s, indicating a sustained period of poor survival. However, more recently, except for 2007 when the estimated spawning escapement was approximately 2,500 adults, since 2001 winter-run Chinook salmon spawning escapement estimates have exceeded 7,000 adults annually.

The National Marine Fisheries Service (NMFS) recognizes the Central Valley fall and late-fall Chinook salmon as one Environmentally Significant Unit (ESU) (Moyle, 2002). It was determined that listing for this ESU was not warranted on September 16, 1999 (64 Fed. Reg. 50394). However, due to risk factors Central Valley fall and late fall-run Chinook salmon (CVFRCS) ESU (*Oncorhynchus tshawytscha*) underwent a status review after NMFS received petitions to list them. From this review, NMFS found that this species did not warrant listing as threatened or endangered under the ESA. However, sufficient concerns remained to justify adding them to the candidate species list on April 15, 2004 (69 Fed. Reg. 19975). As of this date, NMFS categorizes the CVFRCS ESU as a federal species of concern.

Fall and late-fall run Chinook salmon are physically similar to spring-run and winter-run Chinook salmon. They are large salmon, frequently reaching 75-100 cm (30 to 40 in) SL and weighing up to 9-10 kg (20-22 lb) or larger (Moyle, 2002). Spawning adults are olive-brown to dark red and males are generally darker than females with a hooked jaw and snout (kype) and an arched back. Chinook salmon can be distinguished from other salmon by the body coloration and the spots on the back and tail. Chinook salmon also have a solid black color on the lower gum area of the mouth. Juveniles (parr) usually have 6-12 broad dark bars (parr marks) evenly spaced and centered along the lateral line. The adipose fin of parr is pigmented along the upper edge but clear at the base of the fin. The remaining fins are unspotted and clear, with the exception of the dorsal fin, which can be spotted (Moyle, et al, 1995).

The Central Valley fall, late-fall Chinook salmon ESU includes all naturally spawned populations of fall-run Chinook salmon in the Sacramento and San Joaquin River Basins and their tributaries, east of Carquinez Strait, California. Sacramento late-fall run Chinook are found mainly in the Sacramento River, and most spawning and rearing of juveniles takes place in the reach of the Sacramento River between Red Bluff and Redding. In the Sacramento Valley late-fall run Chinook have also been observed spawning in Battle, Cottonwood, Clear, and Mill creeks, and the Yuba and Feather rivers. However, those spawning in the tributaries and the Yuba and Feather rivers are only a small fraction of the total population. The historic distribution of the late-fall run is not known, but it probably spawned in the upper Sacramento River and major tributaries in reaches now blocked by Shasta and Keswick dams.

Fall Chinook salmon are found throughout the mainstem Sacramento, Feather, Yuba, and American rivers and other tributaries within the Sacramento Valley and the San Joaquin, Consumnes, Calaveras, Mokelumne, Stanislaus, and Merced rivers and their tributaries in the San Joaquin Valley. Many of the fall Chinook salmon runs in both the Sacramento and San Joaquin Valleys are high supported by hatchery production by both federal and State of California operated hatcheries.

A majority of the adult fall Chinook salmon are usually three-year olds at their entrance to freshwater from the ocean. Like all salmon, during migration and holding in the river, Chinook salmon do not feed. They rely on stored body fat reserves for maintenance and maturation. Fall-run Chinook salmon migrate as adults into the Central Valley from June through December with their peak migration being September through October. Fall run spawning occurs from late September through December with its peak in October through November. The timing for adult migrating late-fall Chinook into the Central is slightly later with migration occurring from October through April with a peak in December. Late-fall Chinook spawn from early January through April with the peak occurring in February through March.

Eggs are laid in redds and embryos hatch following an approximate two month incubation period. Sac-fry remain in the gravel for another 2-3 weeks adsorbing the yolk sac. Juvenile fall-run Chinook emerge and rear in-river in the Central Valley from 1 to 7 months beginning in December through March; juvenile late-fall Chinook emerge and rear in-river from 7 to 13 months beginning in April through June. Following fry emergence, they begin external feeding. While rearing, juveniles feed on drifting inserts. Juveniles begin to move downstream after hatching and enter the estuary as smolts, physiologically adapted for life in saltwater.

Late-fall run Chinook have historically had the least numerous run in the Sacramento River and, like winter-run and spring-run, their numbers began declining in the late 1960s. From 1967 through 1976, the late-fall run averaged about 22,000 fish. In the 10 years from 1982 through 1991, the run averaged about 10,000 adults. From 1992 to the present, approximately 15,000 late-fall Chinook have escaped annually to the Sacramento Valley. In 2007, while a total of approximately 22,000 late-fall Chinook adults returned to the Sacramento Valley. The principle run of Chinook salmon in the Central Valley, fall-run Chinook salmon, historically had very large spawning escapements, and recently as many as 880,000 adult salmon returned to spawn in 2002. Annually, on average since 1992, approximately 380,000 Chinook salmon have returned to the Sacramento Valley. However, in 2007 only approximately 95,000 fall Chinook salmon, including hatchery adults, returned to the Central Valley. This extremely low spawning escapement resulted in the closure of both the commercial ocean harvest as well as the in-river recreational fishery in the Central Valley in 2008.

No focused surveys were conducted for this species within the project footprint. Suitable spawning and rearing habitat is present nearby within Carquinez Strait. Caltrans reviewed the, URS Fisheries Study Results of Peyton Slough and its associated wetlands, dated December 4, 2009. In this report, surveys were conducted from 1986 to 2009. Biologists found two Chinook smolts upstream of the tide gates located closest to Carquinez Strait, in 2001. Sampling continued until 2009, and no other Chinook were reported.

Environmental Consequences

Presence of Chinook salmon at the project location is not anticipated. Caltrans believes Chinook salmon will not be present during dewatering due to the project site containing poor levels of dissolved oxygen and not retaining optimum temperature levels. It has been identified that there is no spawning habitat for Chinook salmon within the project site. According to the Fisheries Study Results, presence of several predators have been found within the system, including striped bass and other centrarchids.

Based on the provided project description, planned avoidance and minimization measures, and background research, Caltrans believes that Chinook salmon will not be present at the project location during the initial dewatering and throughout construction. Caltrans believes that this project is not likely to adversely affect Chinook salmon within the project action area.

Avoidance, Minimization and/or Mitigation Measures

Presence of Chinook salmon at the project location is not anticipated. However, the contractor's NMFS/CDFG fish salvage plan will minimize impacts to all fish should there be Chinook salmon in the project site during dewatering. Prior to construction, Caltrans will provide the contractor's dewatering and fish salvage plan to NMFS/CDFG for final approval.

If Chinook salmon are found within the surveyed area, no work will occur and NMFS/CDFG will be contacted.

CENTRAL VALLEY STEELHEAD AND CENTRAL CALIFORNIA COASTAL STEELHEAD (ONCORHYNCHUS MYKISS)

Affected Environment

Central Valley distinct population segments (DPS) steelhead were listed as Federal Threatened on March 19, 1998. Following status review, a final listing determination was made on January 5, 2006 (Fed. Reg.: 71, No. 3). Critical habitat was originally designated on February 16, 2000. In late 2000, a lawsuit was filed challenging the 2000 final designation of critical habitat for several West Coast anadromous salmonid populations including Central Valley steelhead. The federal courts ruled that the agency did not adequately consider the economic impacts of the critical habitat designations.

In April 2002, NMFS withdrew its 2000 critical habitat designations. Another lawsuit was filed, alleging that the agency failed to designate critical habitat in a timely manner for the 19 ESUs for which critical habitat had been vacated (and for a recently listed species, Northern California steelhead). NMFS entered into a settlement under which the agency agreed to file final critical habitat designations by August 15, 2005, for those of the 20 ESUs listed as of that date.

NMFS announced its final critical habitat designations for 19 ESUs on August 12, 2005. Federal Register notices on these designations were published September 2, 2005, and they became effective on January 2, 2006. Final designation of Critical Habitat for Central Valley DPS steelhead was included in that notice.

Steelhead are sea-run rainbow trout that have large mouths with well-developed teeth on both upper and lower jaws. The caudal fin is forked and their scales are small. Steelhead have been reported to attain a large size, up to 20 pounds (9 kg) or more.

The Central Valley (CV) steelhead DPS is thought to have occurred historically from the McCloud River and other northern tributaries to Tulare Lake and the Kings River in the southern San Joaquin Valley. The NMFS Biological Review Team (BRT) reported that recent spawners surveys of small Sacramento River tributaries (Mill, Deer, Antelope, Clear, and Beegum Creeks) and incidental captures of juvenile steelhead via monitoring on the Calaveras, Cosumnes, Stanislaus, Tuolumne, and Merced Rivers confirmed that steelhead are distributed throughout accessible streams and rivers.

Central Valley steelhead enter freshwater as adults in August with a peak in late September through October. They typically spawn in tributaries to the Sacramento and San Joaquin rivers, often ascending long distances. Spawning generally occurs from December through April depending on the local population. Steelhead have the ability to return to spawn more than once unlike other Pacific salmon. Adults females dig redds in coarse gravel in tail-outs of pools or in riffles. Eggs incubate and hatch in 3-4 week into sac-fry depending on water temperature and emerge from the gravel after an additional 2-3 weeks. Fry initially live in quiet edge waters of streams close to shore and are passive feeders for several weeks. Under good food conditions, juveniles can reach 10-12 cm FL in the first year and 16-17 cm FL by the end of the second year. Juveniles remain in freshwater for 1 to 2 years and emigrate as smolts (physiologically adapted to saltwater conditions) as they near the ocean. Most reside in the ocean for 1-3 years before returning to their natal streams to spawn. Habitat requirements are similar to that for Chinook salmon in that they require cool, clean flowing water with sufficient dissolved oxygen and minimal turbidity for successful spawning.

Steelhead spawning above Red Bluff Diversion Dam (RBDD) have a small population size and exhibit negative trends in abundance. No escapement estimates have been made for the area above RBDD since the mid-1990s. A crude extrapolation from juvenile data in 1998-2008 estimated that there were 3,600 spawning female steelhead in the Central Valley (NMFS, 2008). Prior to 1850, there was 1 to 2 million spawners, and in the 1960s about 40,000 spawners.

No focused surveys were conducted for this species within the project footprint. Suitable spawning and rearing habitat is present nearby within Carquinez Strait. Caltrans reviewed the, URS Fisheries Study Results of Peyton Slough and its associated wetlands, dated December 4, 2009. In this report, surveys were conducted from 1986 to 2009. No steelhead were reported.

Environmental Consequences

Presence of Steelhead at the project location is not anticipated. Caltrans believes Steelhead will not be present during dewatering due to the project site containing poor levels of dissolved oxygen and not retaining optimum temperature levels. It has been identified that there is no spawning habitat for Steelhead within the project site. According to the Fisheries Study Results, several predators have been found within the system, including striped bass and other centrarchids.

Based on the provided project description, planned avoidance and minimization measures, and background research, Caltrans believes that Steelhead will not be present at the project

location during the initial dewatering and throughout construction. Caltrans believes that this project is not likely to adversely affect Steelhead within the project action area.

Avoidance, Minimization and/or Mitigation Measures

Presence of Steelhead at the project location is not anticipated. However, the contractor's NMFS/CDFG fish salvage plan will minimize impacts to all fish should there be any Steelhead in the project site during dewatering. Prior to construction, Caltrans will provide the contractor's dewatering and fish salvage plan to NMFS/CDFG for final approval.

If Steelhead is found within the surveyed area, no work will occur and NMFS/CDFG will be contacted.

2.3 Construction Impacts

This section summarizes the construction impacts for the proposed project. Construction activities such as phased clearing, grubbing, access and staging and pile driving will be elements that require consideration due to impacts from noise, dust and vegetation removal. The impacts from the construction activities will be temporary and can be reasonably reduced by implementing avoidance, minimization and/or mitigation measures.

Access Roads

Caltrans identified access roads within the Caltrans' right-of-way. Access roads will be used for driving equipment to the project area. Caltrans will completely avoid the existing channel. Three areas will have temporary access roads.

The first area is an existing dirt roadway directly northwest of the existing structure. The second area is south-southeast of the proposed structure, which continues under the overhead structure to the east of the structure. At this location, there is no access road at this time. A 30-foot temporary road measured from both sides of the new and existing superstructures would be required to complete the construction operations for removal and construction of the new off-ramp structure. The third area will include a temporary access road abutting the existing on-ramp. This access road will be required in order to reach the outer side of the loop ramp.

Staging Locations

Caltrans identified staging locations within the Caltrans right-of-way. Staging locations will be used for temporary storage of heavy construction equipment, various construction materials, stockpile areas, equipment maintenance shops, and field offices. Staging shall occur on the shoulder of Marina Vista Avenue, directly underneath the mainline north-northeast of the project location, as well as to the east of the off-ramp. No vegetation is present at the shoulder location and under the mainline site.

Pile Driving

Installation of the 6, 78" piles and the 35, 16" piles with an impact driver could produce peak in-air noise levels of 106 Lmax dB at a distance of 98 feet. Much of the noise energy produced would be below this maximum. At greater distances, the noise levels would diminish rapidly out to ambient levels at 200'. This increasing distance would gradually lower

impacts from the masking effects of Zone 3 and into the lower end of Zone 4's potential behavioral or physiological impacts. Individuals beyond that distance would be unlikely to experience any noise-related impacts from pile driving. Impact hammers tend to produce noise in the 0.025 to 4.5 kilohertz range. This overlaps with the bird vocalization frequencies of 2 to 8 kilohertz and could cause masking if birds are present near the source. In addition, local conditions such as wind, rain, temperature, and other environmental factors will vary widely and over short time intervals. Thus, it is difficult to be more specific with regard to specific impacts on birds.

Environmental Consequences

Anticipated permanent and temporary impacts from new piles, access roads and staging areas, to vegetated areas are approximately 160,598 square feet (3.69 acres). Approximately 4,748 square feet (0.109 acre) will be permanently impacted from the newly installed CISS piles and fill from replacement of existing abutment. This leaves approximately 155,850 square feet (3.58 acres) of temporary impacts to vegetation from all other construction activities. All of the permanent impacts to vegetation would be to wetlands.

Temporary impacts fall into two categories: (1) physical habitat disturbance; and (2) noise-related harm or disturbance to special-status species. The area of temporarily impacted vegetation is approximately 3.58 acres surrounding the locations of the 6, 78" CISS piles, 35, 16" CISS piles, as well as access roads and staging areas. Of this temporary disturbance, all impacts would be to wetlands. Permanent impacts to wetlands would total approximately 0.109 acres. These areas would be subjected to ground disturbance by vehicles and equipment during the placement of the permanent CISS piles and the new abutment.

Avoidance, Minimization and/or Mitigation Measures

Access Roads

Contractors will use construction fabric and a layer of gravel for access roads and staging areas to protect the original contour of all wetland pools that cannot be avoided within identified affected areas adjacent to or within the right-of-way. Material used for installation of the temporary access roads will be geo-fabric and aggregate rock. After construction of the project, the affected areas will be restored to preconstruction conditions or better and are considered temporary disturbances.

Staging Locations

All fueling and maintenance of vehicles and other equipment will take place at least 65 feet from any riparian or aquatic habitat. Staging areas within the vegetated area of the project footprint will have geo-fabric and aggregate rock installed prior to use. These areas will be restored post construction and are considered temporary disturbances.

Pile Driving

The project has been modified to significantly reduce the footprint of the affected area. These modifications may reduce the indirect, noise-related impacts. The use of an impact

hammer was suggested and will be implemented in order to reduce noise related impacts. Contractors will limit pile driving to 10-days to reduce impacts to sensitive species.

2.4 Cumulative Impacts

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption to migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

Cumulative Impacts Evaluation

The cumulative impacts associated with the Mococo Overhead Seismic Restoration Project have been evaluated with other nearby, past, present and proposed transportation and non-transportation projects in Contra Costa County. Projects and actions in the vicinity of the project may collectively produce major consequences that require consideration as a whole.

In order to conduct a cumulative impacts analysis, a variety of sources were consulted so that the analysis could be thorough. Some projects in the vicinity may have been overlooked because they may have been completed, new, too small or only concepts. The sources consulted include:

- Governor's Office of Planning and Research Office database of environmental documents (database can be viewed on the world wide web at www.ceqanet.ca.gov);
- The Department's District 04 Intergovernmental Review/CEQA unit;
- The Metropolitan Transportation Commission's Transportation 2030 Plan, February 2005 (http://www.mtc.ca.gov/planning/2030_plan/index.htm);
- Contra Costa County Transportation Authority website (<http://www.ccta.net/index.html>).

Related Projects

The Mococo Overhead Seismic Restoration project is located in Contra Costa County. There are projects, past, present and planned for the future that have environmental impacts that deserve consideration for the cumulative impact analysis. Biological resources are primarily the focus of this analysis in regards to looking at these other projects in the vicinity.

- Benicia Martinez Bridge

The project involved the construction of the Benicia Martinez Bridge over the Carquinez Strait. This project was completed in 2007. Construction included a new five-lane bridge (four mixed-flow lanes one slow-vehicle lane), east of the existing bridge and rail span with provisions to accommodate future light rail Construction of a new 9-booth toll plaza. Other items included one carpool bypass lane, two open road tolling lanes and accommodation for electronic toll collection and an administration building at the southern approach to the new bridge in Contra Costa County. Reconstruction of the I-680 interchanges at I-780 in Benicia and Marina Vista/Waterfront Road in Martinez were implemented to accommodate the new bridge and toll plaza. Modifications to the existing overhead in order to accommodate four mixed-flow lanes of southbound traffic and a two-way bicycle/pedestrian lane.

- Shell Oil Productions US – Shell Martinez Refinery

The project is to approve a Hazardous Waste Facility Permit Renewal Application (the "Renewal Application") for the hazardous waste storage and treatment facility at the Shell Martinez Refinery, which is owned by Equilon Enterprises LLC and operated by Shell Oil Products US (the 'Refinery'). The Refinery, including the hazardous waste storage and treatment facility, is located at 3485 Pacheco Boulevard in Martinez, California. If approved, the Project will permit: three existing Carbon monoxide (CO) boilers referred to as CO Boiler #1, #2, and #3; an aboveground 47,750 gallon storage tank referred to as Tank 12038; burning of three waste streams (Dissolved Nitrogen Flotation [DNF], Waste Biosludge and Waste Biosolids and storage of these waste streams in Tank 12038.

- Buchanan Field Airport Master Plan Update and General Plan Amendment

The proposed project involves an update of the existing 1990 Master Plan for the Buchanan Field Airport, consistent with Federal Aviation Administration (FAA) requirements, and a related amendment to the Land Use and Transportation/Circulation Elements of the Contra Costa County General Plan (2005-2020) in support of the Airport Master Plan update (collectively referred to as the "proposed project").

- Contra Costa County Airport Land Use Compatibility Plan

The plan provides a set of policies for use by the Contra Costa County Airport Land Use Commission in evaluating the compatibility between future proposals for land use development in the vicinity of the two public-use airports and the aircraft activity at these airports. The local agencies having jurisdiction over land uses within the areas covered by this plan include: Contra Costa County and the cities of Concord, Martinez and Pleasant hill. The plan also establishes policies

by which the Commission will review master plans for the two exiting airports and development plans for any proposed new airport or heliport. The plan is prepared in accordance with requirements of the California State Aeronautics Act.

- Hanson Sand Mining

Hanson Marine Operations and Suisun Associates have applied for renewed leases and related permits that would allow them to continue mining sand for 10 years following the end of the regular 10-year term that ends in June 2008. Mining occurs in Central San Francisco Bay, Middle Ground Shoal and within the navigation channels of Suisun Bay. The purpose of this sand mining is to obtain marine aggregate, which is primarily used for construction purposes within the greater San Francisco Bay Area.

- Praxair 21.5 Mile Hydrogen Pipeline and 2.1 Mile Natural Gas Line

This project is a request to construct a 21.5 miles of hydrogen pipeline from the Chevron refinery in Richmond to the Shell refinery in Martinez with a lateral line connecting to the Conoco Phillips refinery in Rodeo and construction of a 2.1 mile natural gas line to the Chevron refinery.

- The Lower Walnut Creek Interim Protection Project; Project No. 7520-6B8345 / CP#07-39

This project will remove excess sediment and vegetation, create surface elevation, restore wetland habitat, and levee restoration for the lower portion of Walnut Creek.

Potential Cumulative Impacts

Natural Environment

The project area contains approximately 1.5 acres of marsh wetland. Permanent fill of the wetland from the Cast-In Steel Shell (CISS) piles is estimated at 0.00675 acres. All other impacts to wetlands from construction will be temporary and are estimated at 0.10 acres. Temporary impacts fall into two categories: (1) physical habitat disturbance; and (2) noise-related harm or disturbance to special-status species. The area of temporarily impacted vegetation is approximately 3.58 acres surrounding the locations of the 6, 78" CISS piles, 35, 16" CISS piles, as well as access roads and staging areas. Of this temporary disturbance, all impacts would be to wetlands. Permanent impacts to wetlands would total approximately 0.109 acres.

While some of the related projects may impact wetlands within the area, there is mitigation provided for these potential impacts. Thus, it is reasoned that this project will not contribute to any cumulative impacts as these projects do not have significant impacts individually or cumulatively.

Post-construction, Caltrans proposes to allow the project area to be influenced by the tide. In addition, Caltrans is planning to implement a restoration plan at the project location. This restoration plan will include restoring the site to pre-construction conditions or better and three year monitoring plan for success.

2.5 Climate Change

2.5.1 Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas¹ (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

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% below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. However, California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate GHGs as a pollutant under the Clean Air Act (Massachusetts vs. Environmental Protection Agency et al., U.S. Supreme Court No. 05-1120. 549 U.S. -- Argued November 29, 2006—Decided April 2, 2007). The court ruled that GHGs do fit within the Clean Air Act's definition of a pollutant, and that EPA does have the authority to regulate GHGs. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

"According to a recent white paper by the Association of Environmental Professionals², "an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project

¹ Greenhouse gases related to human activity, as identified in AB 32, include: Carbon dioxide, Methane, Nitrous oxide, Tetrafluoromethane, Hexafluoroethane, Sulfur hexafluoride, HFC-23, HFC-134a*, and HFC-152a*.

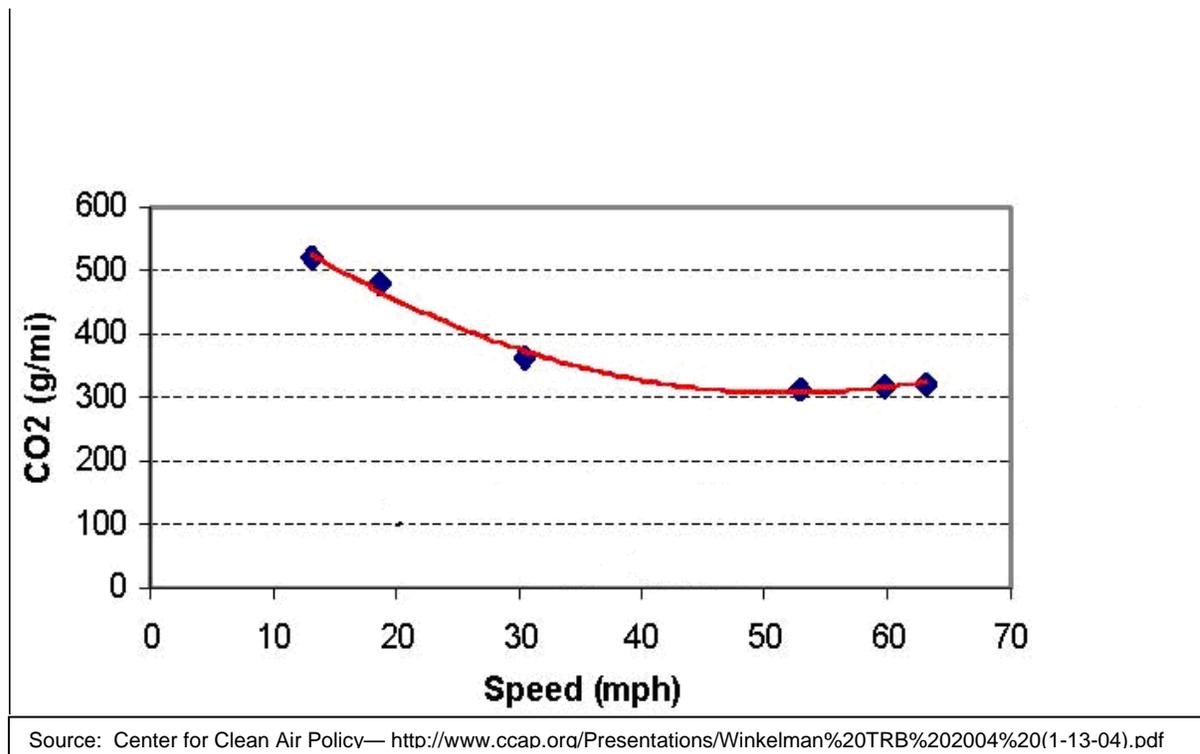
² Hendrix, Micheal and Wilson, Cori. *Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), p. 2.

participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases.

The Department and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the *Climate Action Program at Caltrans* (December 2006). Transportation's contribution to GHG emissions is dependent on 3 factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel.

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure below). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in GHG emissions.

Figure 4: Fleet CO2 Emissions vs. Speed (Highway)



The Department recognizes the concern that carbon dioxide emissions raise for climate change. However, accurate modeling of GHG emissions levels, including carbon dioxide at the project level, at the project level is not currently possible. No federal, state or regional regulatory agency has provided methodology or criteria for GHG emission and climate change impact analysis. Therefore, the Department is unable to provide a scientific or regulatory based conclusion regarding whether the project’s contribution to climate change is cumulatively considerable.”

The Department continues to be actively involved on the Governor’s Climate Action Team as ARB works to implement AB 1493 and AB 32. As part of the *Climate Action Program at Caltrans* (December 2006), the Department is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. The Department is working closely with local jurisdictions on planning activities; however, the Department does not have local land use planning authority. The Department is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks. However it is important to note that the control of the fuel economy standards is held by the United States Environmental Protection Agency and ARB. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the University of California Davis.”

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Chapter 3 – 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. Due to the level of potential impacts of the proposed project, formal scoping meetings were determined to not be necessary. Project development team meetings did occur to discuss the proposed project within the various units in the Department. This chapter summarizes the results of the Department's efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

The process of determining the scope and focus of the project is known as "scoping". The scoping process allows agencies and other interested parties to provide input on the proposed alternatives, topics being evaluated and potential impacts and mitigation measures being considered. Scoping is the earliest opportunity to participate in the California Environmental Quality Act (CEQA) review of the proposed project. The process seeks public input to identify project issues, facilitate an efficient environmental documentation process, defines issues and alternatives to be examined in the environmental document and ensures that relevant issues are addressed. It is the beginning of the environmental process, not the selection of a preferred alternative.

Scoping

The project scope was determined with a Project Scope Summary Report (PSSR) dated September 17, 2007. A formal scoping meeting was not conducted for this project.

Project Development Team (PDT)

The Project Development Team is comprised of the Project Manager and representatives from the various functional units that are involved in the project development process. This includes but is not limited to representatives from the project design group, environmental, traffic, construction, surveys, right-of-way, FHWA and representatives from various government agencies.

The PDT advises and assists the Project Manager in directing the course of studies, makes recommendations to the Project Manager and district management and works to carry out the project work plan. Members of the PDT participate in major meetings, public hearings and community involvement. The PDT is responsible for conducting studies and accumulating data throughout the project development and then implementing this data and information into Plans, Specifications and Estimates (PS&E) phase.

Biological Consultation

February 18, 2009: Field meeting with Jerry Roe, U.S. Fish and Wildlife Service (USFWS), and Caltrans Biologists Rachel Cotroneo, Robert Blizard, Frances Malamud-Roam, and Brian Brandert to discuss potential effects to SMHM, California clapper rail and California black rail.

February 26, 2009: Spoke with Melissa Escaron, California Department of Fish and Game (CDFG), regarding the fully protected SMHM, California clapper rail and California black rail.

March 9, 2009: Phone conversation with Jerry Roe, USFWS, regarding reinitiating consultation and amendment of the Benicia-Martinez Bridge Biological Opinion.

March 19, 2009: Field meeting with Christopher States, Caltrans Senior Environmental Planner, and Hal Durio, U.S. Army Corps of Engineers (USACE), to evaluate USACE jurisdiction and conduct a rare plant survey.

March 25, 2009: Phone conversation with Jerry Roe, USFWS, regarding effect determinations.

April 24, 2009: Field meeting with Jerry Roe, USFWS, Melissa Escaron, CDFG, Chris States, Caltrans Senior Environmental Planner, Robert Blizard, Caltrans Associate Biologist, Rachel Cotroneo, Caltrans Biologist, and Ralph Dodge, Caltrans liaison for Shell Marsh, discussing 1602 Streambed Alteration Agreement, working with Shell Refinery regarding their storm water discharge, proper materials for access roads and staging areas, and determinations for species.

June 19, 2009: Phone conversation with Jerry Roe, USFWS, regarding Caltrans' plan to keep area isolated from the tide.

June 29, 2009: Phone conversation with Melissa Escaron, CDFG, regarding Caltrans' plan to keep area isolated from tide.

August 4, 2009: Amy Sparks, Caltrans Senior Biologist BCDC division, spoke with Bob Batha, of San Francisco Bay Conservation and Development Division (BCDC) regarding BCDC jurisdiction of the project area.

September 23, 2009: Phone conversation with Jerry Roe, USFWS, regarding ramifications of the new scope and schedule of the project.

October 7, 2009: Phone conversation with Melissa Escaron, CDFG, regarding the ramifications of the new scope and schedule of the project, as well as the possibility of Delta Smelt being present at the project location.

October 7, 2009: Phone conversation with Jerry Roe regarding the possibility of Delta Smelt being present at the project location.

November 4, 2009: Meeting with Jerry Roe, USFWS, and Melissa Escaron, CDFG, regarding the ramifications of the new scope and schedule changes to the project. Also, discussed possibility of Delta Smelt and Longfin Smelt at the project location.

February 17, 2010: Phone conversation with Dan Logan, NMFS, regarding whether or not consultation was necessary. He explained that this was a policy level decision and that we would need to talk with Gary Stern, NMFS Supervisor, regarding these decisions.

February 26, 2010: Letter to National Marine Fisheries Service requesting concurrence for not likely to adversely affect the Central Valley fall/late fall-run Chinook salmon, Central Valley spring-run Chinook salmon, winter-run Chinook salmon, Central Valley steelhead and Central California Coastal steelhead.

March 4, 2010: Phone conversation with Jerry Roe regarding noise impacts from vibratory hammers vs. impact hammers. We concluded that using the impact hammers for up to 10

Days would be the best approach for the project.

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Chapter 4 – List of Preparers

Caltrans

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Office of Hydraulics

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Office of Natural Sciences

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Office of Program/Project Management

Hamid Fathollahi

Office of Right of Way

AJ Burgess
Melanie Hunt
Leo Munneke

Office Structural Design

Qi Zhou

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Chapter 5 – Distribution List

Elected Federal Officials

Members of the U.S. Senate:

The Honorable Barbara Boxer
United States Senator
1700 Montgomery Street, Suite 240
San Francisco CA 94111

Members of the U.S. Senate:

The Honorable Dianne Feinstein
United States Senator
One Post Street, Suite 2450
San Francisco, CA 94104

Members of the House:

The Honorable Nancy Pelosi
United States Representative
90 7th Street, Suite 2-800, San Francisco,
California 94103

The Honorable John Garamendi
United States Representative
420 W. Third Street
Antioch CA 94509

Elected State Officials

Members of the State Senate:

The Honorable Mark DeSaulnier
Member of the Senate
7th District
1350 Treat Blvd, Suite 240
Walnut Creek, CA 94597

Members of the State Assembly:

The Honorable Nancy Skinner
Member of the Assembly
14th District
1515 Clay Street, Suite 2201
Oakland, CA 94612

The Honorable Tom Torlakson
Member of the Assembly
815 Estudillo Street
Martinez, CA 94553

Elected Local Officials

Supervisor Gayle B. Uilkema
Board of Supervisors
Contra Costa County, District 2
651 Pine St., Rm 108A
County Administration Building
Martinez CA 94553-1229

Supervisor Susan Bonilla
Board of Supervisors
Contra Costa County District 4
2151 Salvio Street, Suite R
Concord, CA 94520

Rob Schroeder, Mayor
City of Martinez
525 Henrietta Street
Martinez, CA 94553

Karen Mitchoff, Mayor
100 Gregory Lane
Pleasant Hill, CA 94523

Guy S. Bjerke, Mayor
1950 Parkside Drive, MS/01
Concord, CA 94519

Federal Agencies

Environmental Protection Agency, Region IX
Federal Activities Office, Mail Code 2252-A
75 Hawthorne Street
San Francisco, CA 94105-3901

Federal Transit Administration, Region IX
201 Mission Street, Suite 2210
San Francisco, CA 94105

Natural Resources Conservation Service
5552 Clayton Road
Concord CA 94521

U.S. Fish and Wildlife Service
Sacramento Field Office
2800 Cottage Way, Room W-2605
Sacramento CA 95825

Federal Emergency Management Agency
Regional Director
Region IX, Bldg. 105
Presidio, CA 94129

U.S. Army Corps of Engineers,
San Francisco District
Attention: CESPAN-CO-R
333 Market Street, 8th floor
San Francisco, CA 94105-2197

U. S. Department of Energy
Director, Office of
Environmental Compliance
1000 Independence Ave., SW, Rm. 4G-
064
Washington, DC 20585

U.S. Geological Survey
345 Middlefield Road
Menlo Park, CA 94025

State Agencies

California Highway Patrol
5001 Blum Street
Martinez 94553-4395

California Public Utilities Commission
Executive Director
505 Van Ness Avenue
San Francisco CA 94102

California Transportation Commission
1120 N Street, Room 2221 (MS-52)
Sacramento, CA 95814

Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland CA 94612

San Francisco Bay Conservation and
Development Commission
Will Travis, Executive Director
50 California Street, #2600
San Francisco CA 94111-4728

State Clearinghouse, Executive Officer
Office of Planning and Research

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California Air Resources Board
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Sacramento CA 95812

California Department of Conservation
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801 K Street MS 24-01
Sacramento, CA 95814

California Department of Fish & Game
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1416 Ninth Street, 12th Floor
Sacramento CA 95814

California Energy Commission
Executive Director, Environmental Office
1516 Ninth Street, MS 39
Sacramento CA 95814

California Natural Resources Agency
Secretary Lester Snow
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Department of Water Resources
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Sacramento, CA 94236

State Water Resources Control Board
Executive Director
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Sacramento, CA 95812-0100

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Janet McBride, Director of Planning
101 Eighth St.
Oakland CA 94607

Bay Area Air Quality Management District
Executive Director
939 Ellis Street
San Francisco CA 94109

Contra Costa County
Stephen L.Weir, County Clerk-Recorder
524 Main Street
Martinez CA 94553

Paul Maxwell, Interim Executive Director
Contra Costa Transportation Authority
3478 Buskirk Avenue, Suite 100
Pleasant Hill, CA 94523-7311

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APPENDICES

Appendix A CEQA Checklist

Supporting documentation of all CEQA checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or compensation measures under the appropriate topic headings in Chapter 2.

Environmental Significance Checklist

04-CC-680	24.26/24.4	3A8700
Dist.-Co.-Rte.	P.M/P.M.	E.A.

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<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"/>
	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

V. CULTURAL RESOURCES: Would the project:

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

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: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VII. GREENHOUSE GAS EMISSIONS: Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
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"/>
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"/>
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. 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"/>
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"/>

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

XII. NOISE: Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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"/>
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"/>
) 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"/>

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
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"/>

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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<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 which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<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"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES 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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 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?	<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"/>

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

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY (916) 653-4086



*Flex your power!
Be energy efficient!*

August 25, 2009

TITLE VI POLICY STATEMENT

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


RANDELL H. IWASAKI
Director

"Caltrans improves mobility across California"

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Appendix C Minimization and/or Mitigation Summary

SUMMARY OF REQUIRED PERMITS AND ENVIRONMENTAL COMMITMENT -PS&E PHASE

TO: Hamid Fathollahi
 ATTN.: Manuel Canilao Jr.
 DESIGN OFFICE

PROJECT MANAGER:
 PROJECT ENGINEER:

Date:	5/1/2010
CO. RTE. PM.:	CCC-680-24.2/24.4
EA	3A8700

Below is a summary of the required permits, and environmental commitments that must be incorporated into the PS&E, for this project. Please contact Sheryl M. Garcia @ (510) 286-5611 for further information.

	Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken	Date
PERMITS AND AGREEMENTS	CDFG 1601/03 Streambed Alteration Agreement					
	BCDC: Bay Fill Permit					
	BCDC: Pub. Access Review					
	Coastal Dev. Permit: County					
	Coastal Dev. Permit: State					
	State Lands Lease Agreement					
	RWQCB: NPDES	402		Office of Water Quality	PS&E	
	RWQCB: Water Qual. Cert.	401		Office of Water Quality	PS&E	
	Endangered Species Act ¹					
	USACOE 404: Nationwide	404		Office of Natural Sciences/Permits, Biology	PS&E	Measures to avoid and minimize damage include limiting the construction window to one season and clearly defining project boundaries during construction. Project boundaries will be defined with environmentally sensitive area (ESA) fencing. Access roads will be lined with geo-fabric and aggregate rock to limit erosion and compaction. After construction, the geo-fabric and aggregate will be removed from the project site. All temporary impacts to the wetland will be restored to their preconstruction condition to the maximum extent feasible.
USACOE 404: Individual						
USACOE Section 10 Permit						
USCG Section 9 Permit						
ENVIRONMENTAL COMMITMENTS	Water Quality					
	After construction general pollutants such as sediment and heavy metals could also degrade the water quality in the receiving waters		Office of Water Quality	Construction	Construction Site Best Management Practices (BMP) for this project will include waste management and material pollution controls.	
	Pollutants from construction activities may impact a potential seasonal wetland.		Office of Water Quality	PS&E	A SWPPP will be implemented prior to construction to avoid and minimize discharges into the potential seasonal wetland. This is a condition of the CWA 401 permit.	
	Biology					
California clapper rail, Salt marsh harvest mouse and California black rail			Biology	Construction	Preconstruction surveys, qualified biologist will monitor during construction, ESA Fencing will delineate sensitive habitat, mouse proof barrier fencing will be used during construction, there will be limited vehicle usage and critical habitat will be revegetated.	

DRAFT

	Ref.	NSSP S/28	Responsible Staff	Timing	Action Taken	Date
ENVIRONMENT			Biology	Construction	If any Longfin Smelt, Delta Smelt, Sacramento Splittail, Chinook salmon, Central Valley spring-run Chinook salmon, winter-run Chinook salmon and Central Valley fall and late-fall Chinook salmon and Central Valley steelhead and Central California Coastal steelhead	
					If any Longfin Smelt, Delta Smelt, Sacramento Splittail, Chinook salmon, Central Valley spring-run Chinook salmon, winter-run Chinook salmon and Central Valley fall and late-fall Chinook salmon and Central Valley steelhead or Central California Coastal steelhead is found during construction then activities will be stopped and the NMFS/CDFG will be contacted.	
			Hazardous Waste	Design	Asbestos will be tested for because of the excavation and demolition of the off-ramp	

A SDSY of the project PS&E must be sent to Environmental for review before finalization.

Attachments

Ref: Design, Status, Exec, Plan, File

OFFICE CHIEF OF ENVIRONMENTAL PLANNING

Apr-04

DRAFT

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Appendix D List of Acronyms

ARB	Air Resources Board
BCC	Birds of Conservation Concern
BMPs	Best Management Practices
BSA	Biological Study Area
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CISS	Cast-In-Steel Shell
CNPS	California Native Plant Society
CO	Carbon monoxide
CWA	Clean Water Act
DNF	Dissolved Nitrogen Flotation
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FESA	Federal Endangered Species Act
GHG	Greenhouse gases
GSRDs	Gross Solids Removal Devices
HV	High Visibility
I-680	Interstate 680
IPCC	Intergovernmental Panel on Climate Change

IS	Initial Study
LOTB	Log of Test Borings
MCE	Maximum Credible Earthquake
MEP	Maximum Extent Practicable
MPB	Mouse-Proof Barrier
ND	Negative Declaration
NES	Natural Environment Study
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PDT	Project Develop Team
PGA	Peak Ground Acceleration
PS&E	Plans, Specifications, and Estimates
PSSR	Project Scope Summary Report
RWQCB	Regional Water Quality Control Board
SHOPP	State Highway Operation and Protection Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

Appendix E List of Technical Studies

Air, Noise and Energy Report, Caltrans District 4 Office of Environmental Engineering, September 8, 2008.

Carquinez Bridge Report, Natural Environment Study and Biological Assessment, Supplemental Report, Caltrans District 4 Office of Natural Sciences and Permits, September 1997.

Cultural Resources Report, Caltrans District 4 Office of Cultural Resource Studies, August 5, 2008.

District Preliminary Geotechnical Report, Caltrans District 4 Office of Geotechnical Design – West B, Date?

Hazardous Waste Report, Caltrans District 4 Office of Hazardous Waste, September 12, 2008.

Location Hydraulic Study, Caltrans District 4 Office of Engineering Service, September 23, 2008.

Natural Environment Study, Caltrans District 4 Office of Biological Sciences and Permits, March 2010.

STRAIN Data/Bridge Inspection Report, Caltrans Headquarters, September 30, 2006.

Visual Impacts and Landscape Report, Caltrans District 4 Office of Landscape Architecture, August 13, 2008.

Water Quality Report, Caltrans District 4 Office of Water Quality, September 5, 2008.

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Appendix F Endangered Species List

California Department of Fish and Game
 Natural Diversity Database
 Selected Elements by Scientific Name - Portrait

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Arctostaphylos pallida</i> pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1.2	1B.1
2 <i>Holocarpha macradenia</i> Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1.1	1B.1
3 <i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
4 <i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	
5 <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	

**U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office**

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 090109120623

Database Last Updated: December 24, 2008

Quad Lists

WALNUT CREEK (465A)

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Speyeria callippe callippe*
callippe silverspot butterfly (E)

Fish

- Hypomesus transpaciificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense*
California tiger salamander, central population (T)
- Rana aurora draytonii*
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

- Masticophis lateralis euryxanthus*
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)
- Thamnophis gigas*
giant garter snake (T)

Birds

- Rallus longirostris obsoletus*
California clapper rail (E)
- Sternula antillarum* (= *Sterna*, = *albifrons*) *browni*
California least tern (E)

Proposed Species

Amphibians

- Rana aurora draytonii*
Critical habitat, California red-legged frog (PX)

BRIONES VALLEY (465B)

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Speyeria callippe calliope*
callippe silverspot butterfly (E)

Fish

- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense*
California tiger salamander, central population (T)
- Rana aurora draytonii*
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

- Masticophis lateralis euryxanthus*
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

- Rallus longirostris obsoletus*
California clapper rail (E)
- Sternula antillarum* (=Sterna, =albifrons) browni
California least tern (E)

Plants

- Arctostaphylos pallida*
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)
- Holocarpha macradenia*
Santa Cruz tarplant (T)

Proposed Species

Amphibians

- Rana aurora draytonii*
Critical habitat, California red-legged frog (PX)

BENICIA (482C)

Listed Species

Invertebrates

- Branchinecta conservatio*
Conservancy fairy shrimp (E)
- Branchinecta lynchi*
vernal pool fairy shrimp (T)

Speyeria callippe callippe
callippe silverspot butterfly (E)
Syncaris pacifica
California freshwater shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)
Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)
Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Rana aurora draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)
Thamnophis gigas
giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)
Pelecanus occidentalis californicus
California brown pelican (E)
Rallus longirostris obsoletus
California clapper rail (E)
Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)
Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Proposed Species

Amphibians

Rana aurora draytonii
Critical habitat, California red-legged frog (PX)

Plants

Cordylanthus mollis ssp. mollis

Critical habitat, soft bird's-beak (PX)

VINE HILL (482D)

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Elaphrus viridis*
delta green ground beetle (T)
- Speyeria callippe callippe*
callippe silverspot butterfly (E)
- Syncaris pacifica*
California freshwater shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Rana aurora draytonii*
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

- Masticophis lateralis euryxanthus*
Alameda whipsnake [=striped racer] (T)
- Thamnophis gigas*
giant garter snake (T)

Birds

- Rallus longirostris obsoletus*
California clapper rail (E)
- Sternula antillarum* (=Sterna, =albifrons) browni
California least tern (E)

Mammals

- Reithrodontomys raviventris*
salt marsh harvest mouse (E)

Plants

- Cordylanthus mollis ssp. mollis*
soft bird's-beak (E)

Proposed Species

Amphibians

- Rana aurora draytonii*

Critical habitat, California red-legged frog (PX)

County Lists

Contra Costa County

Listed Species

Invertebrates

- Apodemia mormo langei*
Lange's metalmark butterfly (E)
- Branchinecta conservatio*
Conservancy fairy shrimp (E)
- Branchinecta longiantenna*
Critical habitat, longhorn fairy shrimp (X)
longhorn fairy shrimp (E)
- Branchinecta lynchi*
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)
- Speyeria callippe callippe*
callippe silverspot butterfly (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Eucyclogobius newberryi*
tidewater goby (E)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus kisutch*
coho salmon - central CA coast (E) (NMFS)
- Oncorhynchus mykiss*
Central California Coastal steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)

Sacramento Fish & Wildlife Office Species List

http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm

Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
 Critical habitat, winter-run chinook salmon (X) (NMFS)
 winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
 California tiger salamander, central population (T)

Rana aurora draytonii
 California red-legged frog (T)
 Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
 Alameda whipsnake [=striped racer] (T)
 Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
 giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
 western snowy plover (T)

Pelecanus occidentalis californicus
 California brown pelican (E)

Rallus longirostris obsoletus
 California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
 California least tern (E)

Mammals

Reithrodontomys raviventris
 salt marsh harvest mouse (E)

Vulpes macrotis mutica
 San Joaquin kit fox (E)

Plants

Amsinckia grandiflora
 large-flowered fiddleneck (E)

Arctostaphylos pallida
 pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Cordylanthus mollis ssp. mollis
 soft bird's-beak (E)

Sacramento Fish & Wildlife Office Species List

http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm

Erysimum capitatum ssp. angustatum
 Contra Costa wallflower (E)
 Critical Habitat, Contra Costa wallflower (X)

Holocarpha macradenia
 Critical habitat, Santa Cruz tarplant (X)
 Santa Cruz tarplant (T)

Lasthenia conjugens
 Contra Costa goldfields (E)
 Critical habitat, Contra Costa goldfields (X)

Oenothera deltooides ssp. howellii
 Antioch Dunes evening-primrose (E)
 Critical habitat, Antioch Dunes evening-primrose (X)

Proposed Species

Amphibians

Rana aurora draytonii
 Critical habitat, California red-legged frog (PX)

Plants

Cordylanthus mollis ssp. mollis
 Critical habitat, soft bird's-beak (PX)

Key:

- (E) *Endangered* - Listed as being in danger of extinction.
 (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
 (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
 (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
 (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
 (C) *Candidate* - Candidate to become a proposed species.
 (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
 (X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the

county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 09, 2009.