Russian River Bridge Replacement Project

DRAFT

Initial Study / Mitigated Negative Declaration

Approximately 0.8 km (0.5 mile) East of the City of Ukiah and
Just West of the Town of Talmage, Mendocino County, California

01-MEN-222-KP 1.6 (PM 1.0)
EA 01-38050

June 2006

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of the proposed project located in Mendocino County, California. The document describes why the project is being proposed; the existing environment that could be affected by the project; potential impacts; and the proposed avoidance, minimization and/or mitigation 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:

  Caltrans District 1 Office
  1656 Union Street
  Eureka, CA 95501

  Ukiah Library
  105 N. Main Street
  Ukiah, CA 95482

- We welcome your comments. If you have any comments regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via postal mail to: Jeremy Ketchum, Environmental Branch Chief, Attention: Aaron McKeon, Dept. of Transportation, Environmental Planning, 2389 Gateway Oaks Drive, Suite 100, Sacramento, CA 95833.
- Submit comments via email to aaron.mckeon@dot.ca.gov.
- Submit comments by the deadline: July 14, 2006.

What happens next?

After comments are received from the public and reviewing agencies, Caltrans may: (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project. For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Aaron McKeon, Office of Environmental Management, S-1, 2389 Gateway Oaks Drive, Sacramento, CA 95833; (916) 274-0607 Voice, or use the California Relay Service TTY number, 1-800-735-2929.

State Clearinghouse Number: TBA
01-MEN-222-KP 1.6
EA 01-38050

Approximately 0.8 km (0.5 miles) East of the City of Ukiah and
Just West of the Town of Talmage,
Mendocino County, California

INITIAL STUDY
AND PROPOSED MITIGATED NEGATIVE DECLARATION

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

THE STATE OF CALIFORNIA
Department of Transportation

Date of Approval
9 June 2006
Date of Approval

John D. Webb
Chief, North Region Environmental Services
California Department of Transportation

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Chief, North Region Environmental Services
California Department of Transportation

State of California
Department of Transportation

SCH Number: 2006062038
01-MEN-222-KP 1.6
EA 01-38050

Proposed Mitigated Negative Declaration (ND)

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to replace the Russian River Bridge along Route 222 at KP 1.6 (PM 1.0) in Mendocino County. The new bridge would be slightly wider than the existing bridge, with wider shoulders on either side of the traffic lanes instead of sidewalks as on the existing bridge. The new structure would have two new abutments and four piers, compared to the existing bridge's two abutments and five piers. Project activities would take place over three construction seasons, with any work below the river's ordinary high water mark occurring between June 15 and October 15. Construction is currently planned to begin in Spring 2008.

Determination

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

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

The proposed project would have no effect on agricultural resources, cultural resources, land use and planning, mineral resources, population and housing, public services, recreation, and utility and service systems.

The project would have no significant effect on aesthetics, air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, or transportation/traffic. The project includes a number of avoidance and impact minimization measures.

The proposed project would have no significantly adverse effect on biological resources because the following mitigation measures would reduce potential effects to less-than-significant levels:

- Riparian Habitat Disturbance: All large trees removed for access shall be used as cover along the banks of the river. Fallen trees shall be anchored to the bank of the river outside, but in close proximity to, the work area in order to replace some portion of the cover lost by removing the riparian area. Upon completion of the project, all riparian and jurisdictional wetland areas that have been temporarily impacted by the project shall be restored to approximate original site conditions. A revegetation/restoration plan shall be developed and implemented. The plan shall include removal of non-native vegetation that may have reestablished, replanting of native species present at the site, and success criteria by species. The plan shall be implemented and monitored for success for a 5-year period. Success criteria shall include goals for both plant survivorship and vigor. Riparian vegetation and wetlands shall be restored on-site at a 1:1 ratio (temporary impacts: 0.57 hectare [1.4 acres] total riparian area, of which 0.299 hectare [0.728 acres] are considered jurisdictional wetlands).
- Coho salmon, Chinook salmon, and Steelhead: measures to avoid and minimize disturbance to these species include:
  - Work Area Preparation. All fill shall be removed from the channel before October 15 of each construction season and stockpiled outside of the channel for use the following year. If fill removal reduces the amount of native material available for recontouring, clean washed cobble and gravel shall be imported. Riverbed contours shall be restored based on photographs of the riverbed taken immediately prior to the beginning of each year's in-channel activity. A streambed restoration plan shall be developed and upon completion of construction, the river bed shall be restored based on this plan.
  - Substrate Compaction. The work area shall be recontoured at the end of each construction season to closely approximate the habitat present prior to that year's construction. Equipment used to recontour habitat shall also be used to loosen compacted spawning gravels.
  - Pile Driving and Coffer Dam Installation. A dampening block shall be placed between the hammer and the piles to attenuate sound pressure levels. The river channel shall be diverted such that pile driving does not take place directly in the water. Cofferdam sheet piles shall be pushed and tapped into place to reduce potential for barotrauma or, if necessary, a dampening block

will be used. A qualified fisheries biologist shall be on site during placement of the cofferdams to remove any trapped fish prior to any activity occurring within the cofferdams. All water within the cofferdam shall be pumped into an infiltration basin to remove suspended solids. All debris shall be removed from within the cofferdam and the disturbed area shall be covered in clean-washed spawning-sized gravel to the level of the riverbed surrounding the cofferdam.

- Osprey and other migratory birds. To avoid adverse effects to nesting birds, the removal of riparian vegetation within the work area shall take place between August 31 and February 15, outside the nesting season. As construction activities shall occur during the February 15 to August 31 nesting season, pre-construction surveys shall be conducted by a qualified biologist approximately one week before construction is scheduled to begin. The biologist shall determine the presence or absence of any active nests within 61 meters (200 feet) of the project site. If no breeding or nesting activity is observed, construction activities may proceed and no take would occur. If breeding or nesting activity is detected, Caltrans will contact CDFG to determine the need for a no-disturbance buffer or the need to monitor the nest. Removal of any active nest trees is expressly prohibited.

_____
Date of Approval

_____
John D. Webb
Chief, North Region Environmental Services
California Department of Transportation

Summary

Project Description

The Russian River Bridge is a six-span steel I-girder bridge constructed in 1954. It is situated on Route 222 between the towns of Ukiah and Talmage in Mendocino County. Over the past 30 years, the Russian River channel bed has significantly degraded, causing scouring of the piers. As a result, it was recommended that the Russian River Bridge be replaced.

The new bridge would be slightly wider than the existing bridge, with wider shoulders on either side of the traffic lanes instead of sidewalks. The new structure would have two new abutments and four piers, compared to the existing bridge's two abutments and five piers.

Project activities would take place over three construction seasons, with any work below the river's ordinary high water elevation occurring between June 15 and October 15. Riparian vegetation would be removed around the bridge to provide access for construction equipment. Cofferdams may be constructed to facilitate construction and pier removal along with falsework to support new concrete forms. New piers and footings would be installed through a cast in steel shell process. In addition, the low flow channel of the river would be diverted to pass through the work area between the bridge piers, and a temporary crossing may be built to allow construction equipment access. One-half of the bridge would be replaced at a time, allowing for one-way, alternating vehicle use.

Impacts and Mitigation

The following table summarizes the potential impacts of the project along with the associated mitigation, minimization, and avoidance measures. General impacts that may occur as a result of the project overall are listed first, followed by more specific biological impacts that may occur as a result of specific project activities.

Potential Impact	Mitigation, Minimization, and Avoidance Measures
Traffic delays (up to 15 minutes) due to one-way traffic controls. Traffic controls may be in place for as long as 21 months.	A Traffic Management Plan Data Sheet has been developed for this project. Residents will be given advance notice of anticipated delays
Reduction in emergency service response times	Emergency service organizations will be given advance notice of construction activities; emergency vehicles will have priority in passing through construction sites and detours are available
Reduction in visual/aesthetic character	See through bridge railings will be used to enhance views of the Russian River. Native vegetation would be reestablished after project completion
Disturbance of cultural resources	Work would temporarily cease in the area if cultural resources or human remains were found; appropriate means for disposition of the resources/remains would be determined
Spills of hazardous materials	Use spill prevention and control BMPs defined in site-specific SWPPP to be developed.
Increased dust and exhaust emissions from construction equipment	Caltrans Standard Specifications for air pollution and dust control will be implemented during construction
Noise	Caltrans Standard Specifications for sound control requirements will be implemented during construction
Temporary Disturbance/removal of 0.57 hectare [1.4 acres] total riparian area, of which 0.30 ha [0.74 acres] are considered jurisdictional wetlands.	• Use downed trees as cover upstream and downstream of work area • Develop riparian revegetation plan • Replant and monitor plant re-establishment at 1:1 ratio or as agreed to with resource agencies • Construction BMPs for water pollution control and soil erosion will be implemented
Increased erosion/water turbidity	• Use erosion control and slope stabilization BMPs defined in site-specific SWPPP • Dispose of only clean gravel/cobble on-site
Loss of migratory bird nests	Vegetation removal will be done prior to nesting season; surveys will be conducted before project construction

Potential Impact	Mitigation, Minimization, and Avoidance Measures
Disturbance of 0.23 ha (0.57 acres) of non-wetland waters of the U.S. Change in bottom contour and substrate composition may decrease gravel/cobble suitability for spawning	• Photograph riverbed immediately prior to each year's in-channel construction. At end of each work year, remove all fill and recontour with native material to condition existing prior to that year's construction activity. • Develop streambed restoration plan and implement when construction is complete • Dispose of only clean gravel/cobble on-site.
Increased siltation may degrade spawning habitat	• Use BMPs defined in site-specific SWPPP • Remove all fill after each construction year • Dispose of only clean gravel/cobble on-site.
Mortality to foothill yellow-legged frogs and northwestern pond turtles	Preconstruction survey by qualified biologist and construction monitoring; any found would be relocated by a qualified biologist to the nearest suitable habitat.
Mortality to swallows and bats nesting or roosting on bridge	Net bridge prior to bird and bat migration each construction year
Debris from deck and pier demolition resulting in decreased water quality, impacts to listed salmonids, fouling of spawning gravels	• Suspend box or fabric hammock under deck demolition area • Remove all demolition debris • Cover/fill area around removed piers to grade with clean gravels
Barotrauma from underwater pressure wave during pile driving and cofferdam construction activities	• Dampening block to attenuate pressure wave • Limit work window from June 15 to October 15 when sensitive species are least likely to be present • Divert live-channel to dewater work area
Entrapment within cofferdams	Permitted biological monitor on-site to find and relocate any entrapped species
Water quality degradation due to dewatering of coffer dams	• Use BMPs defined in site-specific SWPPP • Construction dewatering will utilize a temporary infiltration basin to be constructed either within the dry river bed or above the bank to eliminate release of sediment laden water
Increased surface area of the new deck will result in increased shading of river, lowering temperatures	None; beneficial impact
Decreased volume of pier obstructions in river channel, increasing available habitat	None; beneficial impact

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List of Abbreviated Terms

APE	Area of Potential Effect
BAT	Best Available Technology
BCT	Best Conventional Technology
BFE	base flood elevation
BMP	best management practice
BSA	biological study area
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CBC	California Building Code
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic foot/feet per second
CGS	California Geological Survey
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	carbon monoxide
CWA	Clean Water Act
ESU	evolutionarily significant unit
FESA	Federal Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
ft	foot/feet
ha	hectare(s)
in	inch(es)
km	kilometer(s)
km^2	square kilometer(s)
KP	kilometer post
m	meter(s)
M	moment magnitude
MCAQMD	Mendocino County Air Quality Management District
MEP	maximum extent practicable
mi	mile(s)
mi^2	square mile(s)
MND	Mitigated Negative Declaration
MP	mile post
NAAQS	national ambient air quality standards
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OHWE	ordinary high water mark
Pb	lead
PG&E	Pacific Gas and Electric
PM	Post mile
PM_{10}	particulate matter less than 10 micrometers in diameter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
RCRA	Resource Conservation and Recovery Act of 1976
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
UBC	Uniform Building Code
US 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1 Proposed Project

1.1 Purpose and Need

The California Department of Transportation (Caltrans), the lead California Environmental Quality Act (CEQA) agency for the project, proposes to replace the Russian River Bridge in Mendocino County, California. The Russian River Bridge as bridge #10-80) is a six-span steel I-girder bridge constructed in 1954. Significant degradation of the Russian River channel bed at the bridge has occurred during the last 30 years. Scouring of the river bed at the bridge is considered critical. The purpose of the proposed project is to replace the existing bridge with one whose structural stability would not be affected by scour. The replacement bridge's foundation will be much deeper than that of the existing bridge; scour action will no longer have the potential to reach the bridge's lower foundation.

Historic stream cross-section data indicate that the Russian River channel has shifted laterally and degraded considerably since the bridge was built in 1954. The channel degraded approximately 3 m (9.8 ft) between 1954 and 1979, possibly due to adjacent in-channel mining or changes in the river's flow regimes. The channel degraded approximately 1 m (3.3 ft) between 1979 and 1992 but has since stabilized. Historically, the bridge has had the following scour issues:

- Channel bed degradation due to in-stream mining immediately upstream and downstream of the bridge.
- Local pier scour.
- Exposure of the Pier 5 and 6 pile cap footings.
- Lateral channel migration.
- Bank instability.

The *Structure Replacement and Improvement Needs Report* (Caltrans 1997) identified the existing bridge as scour critical and recommended replacement of the structure. As a long-term scour mitigation countermeasure, the installation of outriggers at Piers 3, 4, 5, and 6 was investigated and was determined not to be a viable option. The construction of a downstream check dam was also investigated as a hydraulic countermeasure to control the riverbed elevation and channel bed degradation but was also determined not to be a viable alternative. After further investigations, it was determined that hydraulic and

retrofit countermeasures could not be used to resolve the channel bed degradation and protect the structural integrity of this bridge. Therefore, replacement of the Russian River Bridge is the recommended scour mitigation countermeasure option.

1.2 Project Description

The project area is located in Mendocino County where State Route (SR) 222 crosses over the Russian River (Kilometer Post [KP] 1.6/Post Mile [PM] 1.0), approximately 0.8 kilometer (km) (0.5 mile) east of the City of Ukiah's limits and just west of the town of Talmage (Figure 1).

The existing structure is approximately 153.2 m (502.6 ft) in length and 11 meters (36 ft) wide. The bridge has two 3.6 m (12 ft) lanes, two 0.3 m (1 ft) shoulders, and two 1.3 m (4 ft) sidewalks. The proposed structure would be widened to 14 m (46 ft) with two 3.6 m (12 ft) lanes, one 3.4 m (11 ft) shoulder, one 2.4 m (7.8 ft) shoulder, and tubular bicycle railings. A typical cross section for the new bridge is shown in Figure 2, and the project layout is shown in Figure 3.

The new structure would have two new abutments and four piers, compared to the existing bridge's two abutments and five piers. Abutments would be constructed by excavating to the bottom of the pile cap footing elevation. Abutment piling would then be driven for the footings. Once pile driving is completed, abutment footings would be constructed, followed by the reinforced concrete abutment.

The work window for construction activities below the ordinary high water mark (OHWM) is June 15 to October 15. Work below the OHWM would begin as soon as allowed by the permitting agencies. Construction activities above the OHWM may take place year round. If necessary, the Russian River channel may be diverted to prevent flows from entering the work area. The diversion would consist of a barrier between the waterway and the work area and access roads.

New piling would be driven into the ground using a method known as cast in steel shell. With this method, cylindrical steel shells are driven into the substrate with a pile driver. The soil inside the shell is removed either by drilling or water jetting, then the reinforcing steel cage is inserted and concrete poured. The design specifications for this project call for using shells 1.2 m (4 ft) in diameter. The equipment used for these

Figure 1 Project Location

Figure 2 Typical Cross Section of Proposed Russian River Bridge

Figure 3 Project Layout

activities would be located within the work area. Piers would be constructed directly as an extension of the piles using reinforced concrete.

Falsework would be used to support the formwork for the cast-in-place concrete work. The falsework would span the river channel and be removed once the concrete has cured and achieved the required strength. The falsework would be removed at the end of each stage of construction.

Cofferdams may be constructed around the existing bridge pier pile cap footings to facilitate their removal. Cofferdam construction, if used, would consist of driving interlocking sheet piles into the bed of the river. The area confined by the cofferdam would be excavated to a specified elevation.

At the end of the restricted work time each year, any work pads and stream diversions installed would be removed completely and the river returned to its pre-construction location. All construction equipment and material would be removed from the floodplain area at the end of each year's construction season.

Equipment used during construction could consist of large cranes, large excavators, track hoes, front-end loaders, bulldozers, drilling and pile driving rigs, concrete trucks and pumping units, and miscellaneous other construction equipment.

Removal of trees and tall riparian vegetation would be required to allow crane access to remove the old bridge sections and construct the new structure. Figure 4 shows the area of vegetation expected to be disturbed in each quadrant. Each quadrant is approximately 30 m (100 ft) wide and extends from the river channel to beyond the top-of-bank. Vegetation removal will be minimized where possible.

On-site riparian replacement planting as well as off-site riparian mitigation would be implemented to offset these impacts. Mitigation ratios would be negotiated with the governing agencies. The following agencies will be involved with review and approval of this project: the California Department of Fish and Game (CDFG), Mendocino County, the Regional Water Quality Control Board (RWQCB), the U.S. Army Corps of Engineers (USACE), and the National Oceanographic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) (during endangered species consultations).

Staging Area and Access Roads

The proposed staging area is in Caltrans right of way to the northwest of the bridge, as shown on Figure 3. The staging area will be used by the contractor to gain access to the construction area and to store equipment and construction materials.

The proposed staging area can be accessed from the roadway.

Due to the size of the equipment needed and because construction of each side of the bridge will occur while traffic is still using the other side of the bridge, access to the riverbed will be required from all four quadrants of the project area (northeast, northwest, southeast, and southwest).

For all access and staging areas, all applicable best management practices (BMPs) for site access will be implemented in accordance with the project Storm Water Pollution Prevention Plan (SWPPP) to be prepared by the Contractor. Those BMPs may include but are not limited to: silt fences, fiber rolls, straw bales, sandbag barriers, check dams, and sediment basins. The Contractor awarded the project will prepare the SWPPP with proposed BMPs that could be available for review prior to the beginning of construction.

Standard Impoundment and De-watering Methodology

The Russian River has its lowest flows during the late summer months. As the water level lowers, the river often follows different courses within the channel. This can be due to erosion on the banks, scouring at the bridge piers, and upstream gravel mining. As a result, the precise location of the low-flow channel during any of the proposed construction activities cannot be determined until just prior to construction. In the dry season of 2003, the active channel sustained water flow only between Piers 5 and 6 (Figure 5).

To obtain access to each quadrant of the existing bridge during construction, a temporary construction trestle may be built in conjunction with the river diversion. The low-flow channel may be diverted between the existing bridge piers as described, using clean gravel and a concrete barrier such as temporary concrete railing (k-rail) to create a narrowed channel flowing between the barriers. It may be necessary to recontour the river bottom to prepare the in-channel work area. Any excess native substrate will be stockpiled until the end of the construction season when it would be used to recontour the river bottom to the preconstruction condition. Once the channel is diverted, clean fill may be placed between the bank and the k-rail barriers to a level near the top of the k-rail. The area between the bank and the k-rail stream diversion can be lined with fabric to separate

Figure 4 Estimated Riparian Vegetation Disturbance

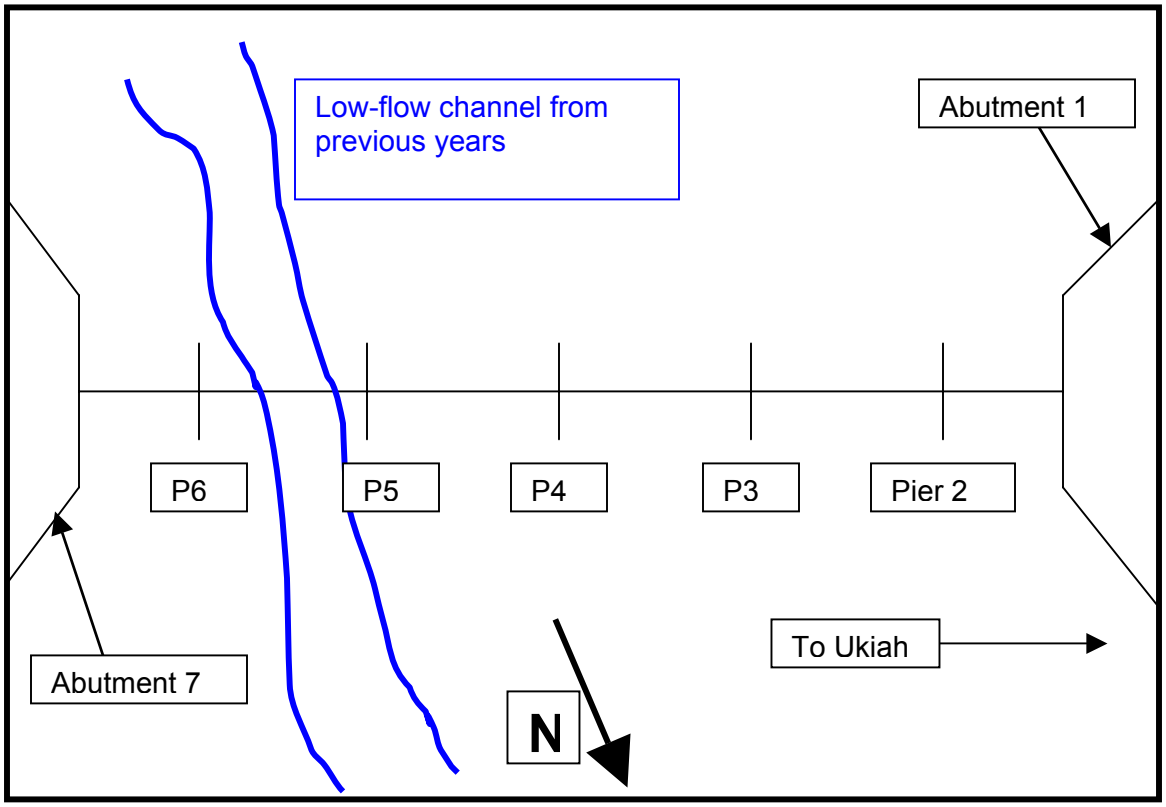

Figure 5 Low-Flow Active Channel from Previous Years

the temporary fill material from the native riverbed materials and make removal of the fill and restoration of the stream channel simpler and more effective. The stream channel between the k-rail may be spanned by rail flatcars with continuous steel decking to create an approximately 8.5 m (28 ft) wide temporary bridge across the stream channel.

It is anticipated that the stream diversion will leave a channel approximately 9 to 12 m (30 to 40 ft) wide that may be spanned by the temporary bridge. A work area of approximately 24 m (50 ft) would be needed between the bank and the crossing on each side of the stream channel. The fill would extend beneath the portion of the existing bridge structure to be demolished in each stage. Approximately 344 cubic meters (450 cubic yards) of temporary fill material would be needed to create the crossing and work areas.

Since the new bridge would be constructed one half-width at a time, if a construction trestle is used, it will only be built on the side of active construction for each stage. At the

end of the first in-river construction season, all materials, including temporary fill, would be removed from the riverbed, covered, and stockpiled outside the riverbed for reuse during the second stage. The riverbed would be restored to original contours using native river bar materials after each in-river construction season.

The construction trestle crossing may reduce the need to create access for construction equipment at the river banks near all four quadrants, as equipment could enter the construction area from one quadrant and cross to the other via a temporary trestle. A temporary crossing may also be employed to catch construction and demolition debris over the stream channel.

Excavation would occur around each footing to remove existing the piers, causing subsurface water to pool around the footing. Pumping within the excavations will be required to maintain a de-watered work area. The effluent will be pumped into an infiltration basin and disposed of off site. The basin will be located either on the in-channel river bar or outside of the river channel. After construction, any residual silt or fine materials within the infiltration basin will be removed and disposed of off site.

1.3 Alternatives

Build

The proposed project has one build alternative (preferred alternative) that is described in Section 1.2. As previously discussed, several options for controlling scour were considered, including construction of a downstream check dam and outriggers on certain piles. After investigation and analysis, these options were not considered to be viable. For example, hydraulic scour mitigation countermeasures such as check dams would block fish passage and, therefore, are not an option.

No-Build

The No-Build alternative would not replace the bridge or provide other scour protection measures. Under the No-Build alternative, the Russian River channel bed near the bridge would continue to degrade, causing further deterioration of the structural integrity of the bridge.

1.4 Proposed Schedule and Order of Construction Work

Construction of the replacement bridge would begin in Spring 2008 and take place in three construction stages on the existing alignment. The first stage (year 1) would consist of the removal of a portion of the existing bridge and the construction of one-half of the new bridge. One-way traffic control would be implemented on the north side of the

existing bridge during the construction of the new bridge on the south side. The second stage (year 2) would provide one-way traffic control on the new south side during demolition and construction of the north side of the new bridge. The existing bridge piers would be removed in stage three (year 3). The third stage will have all traffic moving on the completed new bridge while the piers and abutments from the old bridge are being removed beneath it. Various construction methods would be used in each stage to prevent bridge debris from entering the water during all demolition activities over the channel. Bicyclists and pedestrians will be accommodated on the bridge throughout project construction. Construction is expected to be completed by Fall 2010.

1.5 Permits and Approvals Needed

The proposed project would require disturbance of the streambed to gain access to replace the Russian River Bridge. As a result, the following permits and approvals would need to be obtained or would need to be adhered to if already in place (such as the Statewide National Pollutant Discharge Elimination System [NPDES]):

- Section 404 Permit from the USACE.
- Section 7 endangered species consultation and Biological Opinion from NOAA Fisheries.
- 1601 Streambed Alteration Agreement from the CDFG.
- RWQCB Section 401 Permit.
- Caltrans NPDES Statewide Permit (Order No. 99-06 DWQ)
- Caltrans Construction General Permit (Order No. 99-08-DWQ)

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

2.1 Human Environment

As part of the scoping and environmental analysis conducted for the project, the following environmental resources were considered but are not detailed in this report:

- Coastal Zone
- Wild and Scenic Rivers
- Timberlands
- Paleontology

These resources are not present within the project limits and will not be affected by the project. No potential for adverse impacts to these resources was identified. Consequently, no further discussion regarding these resources is included.

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

The project area is located in unincorporated Mendocino County, east of the City of Ukiah and west of the unincorporated community of Talmage. Land use in this area is predominantly agricultural and includes orchards and vineyards. East of the bridge, industrial properties lie to both the north and south of SR 222 and are surrounded by agricultural lands.

The Mendocino County General Plan (Mendocino County 2006) designates the land in Talmage for Rural Community use. A Rural Residential District is located adjacent to Talmage along with the large City of Ten Thousand Buddhas complex (a monastery located on the grounds of a former state hospital), which is designated as a Rural Community District. Talmage contains a mix of housing, public spaces, and commercial activity.

2.1.1.2 Consistency with State, Regional, and Local Plans

The proposed project is located in the Ukiah Valley. In January 2002, Mendocino County prepared a draft version of the *Ukiah Valley Area Plan* (Mendocino County 2002), which was tentatively adopted in 2003. The plan designates SR 222 as a "Major Collector." Major collectors typically connect arterial routes to one another or to communities. In this case, SR 222 connects an arterial, U.S. Highway 101 (US 101), to the community of Talmage. Although the proposed project is not discussed specifically in the *Ukiah Valley Area Plan*, it is listed in Mendocino County's Regional Transportation Plan (MCG 2002). As the proposed project would not affect the roadway's capacity, it would not likely affect transportation plans for the Ukiah Valley.

2.1.1.3 Park and Recreational Facilities

No park or recreational facilities exist in the project area. Therefore, no impact would occur.

2.1.1.4 CEQA Considerations

The project is anticipated to result in less-than-significant impacts to land use pursuant to CEQA.

2.1.2 Growth

The proposed project does not include any improvement in roadway capacity in this area. The proposed project would not remove obstacles to development or otherwise affect growth rates in nearby communities.

2.1.3 Farmlands

2.1.3.1 Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (7 U.S. Code [USC] 4201–4209 and its regulations, 7 Code of Federal Regulations [CFR] Ch. VI Part 658) require federal agencies such as FHWA to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and agricultural land of statewide or local importance.

CEQA requires the review of projects that would convert agricultural lands under Williamson Act contracts to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through

reduced property taxes to deter the early conversion of agricultural and open space lands to other uses.

2.1.3.2 Affected Environment

Areas adjacent to the Russian River Bridge are planted with pear orchards and vineyards. Farmland in this area includes prime soils, with several parcels enrolled in Williamson Act contracts.

2.1.3.3 Impacts

The project would not acquire agricultural land or result in long-term impacts on agricultural land use in the area. In addition, the project would not use land from any of the adjacent parcels enrolled in Williamson Act contracts.

2.1.3.4 CEQA Considerations

No impacts to farmlands and Williamson Act properties pursuant to CEQA are anticipated.

2.1.4 Community Character and Cohesion

2.1.4.1 Regulatory Setting

Under CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in a physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

2.1.4.2 Affected Environment

The project area is rural, with few residences nearby with which to establish a sense of community. Talmage and Ukiah are the two communities in the area that have definite boundaries. Otherwise, land uses in the area are agricultural and industrial.

2.1.4.3 Impacts

The proposed project would not alter the existing setting in an appreciable manner. No impacts to community character and cohesion are anticipated.

2.1.5 Relocation

2.1.5.1 Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and 49 CFR

Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S. Code 2000d, et seq.). Please see Appendix C for a copy of the Department's Title VI Policy Statement.

2.1.5.2 Affected Environment

The Russian River Bridge on SR 222 is situated between two communities: Ukiah and Talmage. The bridge is located in a sparsely populated area used for a combination of agricultural and industrial activities. The project location has a reputation as a haven for the homeless during the summer months, when the bridge and river offer shelter and a water supply. Estimates of the number of homeless camping in and around the bridge during the summer range from six to over 20. The bridge and surrounding area are not designated as a camping area and Caltrans does not condone trespassing on the part of homeless campers.

2.1.5.3 Impacts

The project would not involve any residential or commercial displacements. The noise, dust, and activity associated with project construction would make the area unattractive to the homeless. Given the transient nature of the homeless population, evidenced by the fact that they are elsewhere during the winter months when flooding makes the area uninhabitable, indirect impacts to homeless residents would be minimal.

2.1.5.4 Avoidance and Minimization Measures

Caltrans will ensure that signs warning of construction are placed in the construction area at least one month prior to construction.

2.1.6 Utilities/Emergency Services

2.1.6.1 Affected Environment

A Pacific Gas and Electric (PG&E) 6-inch high-pressure gas line run along the underside of the bridge. Overhead electrical and cable television lines run along the south side of the Russian River Bridge. A telephone line runs underground through the project area.

Police protection is provided by the Mendocino County Sheriff's Office. The nearest Sheriff's station is on Low Gap Road in Ukiah, about 5 km (3 miles) from the project location.

Fire protection is provided by the Ukiah Valley Fire District, which has a station about 4 km (2.5 miles) from the project area in Ukiah.

2.1.6.2 Impacts

The PG&E gas line would be relocated in stages during construction and would be carried by the new bridge. Overhead electrical and cable television lines would be relocated prior to project construction. This work would be coordinated with PG&E, and no interruptions to service are anticipated. The location o f the underground telephone line will be verified through excavation (small holes sometimes called "potholes").

During construction, the bridge would be restricted to a single lane, causing potential delays to emergency services in the area. The Ukiah Valley Fire District has said that, given advanced warning, the reduction to a single lane would not seriously affect fire response operations. In an emergency, detours are available both north to Vichy Springs Road and south to Hopland, via Old River Road.

2.1.6.3 CEQA Considerations

Less-than-significant impacts to utilities and emergency services pursuant to CEQA are anticipated.

2.1.7 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.1.7.1 Affected Environment

SR 222 provides access between Ukiah and Talmage. Average daily traffic was 8,000 vehicles in 2004 and is projected to grow to 8,640 vehicles by 2008. Traffic during peak hours averages approximately 730 vehicles per hour.

Alternate routes between Ukiah and Talmage include a 23 km (14.3 mile) detour along Old River Road to the SR 175 bridge to the south and a 3.4 km (2.1 mile) detour along Sanford Ranch Road to the Vichy Springs Road bridge to the north. The southern detour is susceptible to flooding during winter, as is the project location. The Vichy Springs Road crossing is less likely to flood, but reaching it from Talmage requires traversing hilly terrain along winding roads.

SR 222 is designated as a Class III county bicycle route. Both pedestrians and cyclists are frequently observed using this route. Although there are no sidewalks along SR 222 either east or west of the bridge, there are sidewalks on both sides of the bridge.

2.1.7.2 Impacts

The proposed project would replace the existing bridge, which provides sidewalks, with a new structure that does not provide sidewalks. However, the replacement structure would include a 2.4 m (7.8 ft) shoulder on the north side and a 3.4 m (11 ft) shoulder on the south side, widening the area available for pedestrian and bicycle crossing. Bicyclists and pedestrians will be accommodated on the bridge throughout project construction. As stated above, there are no sidewalks along SR 222 either east or west of the bridge, and there are no plans to add sidewalks between Ukiah and Talmage.

The proposed project would result in delays for motorists during project construction for two construction seasons. This may require as many as 21 months of one-way traffic control. During construction, the bridge would be restricted to a single lane with one-way traffic, controlled by flagmen during daytime construction hours and signalization during non-construction times. Under one-way traffic, with 304 m (1,000 ft) between closure points, the maximum delay would be 15 minutes. Average delays would be approximately 4 minutes. At night (during low traffic volume periods) when automatic signals are operating, sensors in the roadway would ensure that delays at the signals are similar to what motorists would experience at a signalized intersection. Vehicle queues at the closure points are estimated to average 23 cars (about 190 m (623 ft)) during peak traffic periods. The US 101 northbound off-ramp is approximately 530 m (1,740 ft) east of the western closure point. Traffic queues are not expected to affect motorists using the off-ramp.

A Traffic Management Plan Data Sheet has been developed for this project. Residents of the area will be notified well in advance of the anticipated delays. Detours are available both to the north and south of the bridge.

2.1.7.3 CEQA Considerations

Less-than-significant impacts to traffic and transportation and bicycle facilities pursuant to CEQA are anticipated.

2.1.7.4 Avoidance and Minimization Measures

The Traffic Management Plan Data Sheet will be included as part of the Contractor's specification package to manage temporary construction delays due to one-lane traffic controls.

2.1.8 Visual/Aesthetics

2.1.8.1 Regulatory Setting

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

2.1.8.2 Affected Environment

The visual quality along the Russian River Bridge alignment is moderate. The visual setting is mostly rural and agricultural, with some industrial. From the bridge, views of the foreground and middle ground include the Russian River, industrial facilities, orchards, vineyards, and rural residential properties. In the background, the Coastal Mountains provide a moderate to high-quality aesthetic experience. There are no public facilities such as sidewalks, decorative landscaping, or other elements that are often used in an urban setting to improve the visual quality for the traveling public.

2.1.8.3 Impacts

No long-term adverse impacts would be created by replacing the existing bridge with a new structure on the existing alignment. The new bridge would have a more streamlined form than the existing bridge. In addition, the proposed bridge railing, due to its see-through design, would improve views of the foreground and middle ground when viewed from the bridge deck. Temporary moderate to high visual impacts would result from the removal of existing riparian vegetation within the state right of way limits. The existing vegetation screens views of industrial and agricultural land uses adjacent to the Russian River.

Temporary impacts would occur during project construction due to staging of equipment and materials. Passing vehicles will observe the storage of heavy equipment, dirt, and other materials required for project construction. Erosion control measures such as straw bales and erosion control fabric will also be visible from the roadway. During construction, local pullouts may not available for public use. These temporary visual impacts are part of the general construction landscape and do not require mitigation. Temporary traffic signage will be used to direct motorists through the construction site.

2.1.8.4 CEQA Considerations

Less-than-significant impacts to visual/aesthetic resources pursuant to CEQA are anticipated with application of the following avoidance and minimization measures.

2.1.8.5 Avoidance and Minimization Measures

The following recommendations will reduce natural resource impacts and temporary adverse visual impacts:

- Revegetation would be performed to reduce long-term visual impacts to the riparian corridor when viewed from the bridge structure. Native species would be planted on affected slopes where conditions allow. The revegetation plan would be developed by the project biologist, project revegetation specialist, and project landscape architect.
- Type-80 "see-through" bridge railing would be used to improve motorists' views of the Russian River.

2.1.9 Cultural Resources

2.1.9.1 Regulatory Setting

Cultural resources as used in this document refers to all historical and archaeological resources, regardless of significance. The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement among the Advisory Council, Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The Programmatic Agreement takes the place of the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans.

Historical resources are considered under CEQA as well as California Public Resources Code Section 5024.1, which established the California Register of Historical Resources. Public Resources Code Section 5024 requires state agencies to identify and protect state-owned resources that meet NRHP listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights of way.

Public Resources Code Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or eligible for inclusion in

the NRHP or are registered or eligible for registration as California Historical Landmarks.

2.1.9.2 Affected Environment

The Area of Potential Effects (APE) for the project was established as a corridor of land ranging between approximately 25.0 m to 120.4 m (82.5 ft to 395 ft) wide within the post mile limits of the proposed project. The APE encompasses the maximum limits of all proposed construction activities, including both existing and proposed right of way and all temporary construction easements and staging areas.

2.1.9.3 Impacts

The Russian River Bridge was constructed in 1954. The bridge has been evaluated since it turned 50 years old and is not considered to be representative of innovative technologies, to be important to local historical trends, or to possess unusual ornamental or structural features. The bridge is listed as Category 5 in the California Historic Bridge Inventory and is not eligible for listing on the NRHP. Category 5 bridges are determined not eligible through the Section 106 process, either through a consensus determination with the SHPO or a formal determination of ineligibility by the Keeper of the National Register.

Record searches and field reviews were performed and a Historic Property Survey Report (Caltrans 2005) was completed. No cultural resources were identified; therefore, no impacts to cultural resources are expected to occur as a result of this project. However, should cultural resources be encountered during construction, avoidance and minimization measures as described below under Avoidance and Minimization Measures will protect those resources.

2.1.9.4 CEQA Considerations

No cultural resources impacts with regard to CEQA would occur as a result of the project.

2.1.9.5 Avoidance and Minimization Measures

Although no potentially significant cultural resources impacts have been identified, undiscovered archeological resources could be encountered during construction. In the remote event that archaeological materials (e.g., artifacts including arrowheads, bottles, and foundations) are discovered during construction, work would temporarily cease in the area of the find until the Caltrans District Archeologist can evaluate the nature and significance of the materials and consult with the SHPO about the disposition of the materials (Environmental Handbook, Vol. 2, Chapter 1 [Caltrans 2006b]).

In the event that human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the county coroner has determined that the remains are not subject to provisions of Section 27491 of the California Government Code. If the coroner determines the remains to be Native American, he or she shall contact the Native American Heritage Commission within 24 hours. The commission will appoint a Most Likely Descendent for disposition of the remains (California Health and Safety Code Section 7050.5; Public Resources Code Section 5097.24).

2.2 Physical Environment

2.2.1 Hydrology and Floodplains

2.2.1.1 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 FHWA 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
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The 100-year 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 100-year floodplain."

2.2.1.2 Affected Environment

The Russian River originates in central Mendocino County, flowing south through the Ukiah Valley to Sonoma County where it turns west and flows to the Pacific Ocean. The Federal Emergency Management Agency (FEMA) study limits for the Russian River watershed extend roughly from Hopland in the south to Calpella in the north, covering about 1,132 km^2 (437 mi^2). Several tributaries flow into the Russian River north of Ukiah. The major contributors are York, Hensley, and Ackerman Creeks flowing from

the mountains in the west and the East Fork Russian River flowing through Potter Valley in the east. York Creek is 13 km (8 miles) long with a drainage area of 31 km^2 (12 square mi), Hensley Creek is 11.2 km (7 miles) long with a drainage area of 20 km^2 (7.6 square mi), and Ackerman Creek is 18 km (11 miles) long with a drainage area of 53.3 km^2 (20.6 square miles). The East Fork Russian River is 13 km (8 mi) long and has a drainage area of 75.4 km^2 (29.1 square miles). Minor contributors just upstream of the bridge are Mill and Doolin Creeks entering from the east and west, respectively.

The flood of record occurred in 1955, and the second-highest discharge occurred in 1964. The high-water mark (elevation) during the 1964 flood, recorded by the USACE, was 178 m (583.61 ft). No high-water mark was recorded for the 1955 flood.

FEMA's Flood Insurance Rate Map for the project area (#060183 0811B) indicates that the project location is within Zone 6A, defined as "Areas of 100 year flood." The Base Flood Elevation (BFE) just downstream of the existing bridge is 178 m (585 ft). The bridge is located within the FEMA-regulated floodway of the Russian River.

2.2.1.3 Impacts

Longitudinal Encroachment

This project would not have longitudinal encroachment impacts as it involves a lateral bridge crossing over the Russian River and its floodplain. As defined by the FHWA, longitudinal encroachments are actions within the limits of the base floodplain that are longitudinal to the normal direction of the floodplain.

Risks of the Action and Impacts on Natural and Beneficial Floodplain Values

A hydraulic analysis of both the existing and proposed structures was performed using the USACE's Hydrologic Engineering Centers River Analysis System (HEC-RAS) model version 3.1. Cross-sectional data were obtained from the original model used for the FEMA floodplain study. As the original study in 1981 used the HEC2 model, which has a slightly different computational scheme, the new model was calibrated with the original model within 0.15 m (6 inches). Various sizes of piers were studied, and the results are shown in Table 2-1. The maximum impact observed was an 0.018 m (0.74 inch) increase in water surface elevation. This increase would result in a negligible impact to the BFE established by FEMA. As a result, there would be less-than-significant increase in flood risk to humans and structures and a less-than-significant impact on natural and beneficial floodplain values. No mitigation for BFE impacts is necessary, based on the use of piers 1.2 m (4 ft) in diameter.

Table 2-1 Change in Water Surface Elevation Due to Pier Width

Distance Upstream of Bridge (meters)	Change in WSEL (m) 1.0 m pier	Change in WSEL (m) 1.2 m pier	Change in WSEL (m) 1.5 m pier
2,514	0	0	0
1,813	0	0	0.003
876	0	0.003	0.003
189	0	0.003	0.003
37	-0.003	0.006	0.018
15	-0.003	0.003	0.012
At bridge	0	0	0

WSEL = Water surface elevation

Support of Incompatible Floodplain Development

Incompatible floodplain development is defined as development that is not consistent with a community floodplain development plan. This project would not support any incompatible floodplain development. The project is limited to the replacement of the Russian River Bridge on SR 222.

2.2.1.4 CEQA Considerations

Less-than-significant impacts would occur to hydrology and floodplains pursuant to CEQA.

2.2.1.5 Avoidance and Minimization Measures

This project would have a negligible impact on the BFE of the 100-year floodplain. No avoidance or minimization measures are required.

2.2.2 Water Quality and Storm Water Runoff

2.2.2.1 Regulatory Setting

Section 303 of the federal Clean Water Act (CWA) requires states to adopt water quality standards for all surface waters of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. The State Water Resources Control Board (SWRCB) and the RWQCBs are responsible for ensuring implementation of and compliance with the provisions of the federal CWA and California's Porter-Cologne Water Quality Control Act. Water quality protection is the responsibility of numerous water supply and wastewater management agencies as well as city and county governments and requires the coordinated effort of these various entities.

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the CWA to regulate municipal and industrial discharges to surface waters

of the United States. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

The project area is within the jurisdiction of the North Coast RWQCB (Region 1). The North Coast RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges of waste that may impact water quality at locations within its jurisdiction. Water quality objectives for the Russian River drainage basin are specified in *The Water Quality Control Plan for the North Coast Region* (North Coast RWQCB 1993) (North Coast RWQCB Basin Plan) prepared in compliance with the federal CWA and the state Porter-Cologne Water Quality Control Act. The North Coast RWQCB Basin Plan establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in river basins within Region 1. Because the project area is located within the North Coast RWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the North Coast RWQCB's Basin Plan requirements.

Caltrans Statewide Permit and Construction General Permit

In 1999, the SWRCB issued "NPDES Permit, Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California Department of Transportation (Caltrans) Order No. 99-06-DWQ, NPDES No. CAS00003" (Caltrans Statewide Permit) that covers Caltrans' highways, highway-related properties, facilities, and activities, such as maintenance stations, roadside rest areas, weigh stations, park-and-ride lots, and construction sites. In addition, the Caltrans Statewide Permit covers both wet- and dry-weather discharges from storm water conveyance systems. Caltrans is required to reduce pollutants in storm water discharges to the maximum extent practicable. For discharges from a construction site, toxic pollutants must be reduced using the best available technology (BAT) that is economically achievable, and conventional pollutants must be reduced using the best conventional technology (BCT).

For construction activities that disturb greater than 1 acre (0.4 hectare) of soil, Caltrans shall obtain coverage under the "NPDES General Permit, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity Order No. 99-08-DWQ, NPDES No. CAS000002" (Construction General Permit) once a Notice of Construction has been filed for a specific project. The Construction General Permit is incorporated by reference into the Caltrans Statewide Permit.

For projects that will disturb greater than 1 acre (0.4 hectares) of soil during construction, the Construction General Permit requires that an effective Storm Water Pollution

Prevention Plan (SWPPP) be developed and implemented to reduce construction effects on receiving water quality.

2.2.2.2 Affected Environment

The climate of the interior Mendocino County is classified as Mediterranean, with warm, dry summers and cool, wet winters. The mean annual precipitation in Mendocino County is 50 inches. Over 75 percent of the total annual rainfall typically occurs between November and March. Flow rates for the Russian River at this location have a historic (1940-2003) annual mean of 706 cubic feet per second (cfs). January has the highest monthly mean for that period at 1,818 cfs while July has the lowest, at 198 cfs[1] (USGS 2003).

The North Coast RWQCB Basin Plan lists the beneficial uses of the Russian River and its tributaries around the project area at the hydrologic subarea level. The Ukiah Hydrologic Subarea in the Upper Russian River Hydrologic Area supports uses that include municipal (drinking water), agricultural, and industrial service supply; ground water recharge and freshwater replenishment; navigation; hydropower generation; contact and non-contact water recreation; and commercial and sport fishing. The Russian River also supports warm and cold freshwater and wildlife habitat; rare and endangered species; migration of aquatic organisms, and spawning and breeding habitats (North Coast RWQCB 2005).

Section 303(d) of the Clean Water Act requires states to identify waters that do not meet, or are not expected to meet, water quality standards even after technology-based or other required source controls are in place. These water bodies are considered water quality-limited and are reported by states in their 303(d) list. The Ukiah Hydrologic Subarea is listed as impaired for sedimentation/siltation and temperature. Potential sources for these impairments include habitat modification, removal of riparian vegetation, streambank modification and destabilization, and highway maintenance and runoff (SWRCB 2003). A sampling and analysis plan (SAP) for both visible and non-visible pollutants is required as part of the modifications to the General Construction Permit because of the 303(d) designation for this part of the Russian River. Preparation and implementation of a Caltrans SAP is described in *Caltrans Construction Site Storm Water Quality Sampling Guidance Manual* (2003c).

[1] Data from U.S. Geological Survey station 11461000 Russian River Near Ukiah, CA.

2.2.2.3 Impacts

The primary potential for water quality impacts is soil erosion and suspended solids being delivered to the Russian River during construction due to disturbance of soils, removal of vegetation, and dewatering activities. Mitigation measures for water quality impacts would focus on the control of sediment and suspended solids from entering waterways. The project is not anticipated to generate traffic in addition to the existing traffic volume projections. Thus, storm water pollutants related to vehicle traffic (e.g., heavy metals) are not expected to increase as a result of the project. The increase in the volume of runoff discharged to the Russian River due to the increase in paved surface area (approximately a 30% increase) of the new bridge deck is not expected to have a significant impact on water quality since the storm water that will fall on the new bridge deck area would have fallen directly into the river prior to the project.

Construction Impacts

During construction, temporary (short-term) adverse impacts could occur due to erosion and the subsequent transport of sediment that could eventually be discharged into the Russian River with storm runoff. Storm water runoff carrying suspended sediment and pollutants could drain into the Russian River. Sources of temporary adverse impacts to water quality may include:

- construction and use of the temporary construction crossing,
- pile driving and other construction activities within the river and floodplain,
- equipment or materials that would be placed directly in the river and floodplain,
- excavation activities that include, but are not limited to, construction of the roadbed and bridge abutments, and
- dewatering activities.

The project will likely involve dewatering of coffer dams. The discharge water would be released into an infiltration basin constructed in the dry river bed area. Construction dewatering activity is defined as pumped or drained discharges of groundwater and/or storm water from excavations or other points of accumulation associated with a construction activity. Caltrans would be required to implement the appropriate BMPs to meet the requirements and conditions for dewatering under the Caltrans Statewide Permit to ensure dewatering is not a source of pollutants to surface water or ground water.

Caltrans is required to reduce pollutants in storm water discharges to MEP levels. For discharges from a construction site, toxic pollutants must be reduced using the BAT that

is economically achievable, and conventional pollutants must be reduced using the BCT. Reducing possible construction activity pollutants to the MEP can be achieved by following the procedures in the *Storm Water Management Plan* (Caltrans 2003a) and the *Storm Water Quality Handbook, Project Planning and Design Guide* (Caltrans 2002).

Long-Term Impacts

Long-term impacts to water quality and changes in runoff volume due to construction activities and implementation of the proposed project are not expected to occur with adherence to the Caltrans Statewide Permit including implementation of a SWPPP, and the avoidance and minimimization measures described below.

Spills of Hazardous Materials

Fueling or maintenance of construction vehicles would occur in the project area during construction, excluding within the river channel (top of bank to top of bank). The risk of accidental spills or releases of fuels, oils, or other potentially toxic materials would exist, which could pose a threat to water quality if contaminants were to enter the Russian River or local groundwater. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled.

All spills, including on the roadway and bridge deck, would trigger immediate response actions to report, contain, and mitigate the incident. The California Office of Emergency Services has developed a Hazardous Materials Incident Contingency Plan, which provides a program for response to spills involving hazardous materials. The plan designates a chain of command for notification, evacuation, response, and cleanup of spills. Caltrans also has spill contingency procedures and response crews. A project-specific spill prevention and response plan would be incorporated into the project SWPPP as required by the Caltrans Statewide Permit.

2.2.2.4 CEQA Considerations

Adherence to the Caltrans Statewide Permit and any other permits that would be required for this project in conjunction with implementation of a SWPPP and BMPs would reduce potential water quality impacts to less-than-significant levels.

2.2.2.5 Avoidance and Minimization Measures

Soil Disturbing Activities During Construction

Because this project will involve a soil disturbance of approximately 2 ha (4.9 acres), Caltrans shall obtain coverge under the Caltrans Statewide Permit including the preparation of a SWPPP to protect the quality of the receiving waters and address the temporary water quality impacts resulting from the construction activities associated with

this project. Filing of a Notice of Intent (NOI) is not required, as this has been replaced by filing Notification of Construction (NOC) under the Caltrans Statewide Permit. The SWPPP shall contain erosion control measures including an effective combination of soil stabilization and sediment control practices which may include BMPs such as mulching, stabilized construction entrance/exit, and fiber rolls. BMPs including sediment and waste management and disposal control measures would also be required and described in the SWPPP. Additional water quality, erosion, and hazardous waste provisions, to avoid contaminating waterways or groundwater, may also be required during construction as noted in the SWPPP or in Caltrans Standard Specifications and Standard Special Provisions for this project.

As described in Section 1, a temporary water crossing may be built over the diverted stream channel consisting of k-rail, fill for stream diversion and a work pad, and rail flatcars to span the channel. To avoid water quality impacts, the crossing would only be in place during the dry months (typically May 1 to October 15) and fill would be removed (and the stream bed recontoured) before the next wet season begins. Only clean fill material would be used in the construction of the stream diversion and temporary crossing.

Spills of Hazardous Materials

Spill prevention and control measure BMPs would be incorporated within the SWPPP. The Caltrans *Construction Site Best Management Practices Manual* (Caltrans 2003b) contains BMP WM-4, "Spill Prevention and Control." Within BMP WM-4, example standards and specifications for spill prevention and control are listed including: employee education, proper storage and good housekeeping practices, and covering and protecting spills from storm water run-on during rainfall to the extent that it does not compromise cleanup activities. Procedures and practices presented in BMP WM-4 are general and the contractor would identify appropriate practices for the specific materials used or stored on-site.

Permanent Water Quality Control Measures

The Caltrans Statewide Permit stipulates that permanent measures to control pollutant discharges must be considered and implemented for all new or reconstructed facilities within an urban municipal separate storm sewer system (MS4). Permanent treatment BMPs are not required for the proposed project because the project is not within the limits of an urban MS4.

2.2.3 Geology/Soils/Seismic/Topography

2.2.3.1 Regulatory Setting

The proposed project would be required to comply with the following state regulations related to geology, soils, seismicity, and topography:

- The Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code Section 2621 et seq.) was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The act restricts development on surface traces of known active faults and establishes Special Studies Zones for known active faults.
- The Seismic Hazards Mapping Act of 1990 (Public Resources Code Section 2690 et seq.) addresses nonsurface fault rupture earthquake hazards, including liquefaction and seismically induced landslides.
- The California Building Code (CBC) contains the minimum standards for design and construction in California. Local standards other than the CBC may be adopted if those standards are stricter. The CBC involves the standards associated with seismic engineering detailed in the Uniform Building Code (UBC) of 1997.

In addition, Caltrans has established minimum seismic design criteria for "important" and "ordinary" bridges. Important bridges are those that are one or more of the following:

- Required to provide post-earthquake safety, such as emergency access
- If closed, would create major economic impacts due to time for restoration
- Formally designated as critical by a local emergency plan

All other bridges are designated as ordinary. Caltrans Seismic Design Criteria (Caltrans 2004) apply to ordinary bridges.

2.2.3.2 Affected Environment

Topography

The site of the proposed project is within the relatively flat northwest/southeast-trending Ukiah Valley. The valley is bordered on both sides by steep ridges. The western ridge has average elevations of 305 m to 520 m (1,000 ft to 1,700 ft), and the eastern ridge elevations average 425 m to 490 m (1,400 ft to 1,600 ft) (LCA 2005). The valley is likely a relatively recent pull-apart basin due to faulting and uplift of the rides and also due to subsidence (LCA 2005). The elevation of the valley floor is approximately 200 m (650 ft) near the north end of Lake Mendocino to the north of Ukiah and approximately 180 m (590 ft) near El Robles Ranch to the south. This is a 27 m (90 ft) drop over approximately

18 km (11 mi) (LCA 2005). Therefore, in the region of the proposed project, the average grade of the valley is less than 0.2 percent. Within the project area, the valley floor elevation is approximately 177 m to 244 m (580 ft to 800 ft) and the elevation of the Russian River is approximately 175 m (575 ft).

Geology

The project area is located on Quaternary alluvium, which consists of unconsolidated and semi-consolidated lake, playa, and terrace deposits (CDMG 1977). These deposits continue to the north and south of the project site. Several kilometers to the east of the project site are Quaternary deposits of loosely consolidated Pliocene and/or Pleistocene sandstone, shale, and gravel. Several kilometers to the west are Tertiary to Cretaceous sandstone, shale, and conglomerates, which are generally considered part of the Franciscan complex. The project site is underlain at depth by Franciscan complex Cretaceous and Jurassic sandstone, shale, chert, limestone, and conglomerate.

Within 0.4 km (0.25 mi) of the proposed project, instream and terrace sources of aggregate are currently being mined from within the Russian River and from its banks by the Granite Construction Company's Talmage Ready Mix and Landscaping facility (LCA 2005).

Soils

The predominant soil types in the project area are Xerofluvents (0–2 percent slopes), Xerofluvents-Riverwash complex (0–2 percent slopes), Russian loam (0–2 percent slopes), and Cole loam (0-2 percent slopes) (USDA 1991). The active river channel and the adjacent floodplains consist of Xerofluvents and Xerofluvents-Riverwash complex. Xerofluvents are typically composed of a surface layer of gravelly sandy loam underlaid with very gravelly coarse sands. Riverwash is composed of stratified layers of water-deposited sand, gravel, and cobbles. Russian loam is found on the floodplain and low stream terraces and is composed of several layers of dark loam. Permeability of these soils is moderate to rapid, and erosion potential is slight except along steams where severe streambank erosion may occur during high-intensity storms. Cole loam is found on alluvial plains and fans at the edges of the project area. It is derived from sedimentary rock. Permeability of this soil is slow (USDA 1991).

Seismicity

The project area lies in one of the most active seismic regions in the world, highlighted by the number of large, damaging earthquakes that have occurred in the past. The region is located on the boundary between the North American and Pacific tectonic plates. The

Pacific plate is moving northwest relative to North America across a plate boundary that is oriented in a north-northwest direction and is approximately 97 km (60 mi) wide. This zone encompasses all of the major faults in Northern California, including the San Andreas fault system. In Northern California, the San Andreas fault system includes the San Andreas fault, the Maacama-Brush fault, and the Bartlett Springs fault.

The nearest known active fault to the project site is the Maacama-Brush fault, which runs through the Ukiah Valley. The fault has been mapped from Hopland to Laytonville and trends approximately parallel to US 101. The Maacama-Brush fault is approximately 1.8 km (1.1 mi) east-northeast of the project site at its closest point (CDMG 1982).

The maximum credible earthquake for the Maacama-Brush Fault has an estimated moment magnitude (M) of 7.3 (LCA 2005). The maximum credible earthquake for the fault is 7.25+/-0.25 magnitude. Peak ground acceleration is predicted at 70 percent of the acceleration of gravity (g) for the proposed project location (CGS 2006). The project site is not within the Alquist-Priolo Special Studies Zone for the fault.

According to the Mendocino County General Plan, the project site is located within Geotechnical Hazard Zone II – the Maacama Hazard Zone (Mendocino County 1991). The zone has Medium Hazard Potential related to ground shaking and surface faulting. Landslide Hazard Potential is Medium to High depending on the ground slope. Potential Hazard for liquefaction is Low to Medium.

The San Andreas fault is located just offshore in northern Mendocino County and onshore in the southern part of the county. At its closest point, the fault is approximately 56 km (35 mi) southwest of the project site (USGS 2006a). The north coast section of the San Andreas fault is predicted to have a 10 percent chance of generating a magnitude 6.7 or greater earthquake between 2000 and 2030 (WGCEP 1999).

The Bartlett Springs fault is located approximately 48 km (30 mi) northeast of the project site (USGS 2006a). The fault trends northwest/southeast. It is an active fault with a slip rate of 6 millimeters per year (USGS 2006b). Peak ground acceleration for the fault is predicted as 70 percent of the acceleration of gravity (g) (CGS 2006).

2.2.3.3 Impacts

As described above, the project site is located within the Maacama Hazard Zone and is subject to potential hazards related to ground shaking and surface rupture, landslide, and liquefaction.

The project would require grading of soil to adhere to design standards. Erosion control methods would be used to avoid additional loss of topsoil as described in Section 2.2.1. The project design would adhere to the Uniform Building Code (UBC), CBC, and Caltrans Seismic Design standards (Caltrans 2004). Therefore, geologic, seismic, or topographic impacts are not anticipated as a result of the project.

2.2.3.4 CEQA Considerations

The project would have less-than-significant geological and seismic impacts pursuant to CEQA.

2.2.4 Hazardous Waste/Materials

2.2.4.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by multiple state and federal laws. These include not only specific statutes governing hazardous waste but also a variety of laws regulating air and water quality, human health, and land use.

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

- Community Environmental Response Facilitation Act of 1992
- CWA
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the RCRA and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

2.2.4.2 Affected Environment

Expansion joint filler material on the existing bridge was tested in 2000. No asbestos was detected in the expansion joint material, and no asbestos-containing material was specified in the circa-1953 bridge construction plans (Geocon 2000). It is anticipated that this project would encounter no asbestos-containing material. The bridge does contain lead-based paint.

Lead can also be a common contaminant in soils near roadways. The source of lead near roadways stems from the historic use of leaded gasoline. Lead in automotive exhaust can be deposited aerially in the soils adjacent to the roadway. Twelve soil samples were collected from six locations around the bridge and tested for aerially deposited lead. Total lead concentrations in the soils ranged from 5 to 49 milligrams per kilogram. (Geocon 2000). None of the samples exceeded regulatory criteria and based on the testing, soils excavated during project construction should be suitable for reuse on the roadway shoulders with no restrictions. None of these soils would be used below the ordinary high water mark of the Russian River, however.

A yellow thermoplastic stripe would be removed from the pavement surface before construction. This stripe may contain heavy metals such as lead and chromium, which may exceed hazardous waste thresholds established by the California Code of Regulations (CCR) and may produce toxic fumes when heated.

2.2.4.3 Impacts

Hazardous materials such as lead-based paint may be encountered during demolition of the bridge. If not properly handled, workers and the public could be exposed to these materials.

Hazardous materials such as construction equipment fuels and lubricants would be used during construction. The storage and handling of these materials must be managed in accordance with applicable laws and regulations including the Fire Code, Hazardous

Materials Business Plan requirements, and oil spill regulations that would minimize the risk from using hazardous materials during the project construction phase.

2.2.4.4 CEQA Considerations

The proposed project would have less-than-significant impacts pursuant to CEQA.

2.2.4.5 Avoidance and Minimization Measures

With the following avoidance and minimization measures in place, impacts due to hazardous materials are expected to be less than significant.

- The Contractor who performs the construction activities shall be notified that any construction activities that will disturb the lead-based paint and may expose workers to lead would require worker protection in accordance with 8 CCR 1532.1 (Lead in Construction).
- Though no asbestos was discovered by the Initial Site Assessment and the Preliminary Site Investigation, Caltrans and its contractor are required by the U.S. Environmental Protection Agency to notify the appropriate Air Quality Management District of the proposed bridge demolition.
- The Contractor shall prepare a health and safety plan prior to beginning the construction. The health and safety plan should specifically address the contaminants of concern (lead and the thermoplastic yellow striping), routes of exposure, monitoring techniques, maximum exposure levels, and other applicable regulatory criteria.
- The soil under the bridge shall be tested after project construction to confirm that there was no release of hazardous materials during construction.
- Hazardous materials used during construction would be handled according to applicable laws and regulations and in a manner that minimizes risk. Examples of these requirements include developing project-specific hazardous materials management and spill control plans, storing incompatible hazardous materials separately, using secondary containment for hazardous materials storage, requiring the contractor to use trained personnel for hazardous materials handling, keeping spill cleanup kits available on-site, and designating appropriate sites within the construction area as refueling stations for construction vehicles.

A project-specific spill prevention and response plan would be incorporated into the project SWPPP as required by the Caltrans statewide NPDES permit (see Section 2.2.2). The Caltrans *Construction Site Best Management Practices Manual* (Caltrans 2003b)

contains BMP WM-4, "Spill Prevention and Control." BMP WM-4 lists example standards and specifications for spill prevention and control including employee education, proper storage and good housekeeping practices, and covering and protecting spills from storm water run-on during rainfall to avoid compromising cleanup activities. Procedures and practices presented in BMP WM-4 are general, and the Contractor would identify appropriate practices for the specific materials used or stored on-site.

2.2.5 Air Quality

2.2.5.1 Regulatory Setting

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter 2.5 and 10 microns in diameter ($PM_{2.5}$ and PM_{10}), lead (Pb), and sulfur dioxide (SO_2).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place first at the regional level and second at the project level. The proposed project must conform at both levels to be approved.

Regional air quality conformity in California is evaluated based on whether a region has attained the standards set for CO, NO_2, O_3, and PM. The USEPA classifies air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria pollutant, based on whether the NAAQS have been achieved. An area is designated unclassified when insufficient air quality data are available on which to base an attainment or nonattainment designation. California is in attainment for the other criteria pollutants listed above. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of time, usually at least 20 years. Based on the projects included in the RTP, an air quality model is run to determine whether the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Mendocino Council of Governments, and the appropriate federal agencies, such as the FHWA, make the determination that the RTP is in

conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project level also requires "hot spot" analysis if an area is designated as nonattainment or maintenance for CO and/or PM. A region is in nonattainment if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called maintenance areas. Hot spot analysis is essentially the same, for technical purposes, as CO or PM analysis performed for NEPA and CEQA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in nonattainment areas, the project must not cause any increase in the number and severity of violations. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Under California law, air pollution control districts and air quality management districts have full regulatory authority for achieving state standards. In Mendocino County, the Mendocino County Air Quality Management District (MCAQMD) holds that authority. Under federal law, the Mendocino Council of Governments has been designated as the responsible air quality planning agency.

2.2.5.2 Affected Environment

The project is located in Mendocino County, which is part of the North Coast Air Basin. Air quality in Mendocino County is a function of the criteria pollutants that are emitted locally, the existing regional ambient air quality, and meteorological and topographic factors. In 2006 Mendocino County and the rest of the North Coast Air Basin are designated as attainment areas for all transportation related criteria pollutants under NAAQS: CO, O_3, $PM_{2.5,}$ and PM_{10}. However, in 2004 Mendocino County and the North Coast Air Basin were designated as attainment areas for both CO and O_3 and as non-attainment areas for PM_{10} under the California Ambient Air Quality Standards (CARB 2006). Although PM_{10} levels have been reduced over the past 20 years, the MCAQMD periodically exceeds the state standard. Typical sources of PM_{10} in the district are paved and unpaved road dust, residential fuel combustion (including wood-burning stoves), wildfires, and, to a lesser extent,construction activities (Mendocino County 2005).

2.2.5.3 Impacts

Permanent Impacts

This project is exempt from all air quality conformity analysis requirements per Table 2 of 40 CFR 93.126, subsection Safety ("Widening narrow pavements or reconstructing bridges (no additional travel lanes)"); therefore, no further analysis is required.

In addition, based on Section 4.7.1 of the *Caltrans Transportation Project-Level Carbon Monoxide Protocol User Workbook* (UC Davis 1998), projects that meet the following criteria are not likely to worsen local CO emissions:

(a) does not significantly increase vehicles operating in cold start mode

(b) does not significantly increase traffic volumes

(c) does not worsen traffic flow

The proposed project has met these criteria. Therefore, no local (project-level) CO impacts are anticipated.

Construction Impacts

The proposed project may result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Fugitive dust, sometimes referred to as windblown dust or PM_{10}, would be the primary short-term construction impact and may be generated during excavation, grading, and hauling activities. However, both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature. Caltrans Standard Specifications, a required part of all construction contracts, should effectively reduce and control emission impacts during construction. The provisions of Section 7-1.01F, Air Pollution Control, and Section 10, Dust Control, require the Contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.

2.2.5.4 CEQA Considerations

With the implementation of avoidance and minimization measures, less-than-significant impacts to air quality pursuant to CEQA are anticipated.

2.2.5.5 Avoidance and Minimization Measures

- Caltrans Standard Specifications contain Section 7-1.01F, Air Pollution Control, and Section 10, Dust Control. These specifications require the Contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district. These

specifications, which are included in all construction contracts, should aid in reducing construction-related air quality impacts.

- Naturally occurring asbestos is known to exist in serpentine, a greenish greasy-looking rock, found within ultramafic rock. Based on the California Geologic Survey and National Resource Conservation Service soils map, ultramafic soils are found in some parts of Mendocino County, but none are found in the project area. If naturally occurring asbestos is found during construction, MCAQMD Regulation 3.6 of the must be adhered to when handling this material.

2.2.6 Noise

2.2.6.1 Regulatory Setting

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment.

2.2.6.2 Affected Environment

The proposed project is not interpreted as a Type I project as defined in 23 CFR Section 77, Procedures for Abatement of Highway Traffic Noise, and Caltrans' noise analysis policy described in the *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects* (Caltrans 1998). No further analysis is required.

2.2.6.3 Construction Impacts

Noise would be generated from the contractor's equipment and vehicles. Caltrans Standard Specifications would reduce the amount of construction noise. No sensitive receptors such as schools are located near the project. The nearest residence is approximately 275 m (900 ft) from the eastern end of the project.

2.2.6.4 CEQA Considerations

Less-than-significant impacts to noise pursuant to CEQA are anticipated.

2.2.6.5 Avoidance and Minimization Measures

Caltrans Standard Specifications contain Section 7-1.01I, Sound Control Requirements. These specifications require the Contractor to comply with all local sound control and noise level rules, regulations, and ordinances that apply to any work performed pursuant to the contract. Each internal combustion engine used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated at the project site without

the muffler. These specifications would be included in all construction contracts for the project.

2.3 Biological Environment

2.3.1 General Biological Setting

The biological study area (BSA) encompasses the project area, located in Mendocino County where SR 222 crosses the Russian River, one-half mile east of the City of Ukiah limits and just west of the Town of Talmage (see Figure 6, Section 2.3.2). A list of species and habitats potentially occurring within the BSA was developed based on information compiled from the U.S. Fish and Wildlife Service (USFWS) species list, the CDFG's Natural Diversity Data Base (CNDDB), the California Native Plant Society (CNPS) electronic inventory, current literature, and consultation with resource agency staff (Appendix A). The *Ukiah, Elledge Peak, Purdy Gardens, Cow Mountain, Orrs Springs, Laughlin Range, Potter Valley, Redwood Valley, and Boonville* 7.5-minute U.S. Geological Survey (USGS) quadrangles of the CNDDB were searched for information on sensitive plant and animal species reported from the general vicinity of the proposed project. Federal, state, and consultant biologists conducted surveys between February 2003 and February 2006 to describe vegetation communities within the BSA, to identify plants and animals found on-site, to survey the area for special-status plant and animal species and their habitats, and to determine if the site supports any regulated habitats or resources needing agency permits or coordination.

The prominent feature of the project site is the channel of the Russian River and its associated riparian corridor. The plant community surrounding the river can be classified as Valley Foothill Riparian; dominant species include cottonwood (*Populus fremontii*), box elder (*Acer negundo*), white alder (*Alnus rhombifolia*), and willow (*Salix* spp.). This riparian corridor includes some large areas of nonnative species such as Himalayan blackberry (*Rubus discolor*) and wild radish (*Rhaphanus sativus*). The project site also includes one large area of the very invasive giant reed (*Arundo donax*) on the south side of Pier 6.

Riparian communities can provide habitat for a variety of aquatic and terrestrial wildlife. Due to its proximity to traffic and development, mostly common bird and mammal species use the project site. These include great blue herons (*Ardea herodias*), common merganser (*Mergus merganser*), and white-crowned sparrows (*Zonotrichia leucophrys*). The bridge structure itself provides nesting habitat for swallows and a night roost for bats.

The special-status species in the region that were evaluated for the proposed project are listed in Appendix A. Through biological surveys and literature review, most of the species presented in Appendix A were determined not to be present in the BSA due to lack of suitable habitat. More detail can be found in the Natural Environment Study developed for this project (Caltrans 2006a).

At the project site, the Russian River channel is an open waterway composed primarily of gravel. The riverbanks are moderately sloped and eroded in some sections. River flows are greatest during the rainy season (November through March). Runoff from irrigated farmlands and agricultural diversions for frost protection and irrigation may affect flow patterns throughout the year. As the water level lowers, large gravel bars become exposed. The low-flow course of the river may be influenced by bank erosion, scouring at the bridge piers, or upstream gravel mining. In the dry season of 2003, the active channel sustained water flow between Piers 5 and 6 (see Figure 5).

Drainage ditches lead to the river on the northwestern, southwestern, and southeastern sides of the bridge. Some riparian vegetation is growing in the northwestern and southeastern channels. Mostly ruderal and a few common wetland species are growing in the southwestern channel.

2.3.2 Wetlands and Other Waters

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 USC 1344) is the primary law regulating wetlands and waters. The CWA 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 CWA, 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 CWA.

Section 404 of the CWA 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 USEPA.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this order states that a federal agency, such as the FHWA, 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 CDFG and the RWQCB. In certain circumstances, the California Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600–1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify 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 RWQCBs 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 CWA. See Section 2.2.2 for additional details.

2.3.2.2 Affected Environment

Wetlands consisting of riparian scrub/woodland occur immediately adjacent to the segment of the Russian River that runs north-south through the BSA (Figure 6). The active channel in the BSA is delineated as a non-wetland waters of the United States. It ranges from approximately 23 to 26 meters (75 to 85 feet) wide. The jurisdictional boundaries of the riparian scrub/woodland were delineated from the edge of the inundated river channel to the OHWM elevation on the banks of the river. The OHWM elevation was determined based upon the height of debris on vegetation and from soil erosion in the side of the bank. The areas in the channel that are below OHWM elevation primarily support riparian scrub/woodland but also include several alluvial plains that are non-wetland waters of the United States (Figure 6).

The riparian scrub/woodland in the BSA primarily consist of dense shrubs and trees that are dominated by Fremont cottonwoods (*Populus fremontii*) and willow species (*Salix*

Figure 6 Potential Waters of the U.S. in the Environmental Study Limit

spp.). This riparian corridor also includes some large areas of non-native species such as Himalayan blackberry (*Rubus discolor*). The vegetation associations in this area have been classified as Fremont cottonwood series (Sawyer and Keeler-Wolf 1995). The non-jurisdictional areas above the OHWM elevation also include riparian scrub/woodlands. Riparian scrub/woodlands include vegetation similar to the jurisdictional riparian scrub/woodlands below OHWM elevation. However, the riparian areas above the OHWM elevation lack the wetland hydrology necessary to be considered jurisdictional.

The non-wetland waters of the United States include gravel bars within the active channel and below the OHWM (Figure 6). These alluvial deposits primarily consist of gravel and cobbles and are sparsely vegetated. Regular scouring of these alluvial areas prevent the establishment of wetland vegetation, although some of these areas would meet the hydrology and soil wetland parameters.

2.3.2.3 Impacts

Two types of potentially jurisdictional wetlands and waters of the United States were identified in the BSA during the wetland field investigation: wetland riparian scrub and non-wetland waters of the United States. The proposed project would permanently affect 0.0009 hectares (0.002 acres) acres of non-wetland waters of the U.S. It would also temporarily affect 0.30 ha (0.74 acres) of wetland riparian scrub and 0.229 ha (0.568) of non-wetland waters of the U.S.

2.3.2.4 CEQA Considerations

Less-than-significant impacts to wetlands and other waters pursuant to CEQA are anticipated, with application of the following avoidance, minimization, and mitigation measures.

2.3.2.5 Mitigation, Avoidance, and Minimization Measures

Temporary and permanent erosion control measures would be implemented during construction in accordance with an approved storm water pollution prevention plan. All disturbed areas would be revegetated after completion of the project.

Upon completion of the project, all areas that have been temporarily impacted by the project will be restored to approximate original site conditions. All vegetation removal will be minimized to the extent feasible for performing the proposed demolition and construction. All large trees removed for access will be used as cover along the banks of the river. Fallen trees will be anchored to the bank of the river outside, but in close proximity to, the work area in order to replace some portion of the cover lost by removing the riparian area. Once the bridge has been replaced, a revegetation plan will be

implemented. This plan would include removal of non-native vegetation that may have reestablished, replanting of native species present at the site, and success criteria by species. The plan should be implemented and monitored for success for a 5-year period. Success criteria should include goals for both plant survivorship and vigor. Riparian vegetation and wetlands shall be restored on-site at a 1:1 ratio.

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

The USFWS and 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, which are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA; 16 USC 1531 et seq. and 50 CFR Part 402) and/or the California Endangered Species Act (CESA; California Fish and Game Code Section 2050 et seq.).

Caltrans projects are also subject to the Native Plant Protection Act (California Fish and Game Code Sections 1900–1913) and CEQA (California Public Resources Code Sections 21000–21177).

This section also discusses CDFG fully protected species and species of special concern, USFWS candidate species, and nonlisted CNPS rare and endangered plants.

2.3.3.2 Affected Species

The prominent feature of the project site is the channel of the Russian River and the associated riparian corridor. The plant communities surrounding the river can be classified as Fremont cottonwood series (Sawyer and Keeler-Wolf 1995). Dominant species within the riparian community include cottonwood, and willow. This riparian corridor includes some large areas of nonnative species such as Himalayan blackberry. The project site also includes a large area of invasive giant reed on the south side of Pier 6. The BSA has no special-status plant species or habitat suitable to support special-status plant species.

2.3.3.3 Impacts

The project would not impact any special-status plant species or habitat that could support special-status plant species. However, the project would remove approximately 30.48 linear m (100 linear ft) of riparian vegetation from each of the four quadrants

adjacent to the existing bridge (approximately 0.57 ha [1.4 acres] total) for construction equipment access. Figure 4 shows the area of anticipated vegetation disturbance. This would be a long-term impact as the period of time required to reestablish cover equal to what was present before the proposed activity would likely be 10 years or more.

2.3.3.4 Mitigation, Avoidance, and Minimization

Mitigation for riparian habitat disturbance is the same as that described for wetlands. All vegetation removal for the proposed demolition and construction would be minimized to the extent feasible. On-site riparian replacement planting as well as off-site riparian mitigation would be implemented to offset impacts to riparian vegetation. Mitigation ratios will be negotiated with appropriate governing agencies, and a detailed revegetation plan will be developed. All large trees removed for construction access would be used as cover along the banks of the river. Fallen trees would be anchored to the bank of the river outside of, but in close proximity to, the work area in order to replace some portion of the lost riparian cover. Once bridge construction is complete, a revegetation plan would be implemented. This plan would include removal of nonnative vegetation that may have reestablished, replanting of native species present at the site, and success criteria by species. The plan would be implemented and monitored for success for a 5-year period. Success criteria would include goals for both plant survivorship and vigor.

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Overview

Several state and federal laws regulate impacts to wildlife. The USFWS, NOAA Fisheries, and CDFG are responsible for implementing these laws.

Federal laws and regulations pertaining to wildlife include the following:

- NEPA
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- CEQA
- California Fish and Game Code Sections 1601–1603
- California Fish and Game Code Sections 4150 and 4152

2.3.4.2 Affected Special-Status Species

Several special-status species were identified as having the potential to occur within the BSA. However, after surveys were conducted, it was determined that many of the species had low or no suitable habitat present in the BSA (Appendix A). The following special-status species have a moderate to high potential to occur in the BSA based on the suitability of habitat present.

Ringtail (Bassariscus astutus)

The ringtail was given full protection under the California Fish and Game Code in January 1968. The species has a range throughout California, particularly in the Coast and western Sierra Nevada ranges (Belluomini 1980). Ringtails inhabit dens in rock crevices, boulder piles, and underground and tree cavities. Suitable habitat includes chaparral, rocky hillsides, and riparian areas. There is a high potential for the species to occur because suitable habitat exists within the riparian zone of the BSA.

Osprey (Pandion haliaetus)

The osprey was categorized as a species of special concern by the CDFG in 1978. In California, the species' breeding grounds are found in the redwood coasts of California. Ospreys build their nests atop trees, cliffs and other promontories, including artificial sites such as utility poles. Their habitat includes boreal forests, temperate coasts and lakes, subtropical coasts, and desert salt-flat lagoons near supplies of fish (Poole et al. 2002). There is a moderate potential for the species to occur because suitable habitat exists in the BSA. Ospreys have been observed nesting about seven miles to the north and ten miles south of the project on the Russian River riparian corridor (CNDDB 2005); however, the species was not observed at the site during surveys.

Foothill Yellow-legged Frog (Rana boylii)

The foothill yellow-legged frog was listed as a species of special concern by the CDFG in 1994. Its range includes the coastal mountains of California, including the Klamath, Cascade, North and South Coast, Transverse, and Sierra Nevada ranges. The frog's habitat includes streams and rivers in woodland, chaparral, and forest areas. Females deposit their eggs on the downstream side of stones and boulders where water flow is minimal (Jennings and Hayes 1994). There is a high potential for the species to occur because suitable habitat exists in the BSA, and occurrences were reported from 1.6 km (1 mi) upstream of the project site.

Northwestern Pond Turtle (Clemmys marmorata marmorata)

The northwestern pond turtle is a subspecies of the western pond turtle and has been listed as a species of special concern with CDFG since 1994. The western pond turtle's range exists mostly west of the Cascade-Sierra mountain range from sea level to 2,040 m (6,696 ft), with most found below 1,520 m (4,980 ft) (Stebbins 2003). Their habitat requires slow-moving water with muddy or rocky bottoms, aquatic vegetation, and aerial and aquatic basking sites. There is a high potential for the species to occur because suitable habitat exists in the BSA, and occurrences were reported upstream and downstream from the project site.

2.3.4.3 Impacts

Ringtail

This species would not be affected by the proposed project with the implementation of the proposed avoidance and minimization measures.

Osprey and Other Migratory Birds

The project may result in take of migratory birds. Although riparian vegetation would be cleared in the immediate work area, riparian habitat adjacent to the work area would remain and may be utilized during the construction period. Pile driving noise and other construction disturbances such as construction vehicle traffic have the potential to cause nesting birds, including osprey (if they happen to be present during construction) to leave their nests for long periods of time. This can cause nesting failure and would be considered take under the Migratory Bird Treaty Act.

Foothill Yellow-legged Frog

This species would not be affected by the proposed project with the implementation of the proposed avoidance and minimization measures.

Northwestern Pond Turtle

This species would not be affected by the proposed project with the implementation of the proposed avoidance and minimization measures.

2.3.4.4 CEQA Considerations

The proposed project would result in less-than-significant impacts to special status species with the implementation of the following avoidance, minimization, and mitigation measures.

2.3.4.5 Avoidance, Minimization, and Mitigation Measures

Ringtail

As a fully protected species, take of ringtails is prohibited. Take could occur if ringtails with young were using tree cavities in the vegetation removal zone. Newborn ringtails are not mature enough to escape their dens during vegetation removal activities. In order to minimize the effects of the project on any ringtails that may use the site, vegetation removal should occur outside of period when young are unable to leave the denning site (approximately April through June).

Osprey and Other Migratory Birds

The Russian River Bridge and adjacent riparian habitat have the potential to support nesting birds, and all native breeding birds are protected by the California State Fish and Game Code (section 3503) and the Migratory Bird Treaty Act (16 USC 703-711). Typically, nesting season is described as running from February 15 through August 31.

To avoid adverse effects to nesting birds in the immediate work area, the removal of riparian vegetation within this area would take place between August 31 and February 15, outside the nesting season.

The bridge provides habitat for nesting migratory birds, such as cliff swallows and black phoebes. Bridge demolition and construction activities would disrupt birds nesting on the bridge. To avoid this impact, exclusion techniques such as netting would be used to prevent birds from nesting on the bridge. Both the old and new portions of the bridge would need to be netted. Netting would be installed each construction year prior to February 15 and remain in place until July 1, after which time it is unlikely that nesting would be initiated.

Because construction activities would occur during the nesting season and migratory bird habitat would remain in areas adjacent the work area, a pre-construction survey of the adjacent work area would be conducted by a qualified biologist, approximately one week before construction is scheduled to begin. The biologist would determine the presence or absence of any active nests within the project site or within 61 meters (200 feet) of the project site. If no breeding or nesting activity is observed, construction activities may proceed and no take would occur. If breeding or nesting activity is detected, Caltrans will contact CDFG to determine the need for a no-disturbance buffer or the need to monitor the nest. Removal of any active nest trees is expressly prohibited.

Foothill Yellow-legged Frog

Preconstruction surveys would be performed by a qualified herpetologist no more than two weeks before each year's demolition and construction activities. Surveys would focus on locating foothill yellow-legged frogs in and within a half mile of the BSA. Surveys would also focus on locating frog egg masses within the BSA. If egg masses are located, CDFG would be contacted to determine what course of action to pursue. If animals are found within the BSA or within a half mile upstream or downstream of the BSA, a qualified herpetologist possessing a Scientific Collecting Permit with the appropriate conditions would monitor construction to ensure that frogs are not present in the construction area and that none wander into the BSA during construction. If any frogs are located within the BSA during construction they would be relocated to the nearest suitable habitat a safe distance from the construction activity.

Northwestern Pond Turtle

Preconstruction surveys would be performed by a qualified herpetologist no more than two weeks before each year's demolition and construction activities. Surveys would focus on locating northwestern pond turtles in and within a half mile of the BSA. If animals are found within the BSA or within a half-mile upstream or downstream of the BSA, a qualified herpetologist possessing a Scientific Collecting Permit with the appropriate conditions would monitor construction to ensure that turtles are not present in the construction area and that none wander into the BSA during construction. If any turtles are located within the BSA during construction, they would be relocated to the nearest suitable habitat a safe distance from the construction activity.

2.3.5 Threatened and Endangered Species

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the FESA (16 USC 1531 et seq.; 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 FHWA are required to consult with the USFWS and 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 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 CDFG is the agency responsible for implementing CESA. Section 2081 of the California Fish and Game Code prohibits the take of any species determined to be an endangered or 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.

2.3.5.2 Affected Species

Coho Salmon (Oncorhynchus kisutch)

On October 31, 1996, NOAA Fisheries listed the Central California Coast coho salmon evolutionarily significant unit (ESU) as threatened and subsequently listed as endangered species under the FESA on June 28, 2005 (NOAA Fisheries 1996; 2005a). On August 30, 2002, the California Fish and Game Commission designated coho salmon as an endangered species under CESA. Coho salmon are typically associated with small to medium-sized coastal streams characterized by heavily forested watersheds; perennially flowing reaches of cool, high-quality water; dense riparian canopy; deep pools with abundant overhead cover; instream cover consisting of large, stable woody debris and undercut banks; and gravel or cobble substrates. Adult salmon typically begin the freshwater migration from the ocean to their natal streams after heavy late-fall or winter rains and into March, and spawn shortly after returning to the spawning ground. Juvenile salmon continue to expand their territories throughout the year and begin to migrate downstream in March and April. Out-migration usually peaks around mid-May.

Although coho salmon were historically found throughout the Russian River watershed, they are no longer known to occur in the upper reaches of the Russian River. NOAA Fisheries, CDFG, and Sonoma County Water Agency staff all concurred that although historic records show the presence of coho salmon, the salmon do not currently inhabit the upper part of the Russian River. Recent information shows that the farthest north where coho are found is the Dry Creek watershed in Sonoma County near Healdsburg, 74 km (46 mi) from the project site.

On May 5, 1999, critical habitat was designated to include all river reaches accessible to listed coho salmon from Punta Gorda in Northern California south to the Lorenzo River in Central California, including the project site. Adjacent riparian zones for the above drainages are included in the critical habitat designation. Essential habitat types for this species generally include juvenile rearing areas, juvenile migration corridors, areas for growth and development to adulthood, adult migration corridors, and spawning areas. Within these areas, essential features of the habitat include adequate substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, space, and safe passage (NOAA Fisheries 1999a).

Chinook Salmon (Oncorhynchus tshawytscha)

On September 16, 1999, NOAA Fisheries listed the California Coast chinook ESU as a threatened species under the FESA (NOAA Fisheries 1999b). On February 16, 2000, the California Fish and Game Commission designated this ESU as threatened under CESA. The chinook salmon ESU consists of coastal chinook salmon populations from Redwood Creek in Humboldt County south through the Russian River. Chinook salmon exhibit two main life history strategies: ocean-type fish and river-type fish. The chinook salmon in the Russian River are ocean-type fish, typically fall- or winter-run fish that spawn shortly after entering freshwater; their offspring emigrate shortly after emergence from the redd (gravel nest). Russian River chinook salmon usually enter the river from September to January and are considered a fall-run population. Most spawning occurs in November and December. Fry emergence begins in February and continues through March. Smolts typically out-migrate as sub-yearlings from February through June.

On September 2, 2005, NOAA Fisheries designated critical habitat for California Coast chinook salmon. Critical habitat encompasses coastal creeks, rivers, and their tributaries from Prairie Creek (Humboldt County), south through the Russian River, with several exclusions. The project area is designated critical habitat, as well as all of the river downstream and the western fork upstream. The lateral extent of the critical habitat designation includes “the width of the stream channel defined by the ordinary high water line as defined by the ACOE in 33 CFR 329.11” (NOAA Fisheries 2005b). Essential habitat types for this species can be generally described to include migration, holding, spawning, rearing, and refugia habitat. Within these areas, essential features of the habitat include adequate substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, space, and safe passage (NOAA Fisheries 2005b).

No surveys were conducted as chinook salmon are known to occur in the upper reaches of the Russian River. Cook (2003), in a 3-year study of redd distribution of chinook salmon on the Russian River, found redds directly under the bridge as well as immediately upstream and downstream of the bridge.

Chinook salmon spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs at depths greater than 24 cm (9.5 in). After emergence, chinook salmon fry seek out areas behind fallen trees, back eddies, undercut banks, and other areas of bank cover. Juveniles move away from stream margins and begin to use deeper-water areas with slightly faster water velocities, but continue to use available cover to minimize the risk of predation and reduce energy expenditure. Cover in the form of rocks, submerged aquatic vegetation, logs, riparian vegetation, and undercut banks provide food and shade and protect juveniles from predation.

Steelhead (Oncorhynchus mykis)

On August 18, 1997, NOAA Fisheries listed the Central California Coast steelhead ESU as a threatened species under the FESA (NOAA Fisheries 1997). The rule prohibiting the taking of steelhead was finalized on July 10, 2000 (NOAA Fisheries 2000). The steelhead ESU includes all naturally produced steelhead (and their progeny) in coastal California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento–San Joaquin River Basin. Only "winter" steelhead are found in the steelhead ESU. Steelhead begin returning to the Russian River in November, with the run continuing into April. Most spawning takes place from January through April.

On September 2, 2005, NOAA Fisheries designated critical habitat for Central California Coast steelhead. The Russian River hydrological unit in Mendocino and Sonoma Counties is the northern-most extent of the designation. With some exclusions, critical habitat extends southward along the coast to Aptos Creek in Santa Cruz County and includes a majority of the direct tributaries to the San Francisco and San Pablo Bays. The project area is designated critical habitat, as well as all of the river downstream and the western fork upstream. The lateral extent of the critical habitat designation includes "the width of the stream channel defined by the ordinary high water line as defined by the ACOE in 33 CFR 329.11" (NOAA Fisheries 2005b). Essential habitat types for this species can be generally described to include migration, holding, spawning, rearing, and refugia. Within these areas, essential features of the habitat include adequate substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, space, and safe passage (NOAA Fisheries 2005b).

No surveys were conducted as steelhead are known to occur in the upper reaches of the Russian River. Cook's (2003) distribution study of steelhead in late summer found that steelhead generally occupied riffle and cascade habitat. No steelhead were found at a survey site just upstream of the bridge. However, more than 100 juvenile steelhead were found less than 2 km (1.24 mi) downstream of the bridge. Smaller numbers were observed north of Ukiah, below Lake Mendocino.

Steelhead spawn in cool, clear streams with suitable water depth, gravel size, and current velocity, usually in tributaries where fish ascend as high as flows permit. However, steelhead are also known to spawn in the main river or in intermittent streams. Upon emerging from the gravel, fry rear in edgewater habitats and move gradually into pools and riffles as they grow larger. Cover is extremely important in determining distribution and abundance, with more cover leading to more fish. In winter, steelhead become inactive and hide in any available cover, including gravel or woody debris. Because rearing juvenile steelhead reside in freshwater all year, adequate flow and temperature are important to the population at all times.

2.3.5.3 Impacts

Potentially significant impacts would result from the removal of riparian vegetation, the construction of temporary work platforms, and the demolition and construction of the bridge. Potential adverse impacts include increased water turbidity and siltation; injury and mortality to salmonids and other wildlife due to falling debris or entrapment in cofferdams; degradation of spawning habitat; and barotrauma from pile driving activities. Potential beneficial impacts include decreased volume of pier obstructions and increased shading from the wider bridge.

2.3.5.4 CEQA Consideration

The project would have less-than-significant impacts pursuant to CEQA with implementation of the following avoidance, minimization, and mitigation measures.

2.3.5.5 Avoidance, Minimization, and Mitigation Measures

Table 2-2 lists potentially significant impacts to salmonids along with avoidance, minimization, and mitigation measures that will be implemented to eliminate or reduce those impacts to less-than-significant levels.

Table 2-2 Summary of Biological Resources Avoidance, Minimization, and Mitigation Measures

Activity	Potential Impacts to Salmonids	Direct (D)/ Indirect (I) Impact	Temporary (T) or Permanent (P) Impacts	Mitigation, Minimization and Avoidance Measures
Riparian Vegetation Removal	Increased predation due to temporary loss of riparian cover	D & I	T	Use downed trees as cover upstream and downstream of work area
				Replant and monitor plant re-establishment
	Increased erosion/water turbidity	I	T	Use erosion control and slope stabilization BMPs defined in site-specific SWPPP
Work Pad and Temporary Crossing Construction	Change in substrate composition decreasing gravel/cobble suitability for spawning	D	T	Remove all fill after each construction year and recontour with native material
	Compaction resulting in decrease of gravel/cobble suitability for spawning	D	P	Recontour riverbed at end of each work window while loosening gravel
	Increased water turbidity	D	T	Remove all fill after each construction year
	Increased siltation degrading spawning habitat	D	T	Remove all fill after each construction year
	Change in contour of river bottom increasing limited habitat types	D	P	None; beneficial impact
	Change in contour of river bottom decreasing limited habitat types	D	P	Photograph riverbed immediately prior to each year's in-channel construction. At end of each work year, return contour to condition existing prior to that year's construction activity
Deck Demolition	Falling debris from deck demolition resulting in injury/mortality of listed salmonids	D	T	Construction trestle to cover a portion of active channel. Various other methods (e.g., suspend box or fabric hammock under deck demolition area) to be used to keep debris out of active channel.
	Falling debris from deck fouling spawning gravels	D	T	
	Increased water turbidity	D	T	
Pile Driving	Barotrauma from underwater pressure wave	D	T	Dampening block to attenuate pressure wave
				Limit work window from June 15 to October 15
				Divert live-channel to dewater work area
Soil Removal	Increased water turbidity	D	T	Use BMPs to be defined in site-specific SWPPP
	Increased siltation degrading spawning habitat	D	T	

Table 2-2 Summary of Biological Resources Avoidance, Minimization, and Mitigation Measures

Activity	Potential Impacts to Salmonids	Direct (D)/ Indirect (I) Impact	Temporary (T) or Permanent (P) Impacts	Mitigation, Minimization and Avoidance Measures
On-site Soil Disposal	Increased water turbidity	D	T	Dispose of only clean gravel/cobble on-site
				Use BMPs defined in site-specific SWPPP
	Increased siltation degrading spawning habitat	D	T	Dispose of only clean gravel/cobble on-site.
	Change in substrate composition increasing gravel/cobble suitability for spawning	D	T	None; beneficial impact
	Change in substrate composition decreasing gravel/cobble suitability for spawning	D	T	Dispose of only clean gravel/cobble on-site.
	Change in contour of riverbed increases suitable habitat for listed salmonids	D	T	None; beneficial impact
	Change in contour of riverbed decreasing limited habitat types	D	T	At end of each work year, return contour to condition existing prior to that year's construction activity
Pour Concrete	Increase river pH locally, resulting in injury or mortality of listed salmonids	D	T	Use BMPs to be defined in site-specific SWPPP
	Increased water turbidity	D	T	Use BMPs defined in site-specific SWPPP
	Increased siltation degrading spawning habitat	D	T	Use BMPs defined in site-specific SWPPP
Construct Cofferdams	Barotrauma from underwater pressure wave	D	T	Dampening block to attenuate pressure wave
				Limit work window from June 15 to October 15
	Entrapment within cofferdam	D	T	Permitted biological monitor on-site to find and relocate any entrapped species
	Increased water turbidity	D	T	Use BMPs to be defined in site-specific SWPPP
				Use of infiltration basin to allow sediment to settle out of water
Construct Cofferdams (cont.)	Increased siltation degrading spawning habitat	D	T	Use BMPs to be defined in site-specific SWPPP
				Use of infiltration basin to allow sediment to settle out of water

Table 2-2 Summary of Biological Resources Avoidance, Minimization, and Mitigation Measures

Activity	Potential Impacts to Salmonids	Direct (D)/ Indirect (I) Impact	Temporary (T) or Permanent (P) Impacts	Mitigation, Minimization and Avoidance Measures
Pier Demolition	Debris from pier demolition fouling spawning gravels	D	T	Remove all demolition debris
				Cover/fill area around removed piers to grade with clean gravels
	Increased water turbidity	D	T	Use BMPs defined in site-specific SWPPP
				Filter water in cofferdam through baker tank before returning to river
	Increased siltation degrading spawning habitat	D	T	Use BMPs defined in site-specific SWPPP
				Filter water in cofferdam through baker tank before returning to river
Bridge Replacement	Increased surface area of the new deck will result in increased shading of river, lowering temperatures	D & I	P	None; slight beneficial impact
	Decreased volume of pier obstructions in river channel, increasing available habitat	D	P	None; beneficial impact

2.3.6 Invasive Species

2.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999, directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.3.6.2 Affected Environment

Among the plant species observed in the BSA (see Appendix A) are several that are listed on the California state noxious weeds list, including yellow star thistle (*Centaurea solstitialis*), klamathweed (*Hypericum perforatum*), bindweed (*Convolvulus arvensis*), and perennial peppergrass (*Lepidium latifolium*) (FHWA 2006). Other invasive, nonnative species on-site are Himalayan blackberry and giant reed.

2.3.6.3 Impacts

If riparian areas disturbed as result of project construction were not restored, invasive plant species would likely become dominant in the disturbed areas. These species would not provide the same cover and wildlife habitat as the existing riparian vegetation, resulting in potential impacts to species that utilize these habitats.

2.3.6.4 CEQA Considerations

The project would have less-than-significant impacts pursuant to CEQA with implementation of the following avoidance, minimization, and mitigation measures.

2.3.6.5 Avoidance, Minimization, and Mitigation Measures

As directed in Executive Order 13112, Caltrans will implement standard weed control specifications for the construction period. The project biologist will work with Caltrans' landscape architects to develop and implement a revegetation plan. This plan will include removal of nonnative vegetation that may have re-established since the initial vegetation removal; replanting of native species originally present at the site; and application of species-specific success criteria, consistent with the 1988 Memorandum of Understanding between Caltrans and USFWS and the subsequent Planning Guidelines for Standard Approaches to Mitigation Site Monitoring and Maintenance (Caltrans and USFS 2006). The plan would be implemented and monitored for success for a 5-year period. Success criteria should include goals for both plant survivorship and vigor.

2.4 Cumulative Impacts

Cumulative effects include the effects of future state, local, or private actions that are reasonably certain to occur in the area of this project. Planners and permitting specialists were contacted at Caltrans, City of Ukiah Planning Department, Mendocino County Department of Planning and Building, and Mendocino County Department of Transportation to determine whether any new projects have been permitted in the vicinity of the Russian River.

The Redemeyer Road extension across the Russian River is a project identified in the *2001 Mendocino County Regional Transportation Plan Draft Program Environmental Impact Report* (MCG 2002) and the 2005 Mendocino County Regional Transportation Plan (MCG 2005). The project would complete a gap in a parallel route to US 101. The route would connect to Lake Mendocino Drive or North State Street on the north and to Old River Road on the south at the intersection with Talmage Road. This project would require a bridge across the Russian River and construction of a two-lane arterial with paved shoulders. The Redemeyer Road project would potentially have impacts similar to

the proposed project; however, environmental review and permitting have not been initiated, and construction timing is not known.

The Mendocino County Department of Planning and Building (Lynch 2006) indicated that three small subdivisions, a 6,500 m^2 (70,000 ft^2) retail center, and a 8.1 ha (20 acre) commercial development were planned but had not yet been permitted. All but one of these proposed projects, a small subdivision located 0.8 km (0.5 mile) from the river, are within 610 m (2,000 ft) of the Russian River.

The Mendocino County Department of Transportation (Kagyama 2005) stated that no projects were yet permitted, and the City of Ukiah Planning Department, contacted on November 29, 2005, did not have any projects planned that would affect the river.

Given that none of the above-mentioned projects have been issued permits, they cannot be described as reasonably certain to occur within the same time frame as the proposed project. There are no other projects in the vicinity, along the river, that would add to the impacts of the proposed project. Due to this, and the lack of long-term or permanent impacts of the proposed project, the proposed Russian River Bridge Project is expected to have less-than-significant cumulative impacts.

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Appendix A Regional Sensitive Species and Potential to Occur at the Project Site

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
MAMMALS							
Arborimus pomo	Red tree vole	None	SC	N/A	Occurs along the north Coast Ranges from Sonoma County to the Oregon border	Inhabits old-growth forest of Douglas-fir, redwood, or montane hardwood-conifer species	None; no suitable habitat in project area
Bassariscus astutus	Ringtail	None	FP	N/A	Throughout most of California, except the Modoc Plateau, Antelope Valley, and portions of the San Joaquin Valley	Chaparral, rocky hillsides, and riparian areas	High; suitable habitat present in the project area
Corynorhinus townsendii	Townsend's big-eared bat	None	SC	N/A	Throughout California	Roosts in caves, tunnels, mines and dark attics of abandoned buildings; very sensitive to disturbances and may abandon a roost after one onsite visit	Low; potential forager, no day roosting habitat in project area
Martes pennanti	Fisher	C	SC	N/A	Coastal mountains from Del Norte County to Sonoma Counties, east through the Cascades to Lassen County, and south in the Sierra Nevada to Kern County	Late successional coniferous forests and montane riparian habitats	None; no suitable habitat in project area
BIRDS							
Accipiter gentilis	Northern goshawk	None	SC	N/A	Mountains of California in the Sierra Nevada, south at least as far as Tulare Co. and in the Coast Range south as far as Mendocino Co.	Late seral stage forests including Douglas fir, various pines, and aspen	None; no suitable habitat in project area

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Agelaius tricolor	Tricolored blackbird	None	SC	N/A	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles and grain fields; habitat must be large enough to support 50 pairs. Requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant.	Low; limited nesting habitat in project site; none observed
Brachyramphus marmoratus	Marbled murrelet	T	E	N/A	Nesting sites from the Oregon border to Eureka and between Santa Cruz and Half Moon Bay; winters in nearshore and offshore waters along the entire California coastline	Old-growth forest required for nesting habitat, coastal marine feeding areas required during nesting season	None; no suitable habitat in project area
Chaetura vauxi	Vaux's swift	None	SC	N/A	Coastal belt from Del Norte County south to Santa Cruz County and in mid elevation forests of the Sierra Nevada and Cascade Range	Late stages of coniferous forests and mixed deciduous/conifer forests	None; no suitable habitat in project area
Empidonax trailii	Willow flycatcher	None	E	N/A	Sierra Nevada and along the Kern, Santa Margarita, San Luis Rey, and Santa Ynez rivers in Southern California	Riparian deciduous shrub and small tree riparian zones, generally dominated by willow	None; outside known range of species
Falco mexicanus	Prairie falcon	None	SC	N/A	Year-round resident in all of California except northwest corner and along immediate coast where it winters	Nests on cliffs or escarpments, usually overlooking dry, open terrain or uplands	None; no suitable habitat in project area

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Haliaeetus leucocephalus	Bald eagle	T	E/FP	N/A	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin; reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes of the Sierra Nevada south of Mono County; range expanding	In western North America, nests and roosts in coniferous forests within 1.6 km of a lake, reservoir, stream, or the ocean	Low; potential foraging habitat present, no suitable breeding habitat in project area
Numenius americanus	Long-billed curlew	None	SC	N/A	Nests in northeastern California in Modoc, Siskiyou, and Lassen Counties. Winters along the coast in interior valleys west of Sierra Nevada.	Nests in high-elevation grasslands adjacent to lakes or marshes. During migration and in winter; frequents coastal beaches and mudflats and interior grasslands and agricultural fields	None; no suitable habitat in project area
Pandion haliaetus	Osprey	None	SC	N/A	Breeds in northern California (Marin, Tehama, and Plumas Cos); winters along Pacific Coast from extreme s. Oregon south to s. California and locally inland east to western foothills of Cascades and western edge of southeast California deserts	Nests near ocean shore, bays, freshwater lakes, and large streams	Moderate; suitable habitat in project area, none observed during survey
Strix occidentalis caurina	Northern spotted owl	T	None	N/A	A permanent resident throughout its range; found in the north Coast, Klamath, and western Cascade Range from Del Norte County to Marin County	Late seral stage forests dominated by conifers with topped trees or oaks available for nesting crevices	None; no suitable habitat in project area
FISH							
Eucyclogobius newberryi	Tidewater goby	E	SC	N/A	Coastal lagoons from the Smith River (Del Norte Co.) south to Agua Hedionda Lagoon (San Diego County)	Shallow lagoons and lower stream reaches where the water is brackish to fresh and slow-moving or fairly still, but not stagnant	None; no suitable habitat in project area

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Oncorhyncus kisutch	Coho salmon - Central California Coast	E/CH	E	N/A	Punta Gorda in northern California south to and including the San Lorenzo River in Central California, tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River Basin	Cool freshwater streams and rivers, require sand and gravel for spawning	Low; no suitable habitat in the project area but historically known from the upper Russian River drainage
Oncorhynchus mykiss	Steelhead, Central California Coast	T/CH	None	N/A	Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin	Cool freshwater streams and rivers, require sand and gravel for spawning; winter steelhead	High; Known to occur in the Russian River
Oncorhynchus mykiss	Steelhead, Central Valley	T	None	N/A	Rivers of the Central Valley and their tributaries, excluding streams tributary to San Francisco and San Pablo Bays	Cool freshwater streams and rivers, require sand and gravel for spawning; winter steelhead	None; outside designated range of this ESU
Oncorhynchus tshawytscha	Chinook salmon, California Coastal	T/CH	T	N/A	From the Redwood Creek in Humboldt County to the Russian River in Sonoma County	Spawns in deeper water and larger gravel sizes (cantaloupe) than other salmon. Most spawning and rearing activity take place in the main stream channels above the saltwater limit or hundreds of upstream	High; Known to occur in the Russian River
AMPHIBIANS							
Rana aurora aurora	Northern red-legged frog	None	SC	N/A	From Sonoma Co. north to the Oregon border along from the coast to the east side of the Coast Range	Usually found near ponds or other permanent water bodies with extensive vegetation	None; outside known range

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Rana aurora draytonii	California red-legged frog	T	SC	N/A	Along the coast from Point Reyes National Seashore, Marin Co., and inland from the vicinity of Redding, Shasta Co., southward to northwestern Baja California, Mexico	Dense, shrubby or emergent riparian vegetation associated with deep (≥2 1/3 ft.) still or slow moving water; vegetated terrestrial areas within the riparian corridor and/or associated grassland containing small mammal burrows provide important shelter during winter.	None; known from coast of southern Mendocino Co.; nearest record is in Lake Co. near Clear Lake
Rana boylii	Foothill yellow-legged frog	None	SC	N/A	Occurs in the Klamath, Cascade, North Coast, South Coast, Transverse, and Sierra Nevada Ranges up to approximately 1,830 ft	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby.	High; suitable habitat in project area; known from 1 mile upstream
REPTILES							
Clemmys marmorata marmorata	Northwestern pond turtle	None	SC	N/A	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley to the western slope of Sierra Nevada	Woodlands, grasslands, and open forests; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	High; suitable habitat in project area; known locations up and downstream

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
INVERTEBRATES							
Branchinecta conservatio	Conservancy fairy shrimp	E	None	N/A	Vina Plains in Tehama Co., south of Chico in Butte Co., the Jepson Prairie Preserve and surrounding area in Solano Co., Sacramento National Wildlife Refuge in Glenn Co., Mapes Ranch west of Modesto, San Luis National Wildlife Refuge and the Haystack Mountain/Yosemite Lake area in Merced Co., and two locations on the Los Padres National Forest in Ventura Co.	Large, cool-water vernal pools with moderately turbid water	None; no suitable habitat in project area
Syncaris pacifica	California freshwater shrimp	E	E	N/A	Marin, Sonoma, and Napa Counties	Low elevation (<53 ft), low-gradient (<1%), perennial freshwater streams; tributary streams in the lower Russian River drainage, which flows westward into the Pacific Ocean	None; outside known range of the species
PLANTS							
Arctostaphylos canescens ssp. *Sonomensis*	Sonoma manzanita	None	None	1B	Lake and Mendocino Counties	Chaparral, lower montane coniferous forest; sometimes found on serpentine; 180-1700 m	None; no suitable habitat in project area
Arctostaphylos stanfordiana ssp. *Raichei*	Raiche's manzanita	None	None	1B	Lake and Mendocino Counties	Chaparral, lower montane coniferous forest	None; no suitable habitat in project area
Boschniakia hookeri	Small groundcone	None	None	2	Mendocino County	North coast coniferous forest	None; no suitable habitat in project area

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Carex comosa	Bristly sedge	None	None	2	Lake County	Marshes, swamps, lake margins	None; no suitable habitat in project area
Ceanothus confusus	Rincon Ridge ceanothus	None	None	1B	Lake and Mendocino Counties	Closed-cone coniferous forest, chaparral, cismontane woodland	None; no suitable habitat in project area
Didymodon norrisii	Norris's beard-moss	None	None	2	Lake and Mendocino Counties	Cismontane woodland, lower montane coniferous forest	None; no suitable habitat in project area
Fritillaria roderickii	Roderick's fritillary	None	E	1B	Mendocino County	Coastal bluff scrub, coastal prairie, valley and foothill grassland	None; no suitable habitat in project area; requires coastal climate
Hesperolinon adenophyllum	Glandular western flax	None	None	1B	Mendocino County	Chaparral, cismontane woodland, valley and foothill grassland; serpentine soils; 425-1315 m	None; outside elevation range of species
Horkelia bolanderi	Bolander's horkelia	None	None	1B	Mendocino County	Lower montane coniferous forest, chaparral , meadows, valley and foothill grassland; margins of vernal pools and meadows	None; no suitable habitat in project area
Lasthenia burkei	Burke's goldfields	E	E	1B	Lake, Mendocino and Sonoma counties	Meadows (mesic), vernal pools 15-580 m (49-1903 ft) elevation Blooms April- June	None; no suitable habitat in project area and none present during surveys

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Layia septentrionalis	Colusa layia	None	None	1B	Mendocino County	Chaparral, cismontane woodland, valley and foothill grassland; closely associated with serpentinite	None; no suitable habitat in project area
Limnanthes bakeri	Baker's meadowfoam	None	R	1B	Mendocino County	Meadows, marshes and swamps (freshwater), valley and foothill grassland (vernally mesic), vernal pools 175-910m in elevation	None; no suitable habitat in project area and none present during surveys
Malocothamnus mendocinensis	Mendocino bush mallow	None	None	1A	Mendocino County	Cismontane woodland	None; no suitable habitat in project area
Navarretia leucocephala ssp. *Bakeri*	Baker's navarretia	None	None	1B	Mendocino County	Cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane conifer forest; vernal pools and swales with adobe or alkaline soils	None; no suitable habitat in project area
Navarretia leucocephala ssp. *Pauciflora*	Few-flowered navarretia	E	T	1B	Inner north coast ranges (Napa and Lake Counties)	Vernal pools	None; no suitable habitat in project area and outside range of species
Plagiobothrys lithocaryus	Mayacamas popcorn-flower	None	None	1A	Mendocino County	Meadows, valley and foothill grassland, cismontane woodland, chaparral; moist sites 285-450 m	None; outside elevation range of species
Pleuropogon hooverianus	North Coast semaphore grass	None	T	1B	Mendocino County	Broadleafed upland forest, meadows, seeps, north coast coniferous forest	None; no suitable habitat in project area

Scientific Name	Common Name	Status			Distribution	Habitat Associations	Potential to Occur at Project Site
		Federal	State	CNPS			
Tracyina rostrata	Beaked tracyina	None	None	1B	Mendocino County	Cismontane woodland, valley and foothill grassland; open grassy woodland within oak woodlands and grasslands	None; no suitable habitat in project area
Usnea longissima	Long-beard lichen	None	None	None	Mendocino County	North coast coniferous forest, broadleafed upland forest	None; no suitable habitat in project area
Viburnum ellipticum	Oval-leaved viburnum	None	None	2	Mendocino County	Chaparral, cismontane woodland, lower montane coniferous forest	None; no suitable habitat in project area

Status code	Definition
E	Listed as endangered.
T	Listed as threatened.
C	Candidate for listing as threatened or endangered
CH	Designated Critical Habitat occurs on project site.
SC	Species of special concern in California.
FP	Fully protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the CDFG.
R	Listed as rare under the California Native Plant Protection Act. This category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
1A	California Native Plant Society Status Code 1A = Plants presumed extinct in California
1B	California Native Plant Society Status Code 1B = Plants that are rare, threatened or endangered in California and elsewhere
2	California Native Plant Society Status Code 2 = Plants that are rare, threatened or endangered in California, but more common elsewhere

Appendix B CEQA Checklist

CEQA Environmental Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The CEQA impact levels include potentially significant impact, less-than-significant impact with mitigation, less-than-significant impact, and no impact. Please refer to the following for detailed discussions regarding impacts:

- Guidance: Title 14, Chapter 3, California Code of Regulations, Sections 15000 et seq. (http://www.ceres.ca.gov/topic/env_law/ceqa/guidelines/)
- Statutes: Division 13, California Public Resource Code, Sections 21000-21178.1 (http://www.ceres.ca.gov/topic/env_law/ceqa/stat/)

CEQA requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. A "no impact" reflects this determination. Any needed discussion is included in the body of the environmental document.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
AESTHETICS - Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☐	☐	☐	X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	X	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	X
AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	X
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?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	X	☐
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)?	☐	☐	☐	X
d) Expose sensitive receptors to substantial pollutant concentration?	☐	☐	☐	X
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	X
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?	☐	X	☐	☐
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 U.S. Fish and Wildlife Service?	☐	X	☐	☐
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?	☐	X	☐	☐
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?	☐	X	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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?	☐	☐	☐	X
CULTURAL RESOURCES - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	X
GEOLOGY AND SOILS - Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	X
ii) Strong seismic ground shaking?	☐	☐	☐	X
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	X
iv) Landslides?	☐	☐	☐	X
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	X	☐
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?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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.	☐	☐	☐	X
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?	☐	☐	☐	X
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?	☐	☐	X	☐
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?	☐	☐	X	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	X
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?	☐	☐	☐	X
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?	☐	☐	☐	X
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?	☐	☐	☐	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
HYDROLOGY AND WATER QUALITY - Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	X
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)?	☐	☐	☐	X
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?	☐	☐	X	☐
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?	☐	☐	X	☐
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?	☐	☐	☐	X
f) Otherwise substantially degrade water quality?	☐	☐	X	☐
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?	☐	☐	☐	X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	X	☐
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?	☐	☐	☐	X
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☐	X
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?	☐	☐	☐	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X
MINERAL RESOURCES - Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	X
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?	☐	☐	☐	X
NOISE - Would the project:				
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?	☐	☐	X	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	X	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	X	☐
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?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X
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)?	☐	☐	☐	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
PUBLIC SERVICES -				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	X
Police protection?	☐	☐	☐	X
Schools?	☐	☐	☐	X
Parks?	☐	☐	☐	X
Other public facilities?	☐	☐	☐	X
RECREATION -				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
facilities such that substantial physical deterioration of the facility would occur or be accelerated?				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	X
TRANSPORTATION/TRAFFIC - Would the project:				
a) Cause an increase in traffic which his substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	X	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	X
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?	☐	☐	☐	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment)?	☐	☐	☐	X
e) Result in inadequate emergency access?	☐	☐	☐	X
f) Result in inadequate parking capacity?	☐	☐	☐	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	X
UTILITY AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	X
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?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact 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?	☐	☐	☐	X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	X
e) Result in 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?	☐	☐	☐	X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	X
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, or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	X	☐	☐
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)?	☐	☐	X	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	X

Appendix C Title VI Policy Statement

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

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Flex your power!
Be energy efficient!

January 14, 2005

TITLE VI
POLICY STATEMENT

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

WILL KEMPTON
Director

"Caltrans improves mobility across California"