

Placer 80 Roadway Rehabilitation Project



Draft Initial Study / Environmental Assessment

Interstate 80
From Hampshire Rocks Undercrossing
To Troy Undercrossing and Kingvale Undercrossing
Placer County

03-PLA-80-KP 106.2/110.2, 111.4

(PM 66.3/68.5, 69.2)

EA 03-0C7700



April 2004

General Information About This Document

What's in this document?

This document is an Environmental Assessment/Initial Study, which examines the potential environmental impacts of the proposed project located in Placer County, California. The document explains why the project is being proposed, project alternatives, the associated environmental impacts, and accompanying mitigation measures to ameliorate these impacts.

What should you do?

- Please read this Environmental Assessment/Initial Study.
- We welcome your comments. If you have any concerns regarding the proposed project, please submit comments via regular mail to: Karen McWilliams, Chief, Office of Environmental Management S-2, Caltrans District 3, Sacramento Area Office, MS 15, 2389 Gateway Oaks Drive, Sacramento, CA 95833. Submit comments via email to: karen_mewilliams@dot.ca.gov
- Submit comments by the deadline: May 30, 2004.

What happens after this?

After comments are received from reviewing agencies and the public, 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 District 3, Attn: Marcia Rose, Associate Environmental Planner, Environmental Management S2, 2389 Gateway Oaks Drive, Sacramento, CA 95833; (916) 274-0593, or use the California Relay Service TTY number, 1 (800) 735-2929.

Interstate 80 in Placer County

DRAFT INITIAL STUDY /ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to: (Federal) 42 USC 4332(2)(C)
(State) Division 13, Public Resources Code

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

Date of Approval

JOHN D. WEBB, Chief
North Region Environmental Services
California Department of
Transportation

Date of Approval

GENE K. FONG
Division Administrator
Federal Highways Administration



Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), in conjunction with the Federal Highway Administration (FHWA) is proposing a roadway rehabilitation project on Interstate 80 (I-80) from Hampshire Rocks Undercrossing to Troy Undercrossing [Kilopost (KP) 106.2/110.2 (PM 66.0/68.5)] and at Kingvale Undercrossing KP 111.4 (PM 69.2) in Placer County, California. A “Build” and “No Build” Alternative have been evaluated for this project.

The Build Alternative is a proposal to overlay the mainline, shoulders, chain-on/chain-off area, and ramps with Portland concrete cement (PCC). In addition, Caltrans proposes to upgrade metal beam guardrails (MBGR), rehabilitate ramps, and widen shoulders from 3.0 m to 3.6 m (10.0 ft to 12.0 ft) to meet current design standards. Structural work will include application of polyester concrete overlays, bridge deck overlays and the replacement of approach slabs and railing at South Yuba Bridge (Bridge No. 19-0105), Troy Undercrossing (No. 19-0106), and at the westbound side of the Kingvale Undercrossing (No. 19-01907). Furthermore, the rehabilitation of drainage structures (i.e. culvert replacement and culvert lining) and the construction of permanent detention and/or infiltration basins will be completed to meet current water quality guidelines. Most work will be done within the State Right of Way.

Because the project was designed with appropriate avoidance, minimization, and mitigation measures, the project will have less than significant impact on aesthetics resources, biological resources, cultural resources, hazardous waste, and water quality. Therefore, the proposed project will not result in impacts considered “adverse” under NEPA or “significant” under CEQA.

Mitigation Measures

Sensitive Species

Fencing will be installed around the construction area in order to contain project disturbance. A landscape architect shall coordinate with a biologist to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. The plan will focus on replanting or enhancing habitat in the construction area. Quality

habitat supporting mammal species exists next to the project site and should provide cover, feeding, and reproduction resources for various mammal species. Avoidance measures will ensure protection of various sensitive mammal species during construction activities. A toxic material control and spill-response plan will be implemented. The plan will include measures to prevent soil and water contamination by eliminating the surface transport of raw cement, concrete/concrete washings, asphalt, paint, coating materials, oil, petroleum products, or any other substance that could be hazardous to terrestrial or aquatic life. Caltrans or its contractors will clean up all spills according to the Spill-Prevention and Countermeasure Plan (SPPCP) and immediately notify the California Department of Fish and Game (CDFG) of any spills and cleanup procedures.

Visual Resources

There will be moderately high impacts to the visual quality within the project site due to construction activities. Visual impacts will include the removal of existing vegetation for placement of the water quality basins and excavation or embankment slope construction. In addition, there are potential impacts to the South Yuba River riparian corridor by the possible removal of vegetation and on-going soil erosion resulting from the bridge modification activities and new embankment slope construction. Measures will be taken to minimize visual impacts and improve the visual quality of the highway within the project area.

Hazardous Waste

Asbestos exists in the joint sheet packing material of the Troy Bridge Undercrossing and the westbound Kingvale Bridge Undercrossing. Should this material be disturbed or require disposal, the *Aerial Lead Site Investigation and Bridge Survey Report (July 2002)* outlines estimated costs and recommended regulatory procedures that will be followed. An Aerially Deposited Lead (ADL) investigation was conducted and found to exist within the project boundaries. Final specifications should be requested by the Project Engineer (PE) from the North Region Hazardous Waste Office (NRHWO) two months before Plans and Estimates (P & E). Removal of the yellow traffic stripe paint, which may contain heavy metals such as lead and chromium, from the existing portion of the roadway may occur. To avoid dealing with this potential issue, it is advisable to grind the roadway in its entirety as opposed to removing the yellow paint stripe. If it is not feasible to grind the roadway in its entirety, then the removed paint material shall be disposed of at a Class 1 disposal facility.

Migratory Bird Treaty Act

Quality habitat is present adjacent to the project site for sensitive avian species; this habitat should provide temporary cover, nesting, and feeding for any displaced avian species. Because it is anticipated that migratory birds may try to nest within the project area between March 1 and September 1, a qualified biologist will conduct pre-construction surveys for migratory bird nests prior to the removal of vegetation. If nesting birds are present, no construction activities will be allowed to interfere with nesting activities.

Executive Order (EO) 13112, Control of Invasive Species

Throughout the project site, invasive exotic plants were identified. To avoid the introduction or spread of noxious weeds into previously non-infested areas, Caltrans or its contractors will implement re-vegetation measures for all disturbed soils, including the use of native species, soil amendments, and “weed free” mulch.

Water Quality

In order to address permit compliance, appropriate selection of structural and non-structural control measures will be considered to reduce the discharge of pollutants from the construction operation of the rehabilitation project. Adherence to mitigation measures will ensure compliance with the terms of the National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 99-06-DWQ).

- Since the amount of disturbed soil during the construction phase would exceed 0.4 ha (1 ac) of land; Standard Special Provision 07-345 shall be included in the Plans, Specification and Estimates (P S&E) to address water pollution control measures.
- Incorporation of permanent storm water runoff treatment measures, such as detention basins will be implemented to control pollutants resulting from normal highway operations.
- A report of Notification of Construction (NoC) shall be submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB) at least 30 days prior to beginning construction.

Determination

An Initial Study has been prepared by the Caltrans. Based on this study, it is determined that the proposed action will not have a significant effect upon the environment for the following reasons:

Negative Declaration

- The project will have less than significant effects, with implementation of avoidance, minimization, and mitigation measures, on aesthetics, biological resources, cultural resources, hazardous waste, and hydrology and water quality.
- The project will have no effect on agricultural resources, air quality, noise, geology and soils, community resources, land use planning, population and housing, mineral resources, noise, recreation, Section 4(f) properties and utilities.

The project will have positive impacts on public services and transportation

JOHN D. WEBB, Chief
North Region Environmental Services
California Department of Transportation

Date

Summary

The California Department of Transportation (Caltrans), in conjunction with the Federal Highway Administration (FHWA) is proposing a roadway rehabilitation project on Interstate 80 (I-80) from Hampshire Rocks Undercrossing to Troy Undercrossing [Kilopost (KP) 106.7/110.2 (PM 66.3/68.5)} and at Kingvale Undercrossing KP 111.4 (PM 69.2) in Placer County, California. A “Build” and “No Build” Alternative have been evaluated for this project

The Build Alternative is a proposal to overlay the mainline, shoulders, chain-on/chain-off area, and ramps with Portland concrete cement (PCC). In addition, Caltrans proposes to upgrade metal beam guardrails (MBGR), rehabilitate ramps, and widen shoulders from 3.0 m to 3.6 m (10.0 ft to 12.0 ft) to meet current design standards. Structural work will include application of polyester concrete overlays, bridge deck overlays and the replacement of approach slabs and railing at South Yuba Bridge (Bridge No. 19-0105), Troy Undercrossing (No. 19-0106), and at the westbound side of the Kingvale Undercrossing (No. 19-01907). Furthermore, the rehabilitation of drainage structures (i.e. culvert replacement and culvert lining) and the construction of permanent detention and/or infiltration basins will be completed to meet current water quality guidelines. All work will be done within the State Right of Way or within a temporary construction easement.

The “No Build” Alternative would not implement any of the proposed improvements. Routine and necessary maintenance would continue along I-80; however, operational features would not be improved. Without plans to address roadway deficiencies, the existing facility would not be upgraded to current highway standards and safety features would not be enhanced.

Because the project was designed with appropriate avoidance, minimization, and mitigation measures, the project will have less than significant impact on aesthetics resources, biological resources, cultural resources, hazardous waste, and water quality. Therefore, the proposed project will not result in impacts considered “adverse” under NEPA or “significant” under CEQA.

Mitigation Measures

Sensitive Species

Although the temporary impact to montane chaparral habitat is relatively small, Caltrans will avoid, minimize, and compensate for impacts by implementing mitigation measures. Caltrans or its contractors will ensure that the removal or disturbance of sensitive biological resources adjacent to construction is avoided by the installation of orange barrier fencing and/or sedimentation fencing around the construction area. A landscape architect shall coordinate with a biologist to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. The plan will focus on replanting or enhancing habitat in the construction area.

Avoidance measures will ensure protection of various sensitive mammal species during construction activities. A toxic material control and spill-response plan will be implemented. The plan will include measures to prevent soil and water contamination by eliminating the surface transport of raw cement, concrete/concrete washings, asphalt, paint, coating materials, oil, petroleum products, or any other substance that could be hazardous to terrestrial or aquatic life. Caltrans or its contractors will clean up all spills according to the Spill-Prevention and Countermeasure Plan (SPPCP) and immediately notify the California Department of Fish and Game (CDFG) of any spills and cleanup procedures.

Hazardous Waste

Asbestos exists in the joint sheet packing material of the Troy Bridge Undercrossing and the westbound Kingvale Bridge Undercrossing. Should this material be disturbed or require disposal, the *Aerial Lead Site Investigation and Bridge Survey Report (July 2002)* outlines estimated costs and recommended regulatory procedures that will be followed. An Aerially Deposited Lead (ADL) investigation was conducted and found to exist within the project boundaries. Final specifications should be requested by the Project Engineer (PE) from the North Region Hazardous Waste Office (NRHWO) two months before Plans and Estimates (P & E). The yellow traffic stripe paint, which may contain heavy metals (e.g. lead, chromium), may be removed from the existing portion of the roadway. To avoid dealing with this potential issue, it is advisable to grind the roadway in its entirety as opposed to removing the yellow paint stripe. If it is not feasible to grind the roadway in its entirety, then the removed paint material shall be disposed of at a Class 1 disposal facility.

Visual Resources

There will be moderately high impacts to the visual quality within the project site due to construction activities. Visual impacts may include the removal of existing vegetation for placement of the water quality basins and excavation or embankment slope construction. In addition, there are potential impacts to the South Yuba River riparian corridor by the possible removal of vegetation and on-going soil erosion resulting from the bridge modification activities and new embankment slope construction. However, the following measures will be taken to minimize visual impacts and improve the visual quality of the highway within the project area:

- All disturbed areas shall utilize temporary erosion control measures during construction to minimize permanent impacts to visual quality.
- All areas disturbed during the construction shall receive permanent erosion control measures. All finished sloped and contour graded areas shall be hydro-seeded with a permanent seed mixture composed of native plant species.
- All wood debris generated from clearing and grubbing operations shall be chipped and stockpiled for later use in areas requiring erosion control measures.
- Effort shall be made to minimize negative impacts to native vegetation and rock outcropping in the design and construction phases. Design shall minimize cut-fill limits whenever possible to avoid unnecessarily disturbing existing terrain.
- Finished slopes shall reflect sensitivity to the natural topography. Newly constructed slopes shall be cut to mimic adjacent natural rock formations, where feasible.
- At the termination of construction, all areas used for staging, access or other construction activities shall be contour-graded to reflect the surrounding topography. Select boulders and logs removed for earthwork operations shall be stockpiled and strategically placed back into contour graded areas, as a means of enhancing visual integration into the surrounding landscape.
- All new drainage facilities using galvanized steel material shall be treated with a stain to reduce glare or located to minimize visual exposure from roadway vantage points.
- Water quality improvements shall avoid the use of concrete/asphalt lined basins and ditches. Water quality improvement features shall be earthen or rock lined when possible. Construction of features with harsh angles and steep slopes (1: 2 or flatter side slopes) will be avoided. Basins shall be located to minimize the negative visual impacts to motorists.

Migratory Bird Treaty Act

Quality habitat is present adjacent to the project site providing temporary cover, nesting, and feeding for any displaced avian species. The implementation of the following avoidance measures will ensure the protection of various avian species during construction activities:

- Because it is anticipated that migratory birds may try to nest within the project area between March 1 and September 1, a qualified biologist will conduct pre-construction surveys for migratory bird nests prior to the removal of vegetation. If nesting birds are present, no construction activities will be allowed to interfere with nesting activities.

Executive Order (EO) 13112, Control of Invasive Species

Throughout the project site, invasive exotic plants were identified, and are considered noxious weeds by the Federal Department of Food and Agriculture (FDFA). Executive Order (EO) 13112 requires any federal agency action to combat the introduction or spread of invasive species in the United States. To avoid the introduction or spread of noxious weeds into previously non-infested areas, Caltrans or its contractors will implement re-vegetation measures for all disturbed soils, including the use of native species, soil amendments, and “weed free” mulch.

Water Quality

In order to address permit compliance, appropriate selection of structural and non-structural control measures will be considered to reduce the discharge of pollutants from the construction operation of the rehabilitation project. Adherence to the following will ensure compliance with the terms of the National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 99-06-DWQ):

- The project shall adhere to the conditions of the Caltrans Statewide NPDES Permit (CAS # 000003, Order # 99-06-DWQ), issued by the State Water Resources Control Board. Adherence to the compliance requirements of the NPDES General Permit CAS # 000002, Order # 99-08-DWQ, for General Construction Activities is also required if the construction activity disturbs more than 0.4 ha (1 ac) of soil.
- The project indicates that the amount of disturbed soil during the construction phase would exceed 0.4 ha (1 ac) of land; therefore, Standard Special Provision 07-345 shall be included in the Plans, Specification and Estimates (P S&E) to address water pollution control measures.

- Construction projects with a disturbed area of more than 0.40 ha (1 ac) are covered under the NPDES General Permit and require a Storm Water Pollution Prevention Plan (SWPPP) containing effective erosion and sediment control measures. These measures will address soil stabilization practices, sediment control practices, tracking control practices, and wind erosion control measures. In addition, the SWPPP must include non-storm water controls, waste management and material pollution controls.
- Incorporation of permanent storm water runoff treatment measures, such as detention basins will be implemented to control pollutants resulting from normal highway operations.
- A report of Notification of Construction (NoC) shall be submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB) at least 30 days prior to beginning construction:
- The District Hydraulics Branch Office maintains a listing of areas that are sensitive to accidental spills that will result in discharge directly to municipal or domestic water supply reservoirs, groundwater percolation facilities, or related tributaries. If a Caltrans project is within the watersheds of these high-risk areas, Caltrans or its contractor shall make documented efforts to implement control measures that:
 - Eliminate or intercept spills,
 - Minimize events that cause or contribute to spills,
 - Enhance spill response times of Maintenance to the project area.
- Special care is required when handling and storing contaminated soil, including soil contaminated with Aerially Deposited Lead (ADL). The soil quantity, contamination level, storage, seasonal (winter/summer) operations are water pollution parameters that should be described in appropriate section of the Special Provisions and should be addressed in the SWPPP. Section H.9 of the Caltrans Statewide NPDES Permit requires that the CVRWQCB be notified if the project involves reuse of ADL contaminated soil, 30 days prior to bid advertisement. The CVRWQCB will determine any need for the development of Waste Discharge Requirements (WDR).
- To address the potential presence of chromium in Portland concrete cement (PCC) grindings, a separate WDR from CVRWQCB will be required for the discharge of the waste generated by the PCC grinding operation. Analytical tests will be performed and plans developed to demonstrate that the encapsulation and burial of the PCC grinding waste within the Caltrans right-of-way would not pose a

threat to water quality. A WDR waiver may be obtained by demonstrating that the evaporated PCC grinding waste is inert. The waste may be hauled to a landfill if chemical analysis demonstrates that the landfill support the chromium levels in the PCC waste.

If construction activities create a visible plume on surface waters, Caltrans' Standard Specifications and mitigation measures shall be implemented immediately. Potential mitigation measures include minimizing the disturbance of soil, streambed gravels; as well as, constructing a silt barrier immediately downstream of the construction area. All temporary fills required for the stream crossing/work platform will be removed upon completion of in-stream work activities. Erosion control measures will be implemented at the sites requiring vegetation removal or groundbreaking activity and may include the use of organic mulch and/or seeding or plantings. The Office of Landscape Architecture shall coordinate with a biologist in the Office of Environmental Management to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. Any additional measures included in the 1601 Streambed Alteration Agreement, Army Corp of Engineers (ACOE) 404 permit, and the Regional Water Quality Control Board 401 certification will be included in mitigation efforts.

Furthermore, since the proposed project will widen existing shoulders from 3.0 m to 3.6 m (10 ft to 12.0 ft) to facilitate staging and to accommodate future lane construction, additional fill material will be required to form the highway structural section. Fill will be placed in such a manner as to minimize encroachment upon the Yuba River floodplain.

Permits

Within the project limits, the South Yuba River falls within the jurisdiction of the Army Corps of Engineers (ACOE). Any dredge or fill material from project construction that is placed within an ACOE jurisdictional stream or wetland may require a Clean Water Act (CWA) Section 404 Individual or Nationwide Permit from the ACOE, as well as the accompanying Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board (CVRWQCB). Work below the South Yuba River bank will also require a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG). All construction activities must comply with the Caltrans Statewide National Pollution Discharge Elimination System (NPDES) permit. If construction activities impact

more than 0.40 ha (1 ac) of land, then a Storm Water Pollution Prevention Plan (SWPPP) and Construction General Permit (Order # 99-08-DWQ) will also be required.

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List of Technical Studies (bound separately)

- Aerial Lead Site Investigation and Bridge Survey Report
- Community Impact Assessment
- Floodplain Hydraulic Report
- Geotechnical Design Report
- Hazardous Waste Preliminary Site Investigation
- Initial Site Assessment
- Natural Environment Study
- Noise and Air Quality Evaluation
- Traffic Accident Surveillance and Analysis System (TASAS) Data
- Project Scope Summary Report
- Visual Impact Assessment
- Water Quality Comments and Recommendations

List of Abbreviated Terms

AADT	Annual average daily traffic
ac	acre
AC	Asphalt Concrete
ACOE	Army Corps of Engineers
ADDT	Annual Average Daily Traffic
ADL	Aerially Deposited Lead
ADT	Average Daily Traffic
APC	Alternative Pipe Culvert
APE	Area of Potential Effect
BLM	Bureau of Land Management
BMP	Best Management Practices
Caltrans	California Department of Transportation
CCTV	Closed Circuit Television
CEQ	Council of Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cm	centimeter(s)
CMS	Changeable Message Sign
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSP	Corrugated Steel Pipe
CSPDD	Corrugated Steel Pipe Down Drain
CDFG	California Department of Fish and Game
CGS	California Geologic Society
CWA	Clean Water Act
DI	Drainage Inlet
DHV	Dense Hourly Volume
DOC	California Department of Conservation
DOT	Department of Transportation
DWQ	Division of Water Quality
EA	Expenditure Authorization
EB/eb	Eastbound
ESA	Environmentally Sensitive Area
ETW	Edge of Traveled Way
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
ft	foot/feet
ha	hectare
HAR	Highway Advisory Radio
HPSR	Historic Property Survey Report
HRER	Historic Resource Evaluation Report
HSA	Hydrologic Sub-area
in	inch
ISA	Initial Site Assessment
IS/EA	Initial Study/Environmental Assessment
ITS	Intelligent Transportation Systems
km	kilometer(s)
KP	kilometer post
kph	kilometer per hour
LOS	Level of Service
m	meter(s)
mi	mile(s)

mm	millimeter
mph	mile per hour
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NOA	Naturally Occurring Asbestos
NoC	Notification of Construction
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRHWO	North Region Hazardous Waste Office
NSO	Northern Spotted Owl
OGAC	Open graded asphalt concrete
OHWM	Ordinary high water mark
OSD	Over-Side Drain
PCC	Portal Concrete Cement
PM	post mile
PPB	Parts Per Billion
PPM	Parts Per Million
PRC	California Public Resource Code
PS & E	Plans, Specification and Estimates
PSR	Project Study Report
PSSR	Project Scope Summary Report
RSP	Rock Slope Protection
RTP	Regional Transportation Plan
R/W	Right of Way
RWQCB	Regional Water Quality Control Board
RED	Rock Energy Dissipater
RSP	Rock Slop Protection
SHOPP	State Highway Operation and Protection Program
SHPO	State Historic Preservation Office
SI	Safety Index
SOD	Sudden oak death
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TASAS	Traffic Accident Surveillance and Analysis System
TCE	Temporary Construction Easement
TOS	Traffic Operation System
TMC	Traffic Management Center
TMP	Traffic Management Plan
TMS	Traffic Monitoring Systems
TCR	Transportation Concept Report
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WB/wb	Westbound
WDR	Waste Discharge Requirement

Chapter 1 Purpose and Need

1.1 Purpose and Need

Presently, Interstate 80 (I-80) is the main gateway to many of California's winter recreational areas (e.g. ski resorts and snow camps). Because I-80 sustains more recreational traffic during the winter season than any other facility within the state of California, the majority of accidents occur during the winter months. Thus, because of winter storm events and the higher peak-hour traffic volumes during the winter season, the overall accident rates on this segment of I-80 are higher than the statewide average for similar routes. The purpose of this project is to reduce accidents and enhance traveler safety on this section of I-80 from east of Hampshire Rocks Undercrossing (No. 19-0123) to east of the Troy Undercrossing (No. 19-0106). See the site vicinity map (Figure 2) showing the project location.

1.1.1 Safety and Accident Data

The Traffic Accident Surveillance and Analysis System (TASAS) data includes the number of traffic accidents (i.e. injuries and fatalities) that have occurred on the mainline facility and the I-80 ramps within the project limits, spanning a 36-month period (January 1, 2000, through December 31, 2002). The data reveals that the majority of accidents on this segment of I-80 occur during the winter months when recreational related traffic is exceptionally high, and during peak traffic volumes, which generally occur on Friday and Sunday evening.

Of the 28 accidents that occurred on the mainline facility within the 36-month surveillance period, there were seven injuries and no fatalities. Table 1 compares the actual accident rate, which occurred on the mainline to the average accident rate on similar facilities. The actual total accident rate for I-80 within the project limits is 34% and 38% higher for eastbound and westbound I-80 respectively, compared to total the statewide average for similar facilities. In other words, the total accident rate on the mainline is 1.6 and 1.3 times higher for eastbound and westbound I-80 traffic, respectively. Table 2 reveals that actual accident rates at the eastbound on-ramps and the westbound off-ramp are lower than the national average for similar facilities.

Table 1.1 Mainline: Placer County Accidents per Million Vehicles Miles (MVM) Traveled (1/01/00-12/31/02)

Actual				Statewide Average		
Direction	Fatalities	Fatalities + Injury	Total	Fatalities	Fatalities + Injury	Total
Eastbound	0	0.20	0.81	0.015	0.22	0.50
Westbound	0	0.20	0.67	0.015	0.22	0.50

Table 1.2 Ramps: Placer County Accidents per Million Vehicle Miles (MVM) Traveled (01/01/00-12/31/02)

Actual					Statewide Average		
KP (PM)	Description	Fatalities	Fatalities + Injury	Total	Fatalities	Fatalities + Injury	Total
106.93 (66.442)	EB on-ramp from Hampshire Rocks	0	0.00	0.00	0.007	0.21	0.55
106.96 (66.463)	WB off-ramp to Hampshire Rocks	0	0.00	3.51	0.015	0.43	1.15

1.1.2 Traffic Data and Highway Information

Tables 3 and 4 list the projected 2024 Average Daily Traffic (ADT) data for I-80 within the project area, as 51,100 vehicle per day and the Dense Hourly Volume (DHV) of 9,860 vehicles. The projected ADT in years 2034 and 2044 is 60,300 and 69,600 respectively, with a DHV of 11,600 and 13,400, respectively.

Table 1.3 Mainline: Average Daily Traffic (ADT) and Dense Hourly Volume (DHV)

County	KP (PM)	ADT				DHV			
		Base 1999	20 yr 2024	30 yr 2034	40 yr 2044	Base 1999	20 yr 2024	30 yr 2034	40 yr 2044
PLA	106.7/110.2, 111.4 (66.3/68.5,69.2)	28000	51100	60300	69600	5400	9860	11600	13400

Table 1.4 Ramp: Average Daily Traffic (ADT)

KP (PM)	Description	1998 ADT	2010 ADT	2020 ADT
106.93 (66.442)	EB on from Hampshire Rocks	290	386	481
106.96 (66.463)	WB off to Hampshire Rocks	260	346	432

The Caltrans *Interstate 80 Transportation Concept Report (January 2001)* outlines the long-term planning strategy for the I-80 corridor, based upon a 20-year planning horizon; as well as the current traffic conditions of that facility. The report indicates that this segment of I-80¹ is rated at a present Level of Service (LOS) “E”. LOS is a qualitative measure describing operational conditions on the mainline facility and at the intersections. Generally, the description refers to speed, freedom of movement, traffic interruptions, and convenience. The LOS designations are indexed at “A” through “F”, corresponding from best to worst traffic conditions.

Within the project limits, this segment of I-80 is currently operating at a LOS “D”, with an Annual Average Daily Traffic (AADT) of 37,100 vehicles per year. (Table 5) However, during the winter months, the LOS declines to an LOS of “E”. Moreover, by the year 2020, this portion of I-80 is expected to drop to a LOS of “F”, with a projected AADT of 58,100 vehicles per year. In addition, since the adjoining segments of I-80 carry exceptionally high truck volumes (over 25%), these high trucking volumes, combined with long steep grades, accident frequency, and difficult winter storm conditions will continue to severely limit operations. According to the *Interstate 80 Transportation Concept Report*, the Caltrans District 3 standard for rural roads is a Level of Service “E”. Furthermore, in order to sustain this Level of Service, this segment of I-80 requires continued rehabilitation and maintenance, installation of Traffic Operation Systems (TOS), and placement of chain control and roadside improvements.

¹ According to the January 2001 *Interstate 80 Transportation Concept Report (TCR)*, the project is located within Segment 8 (KP 42.170/111.423 [PM 26.208/69.250]) in Placer and Nevada Counties. Note: the proposed project is included in the Nevada County General Plan (November 1995). Annual average daily traffic (AADT) is the total traffic volume for the year, divided by 365 days. The traffic count year commences from October 1 through September 30. The peak-hour designation is an estimate of the "peak-hour" traffic at all points on the state highway system. This value is useful to traffic engineers in estimating the amount of congestion on the facility, and illustrates the capacity at which the highway is operating. Unless otherwise indicated, peak-hour values indicate the traffic volume in both directions.

Table 1.5 Mainline: Annual Average Daily Traffic (AADT), Peak Hour Volumes, Volume to Capacity (V/C) Ratio, Level of Service (LOS)

Year	AADT	Peak Hour Volumes	V/C Ratio	LOS
2000	37,100	4,600	0.89	E
2010	47,600	5,850	1.10	F
2020	58,100	7,150	1.30	F

1.2 Project Background

Interstate 80, a primary transcontinental arterial, is a principal east-west route and a major axis in the movement of goods and services connecting the east coast of the United States with the Pacific Rim. The construction of I-80 was completed in the late 1950's to early 1960's. The concrete pavement had a design life cycle of 20 years; consequently, the facility has served the traveling public well beyond its life cycle.

In Caltrans District 3, I-80 extends 211 km (132 mi) from the Yolo/Solano County Line to the California/Nevada State Line, passing through Yolo, Sacramento, Placer, Nevada and Sierra Counties. Within the project limits, this segment of I-80 is a four-lane freeway serving the north-central area of California from Kingvale to the Nevada/Sierra county line. A portion of I-80 is federally designated as a Scenic Byway.

This facility is characterized by long steep grades and mountain weather conditions, which adversely impact traffic operations, increasing accident frequencies, and reducing overall LOS. Because I-80 is the primary route for interregional traffic, serves as a major conduit for interstate and intra-state commercial traffic, and is an access route to winter recreational facilities; rehabilitation of this portion of I-80 is necessary to maintain an adequate LOS for public travel and commerce. The proposed project follows the corridor concept strategy, which was approved for use in the I-80 corridor, as outlined in the Draft Ten Year State Highway Operation and Protection Program (SHOPP) Plan.²

² To support the accelerated safety/rehabilitation projects and provide for the new 20-year pavement, Caltrans North Region established a Delta Team to study and accelerate the I-80 corridor improvement projects which are listed in the 10-year District 3 SHOPP plan.

1.3 Project Description

The project limits are east of Hampshire Rocks Undercrossing (No. 19-0123) to east of the Troy Undercrossing (No. 19-0106) (KP 106.7/110.2, 11.4 [PM 66.3/68.5, 69.2]). Concrete overlay will be placed on the traveled way, shoulders, chain control areas and ramp gores from Hampshire Rocks Undercrossing (KP 106.7 [PM 66.3]) to Troy Undercrossing (KP 110.2 [PM 68.5]). The overlay will be tapered to meet the existing elevation of the structure approach slab. Since the bridges at Hampshire Rocks will be replaced during a future project (EA 03-3A200K), the bridge tapers will be composed of either asphalt/concrete (AC) or Portland concrete cement (PCC). Furthermore, the westbound off-ramp and eastbound on-ramp at Hampshire Rock will be rehabilitated and overlaid with PCC. To accommodate a future lane drop for a truck-climbing lane, the eastbound on-ramp will be realigned. Realigning the on-ramp will reduce the time needed to close the ramp for construction. The overlay will be tapered to meet the elevations at the existing structures. Please see the Project Location Map (Figure 1) and the Project Vicinity Map (Figure 2).

There will be deck polyester overlay and replacement of approach slabs and railings at the South Yuba River, Troy Undercrossing and westbound Kingvale Undercrossing. Note that concrete overlay of the roadway adjacent to the Kingvale Undercrossing was completed previously (EA:03-1A0704). Therefore, the polyester concrete overlay at the Kingvale Undercrossing will be placed to conform to the existing roadway grade. In addition, shoulder structural sections will be reconstructed and widened to 3.6 m (12.0 ft). The shoulder reconstruction is needed to not only accommodate staged construction and provide a safe work zone; but shoulder widening will facilitate future maintenance of the highway.

The existing cross culvert system will require implementation of various rehabilitation strategies, including the installation of rigid liners, invert paving and culvert replacement. The existing culvert conditions range from good to various stages of deterioration, including metal rusting/flaking and perforated inverts. In some cases, the existing culverts will be extended to accommodate fill slope extensions from roadway widening construction. (See: Appendix B: Aerial Layouts (L-1 to L-16).

To accommodate erosion control, Rock slope protection (RSP) will be placed at the outlet of all culverts, and at some culvert inlets. Other drainage features will be installed throughout the project limits, including drains with RSP and parallel piping

systems which will convey the storm water to treatment facilities (i.e. sediment basins, sand traps). In the case where culverts are replaced across the entire freeway, pipe sizes at selected locations may be enlarged to at least 900 to 1200 mm (35.43 to 47.24 in) to accommodate animal crossing beneath the freeway. Metal beam guardrails and terminal ends of such facilities will be upgraded to current standards.

All relevant water quality provisions in the statewide National Pollutant Discharge Elimination Permit (NPDES) will be observed. The upgrades to the drainage system will meet current water quality guidelines. Specifically, work may include pavement of side ditches along cut slopes, development of new ditches, placement of traction sand devices, and the permanent placement of detention and/or infiltration basins to collect run-off from the paved areas. Detention basins are a permanent device formed by the excavation and construction of an embankment to detain excess runoff. The basin will allow sediments and particulates to settle; after which, the runoff will be discharged to a surface water conveyance, such as a stream or a river.

The infiltration basin is designed to retain run-off; however, the water is allowed to stand in the basin during a limited time in which the run-off will percolate through the land surface into the groundwater system. Because of the terrain and environmental resources near the freeway, water quality basins cannot be sited along the entire length of the project. The infiltration and detention basins will be placed at the locations listed in Table 6. Note: stations and postmiles are approximate.

Table 1.6 Location of Detention and Infiltration Basins

BASIN NO.	STATION	PM	LOCATION
1	WB 1072+00	66.6	Median
2	WB 1080+20	67.1	North Side Westbound Route 80
3	WB 1080+20	67.1	Median
4	WB 1082+80	67.2	Median
5	WB 1083+60	67.3	North Side Westbound Route 80
6	WB 1097+40	68.2	Median
7	WB 1099+40	68.3	North Side Westbound Route 80

In addition, since I-80 is an Intelligent Transportation Service (ITS) Route³, a number of traffic management or Traffic Operation Systems (TOS) elements will be installed

³The term Intelligent Transportation Systems (ITS) refer to the integration of advanced sensor, computer, electronic, and communications technologies into Caltrans' roadway management

within the project limits. According to the Traffic Operation Systems Master Plan, I-80 TOS improvements will generally include installation of changeable message signs (CMS) and closed circuit televisions (CCTV). Furthermore, the TOS improvements will require the construction of a fiber optic trunk line throughout the project limits in order to link the TOS elements to a satellite operations center in Kingvale, and ultimately to the Traffic Management Center in Sacramento. Specifically, one CMS and one CCTV will be installed at Hampshire Rock Undercrossing. One CMS will be placed on the eastbound side of I-80 at Rainbow Bridge, and one CMS will be removed from the median (KP 107.3[PM 66.7]) and relocated to the outside shoulder at the same post mile. One CCTV will be upgraded. In addition, one new CCTV and CMS will be installed on the westbound portion of the Kingvale Undercrossing

The TOS elements will be sited off the shoulder within the Caltrans Right of Way. To protect the traveling public, all control boxes and any unshielded ancillary structures will be placed outside of the Clear Recovery Zone (CRZ), at approximately 9.0 m (2.7 ft) from the edge of traveled way. Specifically, the CCTV and CMS will be placed on poles, which are anchored in a cast-in-drilled-hole (CIDH) pile foundation located at approximate depths of 2.7 m (0.82 ft), 3.6 m (1.0 ft) and 5.5 m (1.67 ft). If the poles cannot be placed outside of the CRZ, then the poles will be protected by the installation of MBGR. The service cabinets and the controller cabinets for the CMS will be relocated or replaced approximately 18 m (6.0 ft) from the CMS. The fiber optic vaults will be placed at the edge of the shoulder, generally before or after each structure, and at each TOS element. The fiber optic conduit will be located in a trench at a depth of 1.2 m (0.36 ft); the trenches will be dug between the shoulder and at a lateral length of one meter (0.30 ft) from the outside edge of the pavement.

This pavement rehabilitation project will be funded through the 2004 State Highway Operational and Protection Program (SHOPP) for the 2005/06 fiscal year. The capital cost is estimated to be \$19,500,000 based upon the 2001/02 fiscal year estimates. The project will commence construction in May of 2006.

strategies. Traffic Operations Systems (TOS) are a subset of ITS. TOS elements (e.g. CCTV, CMS) are used to increase the efficiency of the existing highways by reducing recurrent and non-recurrent delays. A recurrent delay results from traffic volume exceeding the highway design capacity. A non-recurrent delay is caused by episodic events, such as collisions, sporting events, and maintenance or construction activities. ITS and TOS are designed to increase the safety and efficiency of California's transportation facilities.

1.4 Disposal/Borrow/Storage Sites

Per the February 1, 2004 North Region District Directive entitled “Disposal, Staging and Borrow Area (DSB) Requirements”, Caltrans Districts will designate and ensure the availability of DSB sites on projects with excess material and construction staging. The Project Development Team has determined that there is no need for a DSB site.

Figure 1-1 Project Location Map

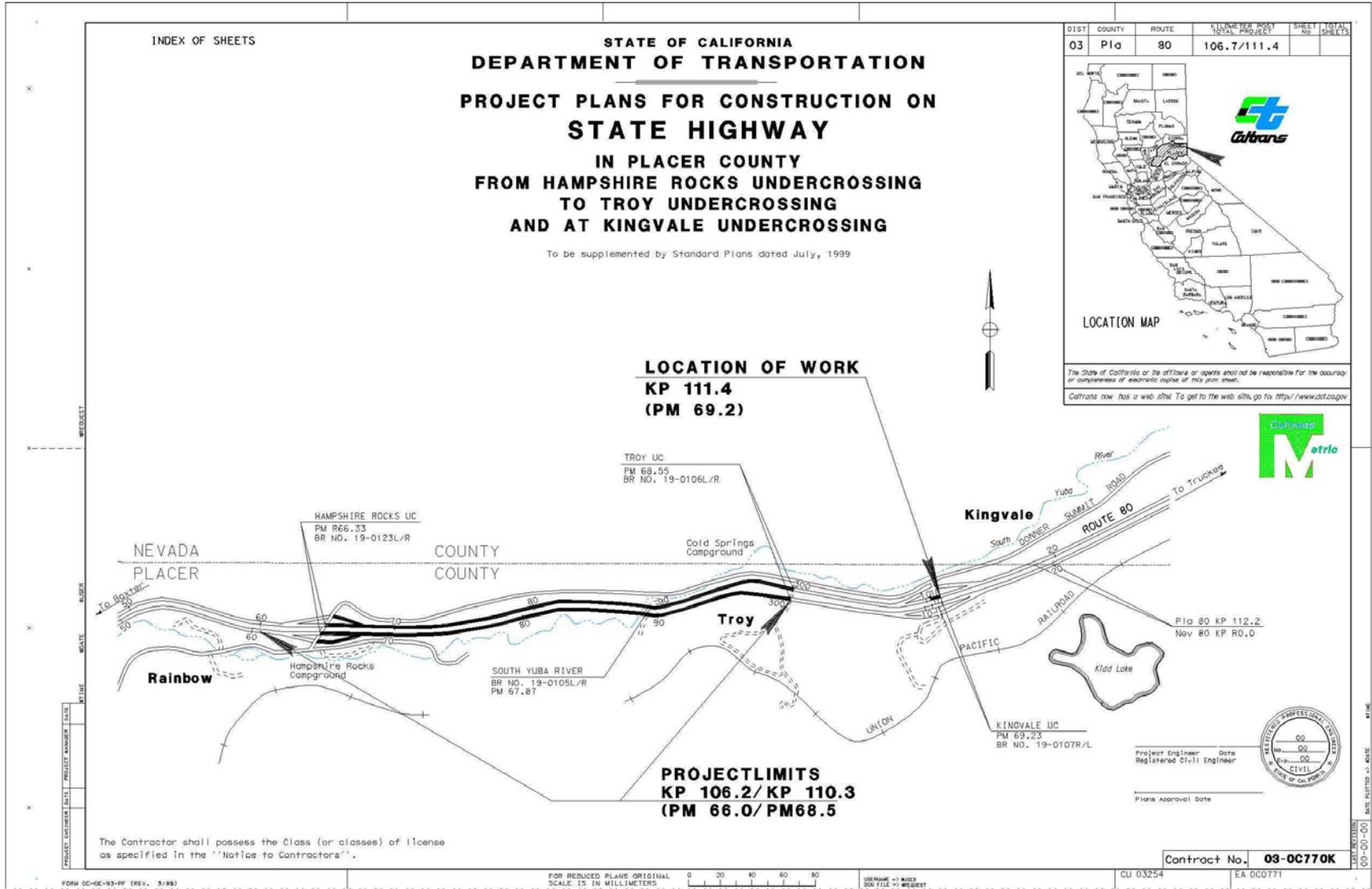
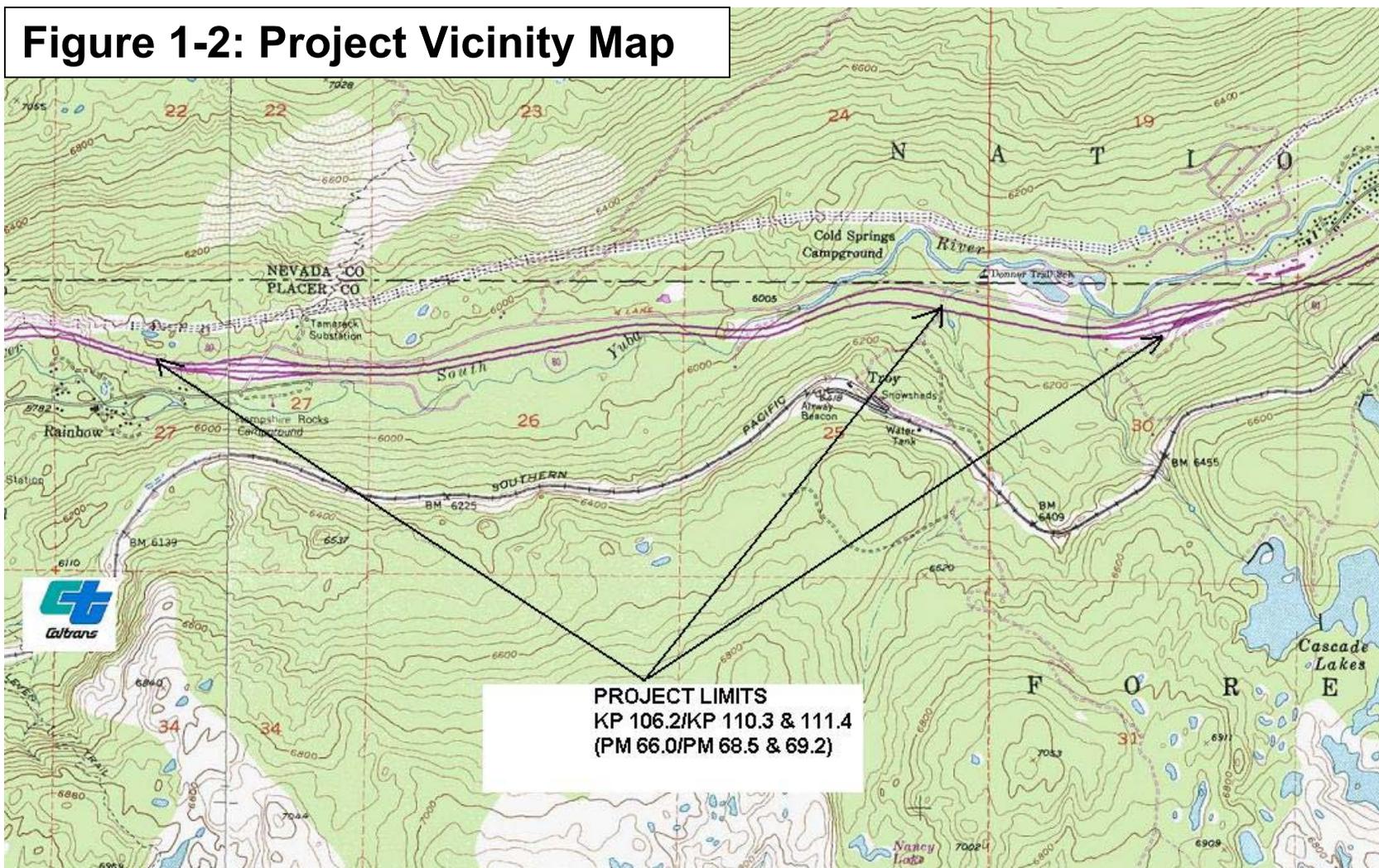


Figure 1-2 Project Vicinity Map



Chapter 2 Project Alternatives

2.1 Project Alternatives

2.1.1 “Build” Alternative

One “build” alternative has been developed and evaluated for this project. This alternative proposes the following features:

- The westbound off-ramp and eastbound on-ramp at Hampshire Rock Undercrossing (KP 106.7[PM 66.3]) will be rehabilitated and overlaid with Portland concrete cement (PCC). To accommodate a future lane drop for a truck-climbing lane that has been proposed in the Emigrant Gap project (EA: 03-3A200K), the eastbound on-ramp will be realigned. Realigning the on-ramp will reduce the time needed to close the ramp during construction.
- Concrete overlay will be placed on the traveled way, shoulders, chain control areas and ramp gores from Hampshire Rocks Undercrossing (KP 106.7 [PM 66.3]) to Troy Undercrossing (KP 110.2 [PM 68.5]). The overlay will be tapered to meet the existing elevation of the structure approach slab. Since the bridges at Hampshire Rocks will be replaced during a future project (EA 03-3A200K), the bridge tapers will be composed of either asphalt/concrete (AC) or Portland concrete cement (PCC). No AC will be placed on any of the structures.
- There will be deck polyester overlay and replacement of approach slabs and railings at the South Yuba River, Troy Undercrossing and westbound Kingvale Undercrossing. Note that concrete overlay of the roadway adjacent to the Kingvale Undercrossing was completed under a previous contract (EA:03-1A0704). Polyester concrete overlay at the Kingvale Undercrossing will be placed to conform to the existing roadway grade.
- Shoulder structural sections that were not previously reconstructed in the Kingvale project (EA:03-1A0704) will be reconstructed under the present contract (EA:03-0C7700). Shoulders will be widened to 3.6-meter (m) (12.0 feet (ft)) to accommodate staged construction and provide a safe work zone. The 3.6 m (12.0 ft) shoulder will also enhance future maintenance.
- The work will include the placement of culvert liners into existing deteriorated culverts, the complete replacement of non-functional culverts, and the placement of culvert flared end sections where appropriate. Furthermore, the existing drainage systems will be upgraded to meet current water quality standards, as outlined in the

Storm Water Management Plan (SWMP) guidelines. Work includes, but is not limited to paving side ditches along cut slopes and installing new ditches and traction sand trap devices. Detention or infiltration basins will be sited within the project limits to collect runoff from the pavement. Because of the typography and environmental resources near the freeway, basins cannot be sited along the entire length of the project. Therefore, basin placement will not impact any archaeological, biological, or water resources.

- The Metal Beam Guardrail (MBGR) and terminal ends will be upgraded to meet the current standards.
- Within the project limits, Traffic Operation System (TOS) elements are proposed. Work includes but is not limited to:

- Constructing a fiber optic trunk line throughout project limits. Details for attachment to existing bridges will be coordinated through the District 3 electrical design group.
- Installing two traffic-monitoring stations.
- Relocating an existing Changeable Message Sign (CMS) sign located in the median east of Hampshire Rocks to the outside shoulder because the existing location interferes with snow removal operations.
- Upgrading lighting at chain control areas and the Hampshire Rocks interchange to meet current standards.

Final selection between the “build” and the “no-build” alternatives will not be made until the completion of the environmental impact evaluation and the consideration of public comments.

2.1.2 “No-Build” Alternative

On I-80 within the project limits, routine and necessary maintenance will continue. However, operational improvements will not be implemented, nor will geometric deficiencies be upgraded. Therefore, the “No-Build” Alternative will not enhance overall transportation safety by ameliorating the number of accidents, nor mitigating traffic accident patterns within the project limits.

Chapter 3 **Affected Environment, Environmental Consequences, and Mitigation Measures**

3.1 Environmental Checklist

The following CEQA Environmental Significance Checklist is a device that is used to identify and evaluate potential impacts from the proposed activity on physical, biological, social and economic resources. This checklist is not a NEPA requirement. However, because this project is being funded by state and federal agencies, it is written to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) [NEPA 40 CFR 1506.b, 1508.9 (b), PRC 21083 and 21087]. The words “significant” and “significance” which are used throughout the checklist and subsequent discussions are related to CEQA thresholds only.

One of the basic purposes of the California Environmental Quality Act (CEQA) is to inform government decision makers and the public of impacts from proposed activities, and in particular, those impacts that are either significant or potentially significant. Differences do exist in the way impacts are addressed in CEQA environmental documents, as compared to NEPA environmental documents. While CEQA requires that environmental documents issue a determination of significant or potentially significant impact, NEPA does not. Thus, addressing significant or potentially significant impacts in joint CEQA and NEPA environmental documents can be confusing, especially in those instances when the two laws and implementing regulations have different thresholds of significance.

Under NEPA, an Environmental Assessment (EA) is used to help the Federal agency determine whether an Environmental Impact Statement (EIS) is required by evaluating whether the project will have a significant environmental impact. The EA also discloses the magnitude of the impacts in terms of context and intensity. Once the magnitude of the impacts is disclosed, no judgments or recommendations are made regarding the significance of those impacts.

For the purpose present joint EA/IS, determination of significant or potentially significant impacts are made only in the context of CEQA. Although not explicitly

identified in this document, impacts in the context of NEPA are assumed to be minimal. Therefore, based upon the results of the technical studies, it has been determined that the appropriate level of NEPA environmental documentation for this project is an Environmental Assessment. Under CEQA, the appropriate level of environmental documentation is an Initial Study.

The technical studies prepared for this environmental analysis (listed in the Table of Contents) are available for review at the Caltrans North Region Environmental Management Office at 2389 Gateway Oaks Drive, Suite 100, Sacramento, CA 95833. Please contact Karen McWilliams at (916) 274-0631 or karen_mcwilliams@dot.ca.gov for more information.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS —Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
II. AGRICULTURE RESOURCES —In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
III. AIR QUALITY —Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES—Would the project:				
a) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State Habitat Conservation Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
COMMUNITY RESOURCES—Would the project:				
Affect life-styles, or neighborhood character or stability?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect employment, industry, or commerce, or require the displacement of businesses or farms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect property values or the local tax base?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Affect any community facilities (including medical, educational, scientific, or religious institutions, ceremonial sites or sacred shrines)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in alterations to waterborne, rail, or air traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in substantial impacts associated with construction activities (e.g. noise, dust, temporary drainage, traffic detours and temporary access, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V. CULTURAL RESOURCES—Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS—Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

VII. 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and collision conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VIII. HYDROLOGY AND WATER QUALITY—				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IX. LAND USE AND PLANNING—Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. MINERAL RESOURCES—Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XI. NOISE —Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. POPULATION AND HOUSING —Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
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XIII. PUBLIC SERVICES—Would the project:

a) 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 cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. RECREATION—Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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XV. SECTION 4F—Would the project:

a) Result in the use of any publicly owned land from a park, recreation area, or wildlife and water fowl refuge, as defined by Section 4(f) (23 CFR 771.135)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Affect a significant archaeological or historic site, structure, object, or building as defined by Section 4(f) (23 CFR 771.135)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Involve construction use as defined by Section 4(f) (23 CFR 771.135)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC—Would the project:				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XVII. UTILITIES AND SERVICE SYSTEMS—Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE—

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

3.2 Checklist CEQA/NEPA Discussion

3.2.1 Aesthetics

Visual Environment

The project site is located in a region characterized by mountainous alpine terrain, typical of the western slope in the Sierra Nevada landscape. The physical environment is composed of forested upland areas, river canyons, granite rock outcroppings and rock faces, with high elevation meadow complexes. The region is considered to have a moderately high scenic value based upon the above stated physical elements. Moreover, since the project area is within a region that is a primary gateway to northern California, this section of highway in Placer County is 'eligible' for scenic highway status in the California Scenic Highway System.⁴

Sierra Nevada montane vegetative communities characterize native vegetation located in the project area. The upland overstory vegetation is composed of Ponderosa pine, Jeffery pine, and white fir. The understory plant species are primary greenleaf manzanita, mountain misery, and mountain snowberry. The riparian vegetation along the South Yuba River is primarily white alder, black cottonwood and various willow (*Salix spp.*) species. Because many locations along I-80 are characterized by sweeping vistas and views of the surrounding mountain landscape, the ultimate aesthetic value will remain only if these views are unobstructed.

Visual Impacts

The anticipated negative visual impacts would include removal of native vegetation to locate sediment basins and accommodate the cut/fill slope construction activities. The South Yuba River riparian ecosystem may be affected by erosion and sedimentation if bridge modifications and embankment slope work occurs adjacent to the river, and are not sufficiently protected with appropriate BMPs.

Mitigation for Visual Impacts

To minimize the visual impacts, the following mitigation measures will be implemented:

- All disturbed areas shall utilize temporary erosion control measures during construction to minimize permanent impacts to visual quality.

- All areas disturbed during the construction shall receive permanent erosion control measures. All finished sloped and contour graded areas shall be hydro-seeded with a permanent seed mixture composed of native plant species.
- All wood debris generated from clearing and grubbing operations shall be chipped and stockpiled for later use in areas requiring erosion control.
- Efforts shall be made to minimize negative impacts to native vegetation and rock outcropping in the design and construction phases. Design shall minimize cut-fill limits whenever possible to avoid unnecessary disturbance of existing terrain.
- Finished slopes shall reflect sensitivity to the natural topography of the site. Newly constructed slopes shall be cut to mimic adjacent natural rock formations, where feasible.
- At the termination of construction, all areas used for staging, access or other construction activities shall be contour graded to reflect the surrounding topography. Select boulders and logs removed for earthwork operations shall be stockpiled and strategically placed back into contour graded areas as a means of enhancing visual integration into the surrounding landscape.
- All new drainage facilities using galvanized steel material shall be treated with a stain to reduce glare or located to minimize visual exposure from roadway vantage points.
- Water quality improvements shall avoid the use of concrete or asphalt lined basins and ditches. Water quality improvement features shall be earthen or rock lined when possible. Features constructed with harsh angles and steep slopes (1:2 or flatter side slopes) will be avoided. The use of curvilinear forms and contour-grading techniques will be implemented to integrate features into the surrounding topography. Basins shall be located to minimize the negative visual impacts to motorists. Stockpiled logs and boulders will be integrated into the final design of the water retention basins.

3.2.2 Agricultural Resources

The proposed project will not impact agricultural resources by converting prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The project will not conflict with existing zoning for agricultural use or the Williamson Act contract. The project will not involve other

⁴ Please see the Visual Impact Assessment (VIA) Report referenced in the Table of Contents.

changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use. There is no known farmland of statewide importance within the project limits. Therefore, mitigation is not required.

3.2.3 Air Quality

The project is exempt from all air emissions analysis because the project is included in Table 2 of Title 40, Section 93.126 of the Code of Federal Regulations (safety improvement). In addition, from section 2.14 of the *Transportation Project Level Carbon Monoxide Protocol (UC Davis ITS-RR-97-21)*, the project is included in Table 1 (Pavement resurfacing and/or rehab) and hence exempt from all emission analysis.

3.2.4 Biological Resources

The project area is located in the Sierra Nevada Floristic Province of the Northern High Sierra Nevada Subregion. Elevation of the project area ranges from 1800-1890 m (5900-6200 ft). The climate seasons fluctuates between hot dry summers and cold winters. In the project area, average annual rainfall is approximately 83 cm (32.5 in), most of which falls as snow in the winter. The growing season ranges from 80 to 125 days beginning around June and ending around October.

Wetlands and Other Waters of the United States

Wetlands were delineated using the routine on-site determination method outlined in the U.S. Army Corps of Engineers' (ACOE) *Corps of Engineers Wetlands Delineation Manual*, which outlines a three-parameter approach based on the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. The jurisdictional boundaries for other waters of the United States were identified based on the presence of an ordinary high-water mark (OHWM) as defined in 33 Code of Federal Regulations (CFR) 328.3(e). Determinations of jurisdictional limits are based on the January 9, 2001, U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers*, [121 S.Ct. 675, 2001], which affected ACOE's jurisdiction over isolated waters.

The results of this present delineation should be considered preliminary, pending verification by the U.S. Army Corps of Engineers (ACOE), Sacramento District.⁵ From preliminary wetlands inventory, approximately 0.49 ha (1.20 ac) of “waters of the US” will be impacted during construction of this project by at various culvert locations. (See Appendix B; Aerial Layout [L1- L16]) In the project area, small fresh emergent wetlands (FEW) are found in sections of the highway median and at some culvert outlets where Rock Slope Protection (RSP) and fill material will be placed. Because the exact quantity of RSP and fill for each culvert system under the ACOE jurisdiction have not been determined, wetland impacts are assumed to be minimal and will be addressed during the Nationwide permitting process.

Surface Drainages

Under Sections 1601 and 1603 of the California Fish and Game Code, Caltrans and other agencies are required to notify California Department of Fish and Game (CDFG) prior to any project that would divert, obstruct or alter the streambed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When fish or wildlife resources may be adversely impacted, CDFG is required to propose reasonable project changes to protect the resource. These modifications are formalized in a CDFG 1601 Streambed Alteration Agreement that will be incorporated into the plans, specifications, and bid documents for the project.

There are several existing cross drainage facilities within project limits. It was determined that many of these facilities have exceeded their service life based upon the existence of rust, corrosion and/or abrasive damage. A number of culvert repair methods were evaluated. These methods are designed to ensure the life cycle will be extended, while ensuring the required discharge capacity is maintained. Roadway and water quality drainage systems will be included in this project to meet Central Valley Regional Water Quality Control Board (CVRWQCB) mandated storm water treatment objectives.

Habitat Descriptions

Eleven habitat types were identified within or adjacent to the project site including, Sierran mixed conifer (SMC), and Montane chaparral (MCP), Riverine (RIV), Urban

⁵ ACOE will use the *Guidance on Waters that are Non-navigable, Isolated, and Intrastate* (January 19, 2001), issued by the Counsel for the Environmental Protection Agency and the Army Corp of

(URB), Montane riparian (MRI), Red fir (RDF), Lodgepole pine (LPN), Jeffery pine (JPN), Fresh emergent wetland (FEW), Wet meadow (WTM), and Barren (BAR).

The following descriptions of major habitat types in the project vicinity are summarized in the following paragraphs:

Sierran Mixed Conifer (SMC)

The SMC habitat consists of numerous conifer and hardwood species forming a multilayered forest (Mayer and Laudenslayer 1988). Tree species typical of the SMC in the project area include Ponderosa pine (*Pinus ponderosa*), Jeffery pine (*P. jeffreyi*), Lodgepole pine (*P. contorta*), White fir (*Abies concolor*), California red fir (*A. magnifica*), and Incense cedar (*Calocedrus decurrens*). The understory layer is sparse and consists of various shrubs and forbs including Greenleaf manzanita (*Arctostaphylos patula*), Rabbitbrush (*Chrysothamnus nauseosus*), Huckleberry oak (*Quercus vaccinifolia*), Broadleaf lupine (*Lupinus latifolus*), Whitethorn ceanothus (*Ceanothus cordulatus*), Squawcarpet (*Ceanothus prostratus*), common snowberry (*Symphoricarpos albus*), and Sierran currant (*Ribes nevadense*). The Sierran mixed conifer is found throughout the project area.

Montane Chaparral (MCP)

Granite soils in the Sierra Nevada create a MCP zone of low dense growth usually consisting of manzanita and associated scattered conifers and exposed granite. Montane chaparral is characterized by evergreen species; however, deciduous species may be present. Composition can change depending on soil types, soil characteristics and elevation. Associated species include pinemat manzanita (*Arctostaphylos nevadensis*) or greenleaf manzanita (*Arctostaphylos*) with snowbrush ceanothus (*Ceanothus velutinus*), whitethorn ceanothus, mountain mahogany (*Cercocarpus montanus*), and other shrub species present in varying numbers. Montane chaparral vegetation can be found throughout the project area.

Riverine (RIV)

Riverine systems are characterized by intermittent or continuous water flow. This water originates at elevated levels and flows downward. Velocity generally declines at progressively lower elevations with an increase in water volumes. Water temperature increases, and the bottom substrate changes from rocky to muddy as elevation decreases. Many wildlife species use open water zones for resting and

Engineers.

escape cover and areas closer to shore provide food for waterfowl, shorebirds, and other species. The project parallels sections of the Yuba River and includes one crossing.

Urban (URB)

The structure of urban vegetation varies depending on species composition (native and exotic) and land use. There is a general outward progression of decreasing development and increasing vegetation cover. Species richness is very low in the inner core and increases into the outer areas. Urban residential habitat is found along I-80 throughout the project area.

Montane Riparian (MRI)

Vegetation of the MRI zone is variable and structurally diverse, consisting of broad-leaved winter deciduous trees with a sparse understory. In the Sierra Nevada, characteristic species include mountain alder (*Alnus incana*), quaking aspen (*Populus tremuloides*), black cottonwood (*Populus trichocarpa*), dogwood (*Cornus sericea*), willow (*Salix spp.*), and California false hellebore (*Veratrum californicum*). The linear nature of MRI zones increases the potential for edge, which is highly productive for wildlife species. Montane riparian vegetation is found along parts of the Yuba River in the project area.

Red Fir (RDF)

Red fir is found at higher elevations (1849-2743 m [6000-9000 ft]). Red fir stands typically exhibit an even aged structure, probably due to disturbance (fire, insects). These stands are usually monotypic due to heavy canopy cover and a thick duff layer excluding understory growth. Associated species include western white pine, whitebark pine at higher elevations and white fir at lower elevations. Brushfields composed of ceanothus may occupy openings in red fir stands after a disturbance until red fir reach medium tree size. Small stands of red fir can be found throughout the project vicinity.

Lodgepole Pine (LPN)

Lodgepole pines are typically characterized by open stands with a sparse understory. Stands in the Sierra usually contain seedlings and saplings unlike those in the Cascades and Rocky Mountains, which are usually even aged. Young pines grow rapidly after disturbance (fire, logging, insects) and can produce cones within five

years. Lodgepole pine is found above the red fir zone at elevations above 1800 m (5900 ft).

Lodgepole pine dominates the canopy with aspen (*Populus tremuloides*) and mountain hemlock (*Tsuga mertensiana*) as associates. The understory may be either sparse or rich depending on location. Lodgepole pine associated with meadow edges or streams have a rich understory of grasses, forbs, and sedges. Lodgepole pine stands usually have a low structural diversity and therefore low species richness. Lodgepole pine is found throughout the project vicinity.

Jeffery Pine (JPN)

The structure of Jeffery pine forest varies over its distribution depending on moisture conditions. On mesic and moist sites a second layer is composed of deciduous hardwoods, while on dry and xeric sites, evergreen hardwoods and conifers compose the second layer. Crown cover varies from 40 to 70 percent in the dominant layer with less than 50 percent cover in the secondary layer, giving the impression of openness. A sclerophyllous⁶ shrub layer is common in most stands.

Associated tree species found in JPN forests include ponderosa pine, white fir, and lodgepole pine, black cottonwood, red fir, sugar pine, and Coulter's pine (*Pinus coulteri*). The shrub layer consists of currant (*Ribes spp.*), snowberry (*Symphoricarpos spp.*), bush chinquapin (*Chrysolepis sempervirens*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and big sagebrush (*Artemisia tridentata*). Common herbaceous species include naked buckwheat (*Eriogonum nudum*), yellow sweetclover (*Melilotus officinalis*), and lupine (*Lupinus spp.*). Small stands of Jeffery pine habitat are found throughout the project area.

Wet Meadow (WTM)

Structure of WTM consists primarily of a layer of herbaceous plants. This herbaceous layer can be separated into sub-layers depending on plant height. Canopy cover is usually very dense (60-100%). A tree and shrub layer can be found at meadow edges. This edge habitat may be important wildlife habitat. Nebraska sedge dominates the site. Wet meadow habitat is found next to the project site, on the north side of I-80.

⁶ Sclerophyllus: A plant located in arid weather conditions, with leathery leaves that retain water.

Fresh Emergent Wetland (FEW)

Fresh emergent wetlands are characterized by erect, rooted herbaceous hydrophytes⁷. The roots of FEW vegetation thrive in an anaerobic environment and the dominant vegetation is generally perennial monocots⁸. They are among the most productive wildlife habitats in California. Within the project area, small FEW are found in sections of the highway median and at some culvert outlets in the project area and are dominated by sedge (*Carex spp.*), and broad-leaved cattail (*Typha latifolia*).

Sensitive Biological Resources

The California Natural Diversity Data Base (CNDDDB) Version 2.1.2 (CDFG 2000b) and California Native Plant Society Version 1.5.1 (CNPS 1999) databases were queried to compile a list of possible special status plant species present in the project area. The Soda Springs and Cisco Grove United States Geological Survey (USGS) 7.5-minute quadrangles were used to query both databases. A special status species list was also obtained from the U.S. Fish and Wildlife Service (USFWS) on April 24, 2003. Emphasis was placed on the special status species that may occur within or near the project site. This research involved database searches for rare plant and habitat occurrences, reviews of published and unpublished material, and interviews with knowledgeable individuals. Two special status plant species were identified as potentially occurring in the project vicinity—the starved daisy (*Erigeron miser*) and Stebbin’s phacelia (*Phacelia stebinsii*).

Some of the plants that were considered, although not formally listed as rare or endangered under the California Endangered Species Act (CESA), meet the definitions of Section 1901, Chapter 10 (Native Plant Protection) of the California Fish and Game Code (CFGC), and are eligible for State listing.

Caltrans’ biologist compared specific habitat requirements, life history notes, elevation, species distribution, and species lists to determine if any special status plant species may be present in the project area. There are no known locations for any special status plant species in the project vicinity. No special status plant species were identified during surveys.

⁷ Hydrophyllus: A vascular plant that grows in water or very wet soil that is too damp for most plants to survive.

⁸ Monocots: Any herbaceous plant having only one cotyledon (first leaf developed by the embryo of the seed plant).

Starved daisy

Starved daisy (*Erigeron miser*) is found in upper montane coniferous forests. They are associated with rocky granite outcrops and are located in Nevada and Placer Counties, in California. Suitable habitat for starved daisy may exist in the project vicinity. The nearest known occurrences (1968 and 1981 respectively) are 3.0 km (1.9 mi) south of the project site and 3.0 km (1.9 mi) east of the project site. Another known occurrence is located 5.2 km (3.2 mi) east of the project site along the west side of Donner Pass near Norden. A recent occurrence (1994) was noted 3.4 km (2.1 mi) north of the project site between upper and lower Lola Montez lakes.

Stebbins's phacelia

Stebbins's phacelia (*Phacelia stebbinsii*) is endemic to California and found in cismontane woodlands, lower cismontane coniferous forest, meadows, and seeps. It is commonly found among rocks and rock rubble on metamorphic rock benches. Suitable habitat for Stebbins's phacelia may exist in the project vicinity. The nearest known occurrence (1997) is approximately 9.0 km (5.6 mi) northwest of the project site east of Lake Spaulding.

Sensitive Wildlife Resources

Special status species and their habitats were surveyed within the project area. These species were selected for analysis based on information from CDFG, USFWS, and field surveys. The *Natural Environmental Study (NES)* contains the listing status, preferred habitat, and a discussion of the special status species' potential to occur in the project area.

The California Natural Diversity Data Base (CNDDDB) database was queried to compile a list of possible special status wildlife and fish species present in the project area. The Soda Springs and Cisco Grove USGS 7.5 minute quadrangles were used to query this database. A special status species list was obtained from the U.S. Fish and Wildlife Service on April 24, 2003. A total of 31 wildlife and fish species were identified as potentially occurring in the project vicinity

Caltrans' biologist compared specific habitat requirements, life history notes, elevation, species distribution, and species lists to determine if any special status species may be present in the project area. An expanded discussion is provided for those sensitive or protected species where habitat may exist within the project vicinity, and for any other sensitive species that were detected during site visits. The following accounts of each species are taken from the California Wildlife Habitat

Relationships (CWHR) database and includes information on generalized habitat associations, food habits, cover, reproduction requirements, seasonal movements, as well as information on known locations in the project area. According to CNDDDB data, all special status wildlife species were found within a 16 km (10 mi) radius of the project site. The following special status species and protected animal species were identified as having the potential to occur in the project area.

Bald eagle

The bald eagle (*Haliaeetus leucocephalus*) is a bird of aquatic ecosystems, frequenting estuaries, rivers, reservoirs and large lakes. Bald eagles breed from January through July with peak activity from March to June. The average clutch size is from one to three with a typical incubation period of 35 days. Chicks fledge when they are 11 or 12 weeks old.

Nests are usually located in uneven aged stands with old-growth components and are near water bodies that support adequate food supply. This species often chooses the largest tree in a stand to build a stick platform nest 15 to 61 m (50 to 200 ft) above ground. The territory of a pair of eagles may include several nests. The nest site is usually located within 1.6 km (1 mi) of a permanent body of water. Bald eagles feed primarily on fish, but will also capture waterfowl, voles, and other small mammals. Bald eagles will either use a soaring flight or hunt from a perch in open areas.

Bald eagles are particularly intolerant of human disturbance during the breeding season. Human activities have caused nest abandonment resulting in reproductive failures. In some cases, eagles have relocated their nests to avoid excessive disturbance. Suitable nesting and foraging habitat for bald eagles may exist in the project vicinity. The nearest known occurrence (1994) is 17.5 km (10.9 mi) north of the project site, at Webber Lake.

Cooper's hawk

The Cooper's hawk (*Accipiter cooperii*) is associated with woodlands and forests. Their diet consists of a variety of small birds and mammals. It nests in deciduous or coniferous trees, six to five m (20 to 50 ft) above the ground and breeds from March through August with a clutch size of two to six (average size: four to five). Seasonal movements consist of downslope movements from areas of heavy snow. The Cooper's hawk may compete with the northern goshawks (*A. gentilis*) and the sharp-shinned hawks (*A. straitus*) for resources.

Suitable nesting and foraging habitat for Cooper's hawk may exist in the project vicinity. The nearest known occurrence (1984) is 10.5 km (6.5 mi) southeast of the project site, 500 m (1640 ft) south of Cedar Creek in a stand of white fir.

Northern goshawk

Northern goshawks (*Accipiter gentilis*) are associated with dense, mature conifer and deciduous forests, interspersed with small openings. Their diet consists of a variety of small to mid-sized mammals and birds. Nests are usually found on north-facing slopes close to water in large trees. Alternative nest sites are maintained in the nesting stand. The northern goshawk breeds from March through August with a clutch size of one to five. The young are fledged by 45 days.

Suitable nesting and foraging habitat for northern goshawk may exist in the project vicinity. The nearest known occurrence (1984) is 8.7 km (5.4 mi) southeast of the project site, along Hunts Creek in a dense mixed conifer forest.

California wolverine

The California wolverine (*Gulo gulo luteus*) is a California listed threatened species and a federal species of concern. Wolverines are found in the Klamath and Cascade Mountains, as well as the Sierra Nevada south to Tulare County. In the northern Sierra Nevada, wolverines are associated with mixed conifer, red fir, and lodgepole habitats, and probably use subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. Wolverines prefer areas with low human disturbance.

Wolverines feed primarily on small mammals including ground squirrels, marmots, gophers, and mice. They also will eat carrion, insects, berries, and other invertebrates. They typically forage in open to sparse tree habitats.

Wolverines den in caves, cliffs, hollow logs, cavities in the ground and under rocks; they may dig dens in the snow, or use old beaver lodges. Breeding typically occurs from May to July with a delayed implantation. Gestation may last 215 to 272 days. The young are born in late winter and early spring from January through April. Litter size averages two to four cubs. Not all females reproduce each year.

Suitable denning and foraging habitat for wolverine may exist in the project vicinity. The nearest known documented occurrence (1973) is 2.4 km (1.5 mi) east of the project site, along a stream from Lola Montez Lake. Another occurrence (1969) is documented 4.1 km (2.5 mi) west of the project site near the Signal Peak lookout.

The only other known occurrence within a 16 km (10 mi) radius is from Sunflower Hill, northwest of French Meadows Reservoir approximately 14.5 km (9.0 mi) south of the project site.

Mule deer

The mule deer (*Odocoileus hemionus*) is common throughout the state, except in the desert and intensively farmed area. Deer will migrate downslope in winter, to areas of lesser snowfall and migrate upslope as the snow melts. Preferred habitat is a mosaic of uneven aged shrub or forested habitats with openings and water. Dense vegetation is used for escape cover and thermal regulation.

Deer are generalists and their diet varies depending on season and location. Common food groups include grasses, forbs, and shrubs, with a preference to new growth. Acorns and mushrooms are also eaten. Fawning habitat includes moderately dense shrub-lands and forests, dense herbaceous stands, and high-elevation riparian and mountain shrub habitats, with available water and abundant forage. The mule deer breeds in the fall with a gestation period of 195 to 212 days. Fawns are born from early April to midsummer depending on geographical location.

Suitable fawning and foraging habitat for mule deer exists in the project vicinity.

American marten

The American marten (*Martes americana*) is found in the Cascades and Klamath Mountains and along the Sierra Nevada south to Kern County. Martens are associated with various mixed evergreen forests with greater than 40% crown closure, with large trees and snags. Important habitats include red fir, lodgepole pine, subalpine conifer, mixed conifer, Jeffrey pine, and eastside pine.

American martens are mostly carnivorous, taking primarily small mammals such as tree squirrels, chipmunks, mice, shrews, rabbits, hares, and pikas. They are also known to eat birds, fruit, nuts, and insects. They use cavities in large trees, snags, stumps, logs, burrows and caves; they may occasionally use crevices in rocky areas for both denning and cover.

Martens breed in summer and have a gestation of 220 to 290 days, including delayed implantation. Most litters are born in early spring to early summer. Litter size ranges from one to five. Young stay with female until autumn, and then disperse. Males are sexually mature at one year, females at two years.

Suitable denning and foraging habitat for pine marten may exist in the project vicinity. There are no known occurrences within a 16 km (10 mi) radius of the project.

Pacific fisher

The Pacific fisher (*Martes americana*) is found in the Cascades and Klamath Mountains and along the Sierra Nevada south to northern Kern County. A subspecies are also found in the North Coast Ranges. Fishers are associated with late seral stage coniferous forests and deciduous riparian habitats with a high percentage of canopy cover. They will use younger stands as foraging habitat (Zielinski et al 1999).

Fishers are opportunistic feeders consuming tree squirrels, chipmunks, mice, shrews, rabbits, hares, and pikas. They also forage on birds, amphibians, reptiles, insects, mushrooms and other fungus (Zielinski et al 1999).

They use cavities in large trees, snags, stumps, logs, burrows and caves. They occasionally use crevices in rocky areas for both denning and cover. Fishers breed in summer and have a gestation of 220-290 days, including delayed implantation. Young are born in late winter to late spring. Litter size ranges from one to five, averaging at a litter of three. Young stay with female until autumn, and then disperse. Males are sexually mature at one year, females at two years.

Suitable denning and foraging habitat for Pacific fisher may exist in the project vicinity. The nearest known occurrence (1969) is 1.8 km (1.2 mi) south of the project site in a lodgepole pine forest near Fisher Lake. Another occurrence in a red fir forest is documented near Sterling Lake (1973), approximately 2.8 km (1.7 mi) north of the project site.

Mountain yellow-legged frog

The mountain yellow legged frog (MYLF) (*Rana muscosa*) is distributed more or less continuously in the Sierra Nevada from the vicinity of La Porte, Plumas County, to French Joe Meadows in Tulare County. A mountain species, the MYLF is associated with ponds, lakes, and streams in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats. They are usually encountered within a few feet of water. They feed primarily on aquatic and terrestrial invertebrates. Breeding usually occurs from June to August depending on local conditions. Clusters of eggs are deposited in shallow water, attached to gravel or submerged rocks. Larvae must over-winter up to two times for periods of six to nine months before attaining metamorphosis, and have

the ability to survive anoxic⁹ conditions when shallow lakes freeze to the bottom.

Suitable habitat for MYLF may exist in the project vicinity. Numerous small lakes exist within 16.1 km (10 mi) of the project site. The nearest known occurrence (1974) is 3.5 km (2.2 mi) west of the project site along Rattlesnake Creek.

Yellow warbler

Yellow warblers (*Dendroica petechia brewsteri*) are associated with riparian woodlands dominated by willows, cottonwoods, sycamores, or alders, or in mature chaparral, or in shrubbery in open coniferous forests. Their diet consists of insects and spiders obtained in the upper canopy. They will occasionally eat berries or hawk insects from the air (Ehrlich et al 1988). This species breeds from late spring to mid-summer with a clutch size of three to six (average four to five). Cowbird parasitism is common.

Suitable nesting and foraging habitat for yellow warbler may exist in the project vicinity. The nearest known occurrence (1984) is 10.5 km (6.5 mi) southeast of the project site in steep rocky montane chaparral habitat.

Sierra Nevada Mountain Beaver

The Sierra Nevada mountain beaver (*Aplodontia rufa californica*) typically resides in dense riparian-deciduous and open brushy forest, preferring open and intermediate canopy coverage with dense understory near water. Burrows are located in deep soils in dense thickets and are lined with dry vegetation. Mountain beaver feed on a wide variety of forbs, shrubs, and trees. Forage vegetation may be stored near the burrow entrance or in underground chambers. This species breeds from December through March. The litter size is from one to five young, with the young being born between February and June.

Suitable denning and foraging habitat may exist in the project vicinity. The nearest known occurrence is approximately 10.0 km (6.2 mi) southeast of the project site, along Cold Creek (1985) and Emigrant Canyon Creek (1987).

Black swift

Black swifts (*Cypseloides niger*) are associated with steep canyons and waterfalls. They feed exclusively on flying insects and nests in moist crevices, caves, or under

⁹ Anoxic: a condition of or relating to that which is without oxygen or greatly oxygen deficient

overhangs, which are behind or adjacent to waterfalls. Nests are built of mud and are kept moist from the spray. This Black swift breeds from early to late summer, usually in small colonies. Females lay only one egg and incubation lasts 24 to 27 days. Young are altricial or immature and need extensive care, and leave the nest in approximately 45 days.

Suitable nesting and foraging habitat for black swift may exist in the project vicinity. The nearest known occurrence (1986) is 4.1 km (2.5 mi) east of the project site at Lake Van Norden.

Avoidance and Minimization Measures: Sensitive Amphibians, Reptile Species and Mammal Species

Quality habitat exists within the project site and should provide cover, feeding, and reproduction habitat for various amphibian, reptile and mammal species. Development and implementation of a toxic material control and spill-response plan will ensure protection of various amphibian, reptile and mammal species during construction activities. The plan will include measures to prevent raw cement, concrete, concrete washings, asphalt, paint, coating materials, petroleum products, or any other substance that could be hazardous to terrestrial or aquatic life from contaminating the soil or entering watercourses. Caltrans or its contractor will clean up all spills according to the Spill Prevention and Countermeasure Plan (SPCP), and notify the CDFG of any spills and cleanup procedures.

Avoidance and Minimization Measures: Sensitive Plant Species and Vegetation Removal

Although the temporary impact to montane chaparral habitat is relatively small, avoidance, minimization, and compensatory mitigation may be required. Caltrans or its contractors will ensure that the removal or disturbance of sensitive biological resources adjacent to the construction area is avoided by installing orange construction barrier and sedimentation fencing around the construction area. The landscape architect shall coordinate with a biologist to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. The plan will focus on replanting or enhancing native habitat in the construction area.

Sensitive Avian Species

Within the project limits, quality habitat occurs for sensitive avian species and should provide temporary cover, nesting, and feeding resources for any displaced birds. For the protection of such species, the applicable federal law is the Migratory Bird Treaty

Act [(15 USC 703-711), 50 CFR Part 21, and 50 CFR Part 10]. Protection under California law is found in the California Fish and Game Code sections 3503, 3513, and 3800. During construction activities, Pre-Construction Surveys for Migratory Bird Nests will be observed. It is anticipated that bird species protected by the Migratory Bird Treaty Act may try to nest within the project area between March 1 and September 1. A qualified biologist will perform a nesting bird survey prior to the removal of vegetation. If nesting birds are present, construction activities, which interfere with nesting activities, will not be permitted, until a qualified biologist determines the nest is no longer in use.

Avoidance and Minimization Measures: Introduction or Spread of Noxious Weeds

To avoid the introduction or spread of noxious weeds into previously un-infested areas, Caltrans or its contractors will clean construction equipment at designated wash stations before entering the construction area. In order to reduce the potential of introducing invasive or non-native plant species into the project area, and to comply with Executive Order (EO) 13112 on Invasive Species, native California plant species that are appropriate for the project area shall be used. In areas of ground disturbance, erosion control measures will be implemented with sterile or certified weed-free applications. Any re-vegetation measures will specify native species appropriate to the project area.

Avoidance, Minimization and Mitigation Measures: Wetlands

The ordinary high water mark delineates the limits of the Waters of the United States within the project. Streams represent natural drainage features and fall under the jurisdiction of the Army Corps of Engineers (ACOE). As such, the project will require a Clean Water Act (CWA) Section 404 nationwide or individual permit from the ACOE, dependant on verification of jurisdictional waters. The exact quantities of rock slope protection (RSP) and fill which will impact wetland at each of the culvert systems under Corps jurisdiction have not yet been determined. Amounts are assumed minimal and will be addressed during the Nationwide permitting process. The accompanying Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board (CVRWQCB) will also be required. Work below the top of the bank in these drainages will also require a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG).

Table 3.7 Resources, Impacts and Mitigation/Minimization/Avoidance

Resource	Potential Impacts	Significance	Mitigation/Minimization /Avoidance
Fisheries	None		None
Migratory Birds, Raptors	Vegetation removal; General construction activities	Less than Significant	Pre-construction active nest search; ESA fencing around work area.
Sensitive Amphibians and Reptiles	Vegetation removal; General construction activities	Less than Significant	None
Wetlands and Waters of the United States	Vegetation removal; culvert lining and/or replacement	Less than Significant with mitigation and	ESA fencing around work area; Mitigate for temporary and permanent impacts to wetlands
Sensitive Plant Species	None		None

3.2.5 Community Impacts (Social, Economic), Environmental Justice Community Character

Placer County is one of California's fastest growing counties, characterized by high incomes and a technology-based economy. The attractions of the region include comparatively reasonably priced housing, as well as a superior quality of life. Placer County's strong growth and consequent residential development is attributed to the relocation of Hewlett-Packard and other "tech-based" companies from the San Francisco Bay Area to Roseville in the early 1980s. The resulting expansion initiated a pattern of economic development and growth. Placer County is located 129 km (80 mi) northeast of South San Francisco. The City of Auburn, which is located 193 km (120 mi) southeast of Reno, is the government center of Placer County. The county encompasses 3,900 km² (1,506 mi²) including 212 km² (82 mi²) of water; and is bounded by Nevada County to the north, the State of Nevada to the east, El Dorado and Sacramento counties to the south, and Sutter and Yuba counties to the west.

I-80 is located in the westerly portion of the Placer County; approximately 85 km (50 mi) east of Auburn and approximately 34 km (20 mi) west of Truckee. Placer County is sparsely populated and dominated by the National Forest Service Lands and seasonal ski resorts. The elevation in the immediate project area is approximately 1,829 m (6,000 ft). According to the *Interstate 80 Transportation Concept Report (TCR)*, this portion of I-80 commencing from I-80/SR 20 junction, KP 95.8 (PM 59.5) through the project limits is designated as a Federal Scenic Byway.

Within the project limits, exceptional high truck volumes, peaking at 25 percent, characterize segments of the highway. In addition, the roadway is characterized by long steep grades, increasing accident rates in difficult weather conditions, which severely limit operation within the winter months; and contribute to the Level of Service (LOS) of "E". In this case, the LOS of "E" indicates that the highway is near capacity and is characterized by very slow traffic. Furthermore, since the route is a heavily traversed gateway to the seasonal resorts of North Lake Tahoe and the gaming industry of Reno, Nevada, the referenced segment of I-80 serves as the major regional transportation routes for the movement of goods and services.

Environmental Justice

The project has been developed in accordance with Title VI of Civil Rights Act of 1964,¹⁰ as amended, and with the Executive Order (EO) 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." EO 12898 requires each federal agency (or its designee) to take the appropriate and necessary steps to identify and address "disproportionately high and adverse" impacts of federal projects on minority and low-income populations.

The project has been evaluated to determine if there are environmental justice impacts, as outlined in Executive Order 12898 and FHWA Directive 6650.23. Based on this review, the project would not result in any disproportionately high and/or adverse human health or environmental effects on minority or low-income populations. The proposed rehabilitation improvements would benefit all corridor residents, including minority or low-income populations by improving safety.

3.2.6 Cultural Resources

A pre-field literature and records search was conducted by the Northern California Information Center (NCIC) of the California Historical Resources Information System at California State University Sacramento (NCIC File No: PLA-03-4) on February 20, 2003 in order to determine the presence of and potential for cultural resources within 0.80 km (0.5 mi) of the project area and its immediate vicinity.

¹⁰ Title VI of the Civil Rights Act of 1964 states that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. As the lead agency involved with this project, Caltrans must adhere to all pertinent federal laws, regulations, and directives. The purpose of this analysis is to demonstrate Caltrans' compliance with these policies as they pertain to this project.

The following references were consulted at the NCIC:

- OHP Historic Property Directory (HPD)
- NCIC Historic Resources Map
- California Inventory of Historic Resources (State of California 1976)
- California Place Names (Gudde 1969)
- California Gold Camps (Gudde 1975)
- Department of Transportation Bridge Inventory
- California Historical Landmarks (State of California 1996)
- Points of Historical Interest (State of California 1992)
- Historic Spots in California (1990)
- 1875 and 1879 GLO Plat Maps (T17N, R13E)

All relevant technical reports and site records on file at the NCIC were examined. The literature and records search performed by the NCIC revealed that three cultural resource surveys were previously conducted within the record search boundary but outside of the APE. One historic archaeological site, an emigrant trail (CA-PLA-699H), was also identified within the record search boundary but also outside of the APE.

Native Americans

The Native American Heritage Commission (NAHC) and several members of the local Native American Community were contacted. The NAHC responded that no sacred lands were known to exist within the project area. The NAHC also provided a list of seven (see list below) Native American representatives whom were contacted by letter in January 2003.

- Rose Enos
- Shingle Springs Band of Miwok Indians
- Todd Valley Miwok-Maidu Cultural Foundation
- United Auburn Indian Community of Auburn – Sam Starkey
- United Auburn Indian Community of Auburn – Jessica Tavares
- United Auburn Indian Community of Auburn – David Keyser
- Washoe Tribe of Nevada and California

No response has been received to date.

Historical Groups

The historical groups and interested individuals listed below were also contacted:

- Placer County Department of Museums (12/31/02)
- Placer County Historical Society (12/31/02)
- Truckee-Donner Historical Society (12/31/02)
- Lincoln Highway Association (1/9/03)
- Norman Root (Lincoln Highway Association (1/9/03)

In December 2003, a response was received from Norman Root, California State Director Lincoln Highway Association. In his response, Mr. Root states that the current “project will not adversely effect the historic Lincoln Highway in any way”. However, Mr. Root requests that, as a part of this project, the Big Bend Ranger Station sign on the west end of the project be “augmented” with information regarding the Transportation Museum located at the Big Bend Ranger Station.

Identification Efforts and the Results

On November 13, 2002, Kendall Schinke and Erick Wulf surveyed the project's Area of Potential Effects (APE). The APE encompasses the maximum limits of all proposed construction activities, including both existing and proposed right of way, as well as all temporary construction easements. No new right of way will be required for this project. The APE was approved by Caltrans staff archaeologist Kendall Schinke and Project Manager Dave Lopez on February 27, 2004. No archaeological resources were identified during the Phase I surveys, the results of which are documented in the Negative Archaeological Survey Report (NASR) (Schinke 2004).

Cultural resource studies of the APE resulted in the identification of two previously undocumented cultural resources: a segment of old U.S. 40 and a telephone company substation. Both were found to be exempt under Attachment 4 of the July 2003 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the Department of Transportation (Property Type 1; isolated segments of bypassed or abandoned roads and Property Type 4; buildings, structures, districts, and sites 30 to 50 years old) by a Caltrans PQS Principal Architectural Historian. A Negative Historic Property Report was completed.

3.2.7 Geotechnical /Soils/Geology

The Geotechnical Analysis Report summarizes the infiltration testing for I-80 within the project limits, KP 106.7/110.2 (PM 66.3/68.5) in Placer County, California. At this location, Caltrans plans to construct detention or filtration basins in order to provide stormwater run-off treatment Best Management Practices (BMPs) on both sides of the westbound portion of the freeway. The project will also include adding fill to existing embankment slopes for widening mainline shoulders from 3.0 to 3.6 m (10-11 ft) at the western boundary of the project limits [i.e., the east side of Hampshire Rocks Undercrossing Bridge (No. 19-0123 L/R)]. This report includes a review of published data from the California Geological Survey (CGS) and United States Department of Agriculture (USDA), soil surveys, a site reconnaissance, subsurface exploration, and laboratory testing. The purpose of this section is to provide geotechnical analyses of site conditions, including infiltration rates, groundwater elevations, and soil classification information, upon which the design and construction criteria is predicated for the installation of detention/infiltration basins and the mainline shoulder widening

Within the project limits, I-80 consists of a four-lane roadway, paved with PCC pavement. In the project, area the roadway consists of 3.6 m (12 ft) lanes and variable paved shoulder width up to 7 m (23 ft), some of which serve as a chain off areas. There are seven culverts crossing beneath the westbound section of highway located at KP 106.86 (PM 66.4), KP106.96 (PM 66.46), KP 107.23 (PM 66.63), KP 107.58 (PM 66.85), KP 107.87 (PM 67.03), KP 108.04 (PM 67.13), and KP 108.21 (PM 67.24). Generally, the project is in an area with rugged terrain vegetated with trees, grasses, and brush. Rock Slope Protection (RSP) was observed on a number of slopes, especially at west boundary of the project limits. The South Fork Yuba River Bridge (Bridge No. 19-0105) is located at KP 109.2 (PM 67.87). There are overhead utilities throughout the project at the Rainbow Road off-ramp.

Topography and Drainage

According to the Soda Springs 7.5 Minute Quadrangle (United States Geological Survey 1979, scale 1:24,000), the site is located on the western slope of the Sierra Nevada Range. Roadway drainage at westbound I-80 is achieved through a series of shallow ditches and cross drains within the project area. This area drains into South Yuba River that crosses I-80 at approximately KP 109.2 (PM 67.87) within the project area. The South Yuba River flows in a westerly direction into Lake Spaulding located 16 km (10 mi) west of the site.

Man-made and Natural Features of Engineering and Construction Significance

There are a number of culverts crossing underneath the roadway that may have an impact on the project. The current alignment of I-80 within the project boundaries consists of cuts and fills of various heights up to approximately 10 m (30 ft) maximum. The fill slope ratios range from approximately 1:3 to 1:¾. Many have been improved with RSP. Boulders up to 2 m (6 ft) and exposed bedrock of granitic or volcanic rocks were noted within most of the proposed project limits. At the time of our investigation, numerous trees were observed at the proposed basin locations.

Regional Geology and Seismicity

According to the California Geological Survey (CGS) “*Geologic Map of the Chico Quadrangle*”(1:250,000), published 1992, the site is located in an area of Cretaceous-Jurassic Plutonic volcanic rocks, which includes following units: 1) Granite Granodiorite (Kjar); 2) Alluvium (Q)- Undivided alluvial deposits of unconsolidated gravel, sand, and silt; and 3) Glacial Deposits (Qg) – Undivided glacial till moraine, and outwash deposits.

Based upon review of the map entitled CGS *A General Location Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos* (August 2000) The map reviewed does not indicate deposits of ultramafic rocks at the site. Furthermore, no ultramafic rocks were observed during the site visit.

We have reviewed the *Caltrans California Seismic Hazard Map* dated 1996. The map indicates that the Melones Fault is located approximately 23.2 km (14.4 mi) west of the site and could produce a maximum credible earthquake of magnitude 6.5. This fault has a normal-oblique style. The map indicates that the maximum credible earthquake from this site would result in a peak site bedrock acceleration of 0.20g. Bedrock at the site is at or near the ground surface.

Drilling and Sampling

The drilling and sampling portion of this project was performed on October 11 through October 17, 2002. Fourteen samples, with two from each boring, were obtained for the soil type classification and the related chemical tests. In general, the soil at the proposed basin locations consisted of light brown silty sand with fine to coarse gravels and cobbles in a moist state. Boulders or bedrock was also encountered at a very shallow depth at most drilling locations. Perched groundwater was encountered at a depth of 0.8 m (2.6 ft) roadway elevation in the project area

ranges from approximately 1850 m (6070 ft) above mean sea level (MSL) below ground surface in Boring PB3-1. In the general vicinity of the project, cut slopes in mixed granitic rock were observed to be performing well with respect to slope stability. Cut slopes in the area were observed as flat as 1:2 and as steep as 1:3/4. The existing fill slopes were observed to be 1:1 or flatter in the project area and many of those slopes have been improved with RSP. Cobbles and boulders up to 2 m (6 ft) and exposed bedrock were noted within the most of the proposed project limits. Minor erosion of the cut and fill slopes was noted during the site visit.

Geotechnical Recommendations for Basin Design and Water Quality Compliance

The existing slopes have been described above. Fill slope for mainline shoulder widening would be constructed at a slope ratio of 1:2 or flatter. All fill slopes should be keyed and benched into the existing slope in accordance with Section 19 of the Standard Plans. Sliver fills are not recommended.

Infiltration tests were performed on October 16 and 17, 2002. The tests were performed on holes advanced to depths of 0.7 m (0.21 ft) to 1.2 m (0.36 ft) below existing site grade within the footprint of the proposed detention basins. The readings for these tests were taken after saturating the test holes overnight and refilling the holes with relatively clean water before the tests were started. The rate of water level drop was monitored until stabilized infiltration rates were obtained. The results of the infiltration tests are presented in the table below:

Table 3.8 Boring Percolation Rate Data

Boring	Perc. Rate gal/ft ² /day	Perc. Rate l/m ² /day	Perc. Rate mm/hour	Perc. Rate in/hour	Station (metric)	Distance from CL (m) of Westbound	Date Tested
DB1-1	4.9	200	170	7	1070+40	13 Right	10/17/02
DB1-2	8.0	320	480	19	1070+60	12 Right	10/17/02
DB3-1	7.0	290	510	20	1076+30	14 Right	10/16/02
DB5-1	260	10,500	11,700	460	1080+80	19 Right	10/16/02
DB7-1	100	4,500	4,900	194	1083+90	26 Right	10/16/02
DB9-1	250	10,100	3,050	120	1097+30	12 Left	10/16/02
DB10-1	80	3,300	850	33	1099+60	16 Left	10/16/02

Relatively clean water was used to perform the tests above. However, highway runoff materials and cold weather conditions will decrease the infiltration rates. During the time the ground is frozen, the infiltration rates will be near zero. In addition, the soil

profile to the depths explored, in general, seemed to indicate a relatively shallow, loose granular layer at the ground surface over bedrock. Due to this stratigraphy it is reasonable to expect a substantial horizontal component of permeability, and the proposed basins should be designed accordingly. Finally, changes in soil index properties during construction (density, water content, fines content, etc.) will likely alter the permeability of the soils. As indicated in the Table 8 above, each of these tests exceeded the minimum infiltration rates as outlined in the Storm Water Quality Practice Guidelines. Tests performed on Borings DB1-1, DB1-2, DB3-1, DB5-1, DB7-1, DB9-1 and DB10-1 significantly exceeded 63.5 mm per hour (2.5 in per hour). Under these conditions, the guidelines recommend the District contact the Regional Water Quality Control Board (RWQCB) in order to demonstrate that the groundwater quality will not be compromised.

3.2.8 Hazardous Materials

Based upon the Caltrans the Initial Site Assessment (April 23, 2001) and the Preliminary Site Investigation (September 13, 2003) entitled *Aerially Deposited Lead (ADL) Investigation and Bridge Survey Report*, the following hazardous waste issues have been delineated.

Asbestos material exists in the joint sheet packing material at the Troy Bridge Undercrossing and the westbound portion of the Kingvale Bridge Undercrossing Bridge. Should this material be disturbed or require disposal, the *Aerial Lead Site Investigation and Bridge Survey Report (July 2002)* outlines estimated costs and recommended regulatory procedures that will be followed. Draft special provisions can be found at <http://northregion/Planning/envintranet/hazprov.htm> as examples for the construction contract. The PE should request final specifications from the NRHWO two months before Plans and Engineering (P & E).

The ADL investigation evaluated the presence of lead deposition from motor vehicle exhausts on the surface soils within the project boundaries. ADL does exist within the project boundaries and final specifications should be requested by the PE from the North Region Hazardous Waste Office (NRHWO) two months before P & E.

It is understood that this project involves PCC overlay of the existing roadway. Should any removal of the yellow traffic stripe in the existing portion of the roadway occur it is important to note that it may contain heavy metals such as lead and chromium, which may exceed hazardous waste thresholds established by the California Code of Regulations (CCR). This material may also produce toxic fumes

when heated. To avoid dealing with this potential issue, it is advisable to grind the roadway in its entirety as opposed to just removing the yellow paint stripe. If it is not feasible to grind the roadway in its entirety, then the removed yellow traffic stripe material shall be disposed of at a Class 1 disposal facility.

3.2.9 Hydrology and Water Quality

The project is located within the western slopes of the Sierra Nevada Mountains. The up-gradient watershed tributary areas are primarily forested with extensive rock outcroppings. These rocky surface areas are stable and typically unsusceptible to excessive erosion. The USGS (United States Geological Survey) Soda Springs and Cisco Groves quads, in the Hydrologic Sub-Area (HSA # 517.34) on the west side of the Sierra Nevada Mountains include a section of the South Yuba River from Kingsvale to Hampshire Rocks. This HSA covers an area of 37,737 ha (93,247 ac) with an average annual rainfall of 1839 mm (72.4 in). Caltrans maintains three maintenance stations, two rest areas, and 36.6 km (22.8 mi) of freeway within this HSA. The estimated Caltrans area within this HSA is approximately 0.5% of the watershed area and contributes about 2.3% of the total runoff. The Yuba River is located on the west side of the Sierra Nevada Mountains of northern California. The South, Middle, and North Forks of the Yuba River make up the Yuba River Watershed. The watershed is bordered by the basins of the Feather River to the north, the Truckee River to the east, and the Bear River and American River to the south. The North Fork of the Yuba River flows into New Bullards Bar Reservoir and is joined by the Middle Fork about 8 km (5 mi) downstream from the 196 m (645 ft) New Bullards Bar Dam. The South Yuba begins with runoff near Donner Pass high in the Sierra Nevada. Its source is Lake Angela at 2191 m (7190 ft). The South Yuba runs for 102 km (64 mi) before joining the other two forks at Englebright Reservoir to form the main stem of the Yuba River.

The South Yuba River, which flows parallel to I-80 throughout the western portion of the project is composed of bedrock and large structural fill material, indicating that the riverbed is quite stable; and thus, there is a low probability that the river course will be altered (i.e. meander, aggraded, or degraded) by construction within the project area.

The Central Valley Region Water Quality Control Plan (Basin Plan) designates the following beneficial uses for this section of the Yuba River (sourced to Englebright Reservoir): 1) Municipal and domestic, 2) Irrigation, 3) Watering, 4) Industry, 5) Recreation (contact), 6) Recreation (non-contact), 7) Freshwater habitat (cold), 8)

Spawning (cold), and 9) Wildlife habitat. The Basin Plan also states that waters designated for domestic or municipal use shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the Title 22 of the California Code of Regulations. Furthermore, Section 303(d) of the Clean Water Act require states to identify waters that do not meet, or are not expected to meet, water quality standards. Theses water bodies are considered “water quality-limited” and are reported by States on the 303(d) list. This section of the Yuba River within the project limits is not on the 303(d) list.

Mitigation

Best Management Practices (BMPs) will be implemented to minimize the potential for the surface discharge of muddy water downstream from the culvert repair sites. Construction related water pollution from vegetation removal, construction activities in and adjacent to the affected drainage/culverts, as well as the potential transport of petroleum products associated with use of heavy equipment will be minimized.

The contractor will be required to construct the project in compliance with all applicable water quality standards (including those of the Central Valley Region Water Quality Control Board). To address construction related water pollution, Caltrans’ Standard Specifications will require the Contractor to submit a Water Pollution Control Plan (WPCP) for all activities that impact less than 0.40 ha (1 ac). This WPCP must meet the standards and objectives to minimize water pollution impacts set forth in appropriate sections 7-1.01G of Caltrans' Standard Specifications. If more than 0.40 ha (1 ac) is impacted by construction activities, then Caltrans will submit a Storm Water Pollution Prevention Plan (SWPPP).

If construction activities create a visible plume on surface waters, Caltrans' Standard Specifications and mitigation measures shall be implemented immediately. Potential mitigation measures include minimizing the disturbance of soil, streambed gravels; as well as, constructing a silt barrier immediately downstream of the construction area. All temporary fills required for the stream crossing/work platform will be removed upon completion of in-stream work activities. Erosion control measures will be implemented at any of the sites requiring vegetation removal or ground breaking and may include the use of organic mulch and/or seeding or plantings. The Office of Landscape Architecture shall coordinate with a biologist in the Office of Environmental Management to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. Any additional measures included in the 1601 Streambed Alteration Agreement, Army Corp of Engineers (ACOE) 404 permit,

and the Regional Water Quality control Board 401 certification will be included in mitigation efforts.

3.2.10 Floodplain

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel 06061C 0050F for Placer County indicates that the current I-80 alignment within the project area parallels the floodplain for the South Yuba River, east of the Hampshire Rocks Undercrossing on-ramp to the South Yuba River Bridge. The physical configuration and composition of the structural elements of the existing highway embankments and the significant difference in the elevation between the highway and the active streambed create a non-distinct floodplain interface. Furthermore, because of the limited nature of the proposed work, it is not anticipated that the project will adversely impact the local floodplain, provided that the new embankment fill is placed at slopes of 1:2 and 1:1.5; and the new embankment catches the existing embankment slope prior to entering the active river channel. The proposed improvements to the existing culverts will meet the Water Quality Board mandated storm water treatment objectives. Furthermore, since the proposed project will widen existing shoulders from 3.05 to 3.6 m (10 ft to 11.5 ft) to facilitate staging and to accommodate future lane construction, additional thin wedges of fill material will be required to form the highway structural section. Fill will be placed in such a manner as to minimize encroachment upon the Yuba River floodplain.

3.2.11 Land Use Planning

U.S. Forest Service Lands, Timber Preservation Zones, Open Space (OS) area are prominent land uses in the project area. Zoning designations are rural residential, commercial, timberland and agricultural. Within the project limits, the Rainbow Resort is located near the Hampshire Rock Road close to the Rainbow Road exit (KP 106.2 [PM 66.0]). The Kingvale U.C. Donner Trail School is located on Donner Pass Road, approximately 1.6 km (1 mi) east of the Rainbow Road ramp. The Kingvale Tubing and Sledding Center and a local gas station/convenience store are located on the south side of the Kingvale Undercrossing. In addition, there are several seasonal ski resorts (e.g. Donner Ski Ranch, Royal Gorge and Soda Springs, and Sugar Bowl) located close to the Soda Springs-Norden junction, which is 2.42 km (1.5 m) east of the project limit in Nevada County.

Because of the proposed project, there will be a “sliver-take” partial acquisition of one publicly owned parcel. The acquisition will occur near the Hampshire Rocks Road Undercrossing-Rainbow eastbound on-ramp. According to the Placer County Assessor records, the affected parcel is currently designated for Open Space (OS) and has a public land use designation. The right-of-way required for the proposed project will not impact land use patterns.

There could be some impact from temporary construction easements (TCE). Caltrans uses TCEs for the movement and storage of construction equipment and materials. Any impact from TCEs is expected to be temporary. Placement of TCEs and construction equipment access points for the proposed project is expected to be planned strategically by the Caltrans Project Design team to minimize conflicts with property usage and traffic circulation.

To address traffic circulation impacts, one lane of traffic is expected to remain open on I-80 while construction is occurring on the impacted freeway lane. Traffic Management Plans (TMP) requires all lanes to remain open on Friday, Saturday and Sunday. The Rainbow Road eastbound ramp is expected to remain closed during construction. Access to eastbound ramp at the Rainbow Road area will to be available via Donner Pass Road, (frontage road on the north side of I-80).

Since the proposed project is part of series of corridor safety and operational improvement projects, similar construction was completed approximately a year ago on this segment of I-80 east of Kingvale in Nevada County. By curtailing construction on weekends and during peak period traffic, the project reduced the traffic delays and inconvenience to the public.

The proposed project is listed in the SHOPP portion of the State Transportation Improvement Program (STIP). In addition, it is included in the Regional Transportation Planning Agency of Placer County’s SHOPP project list. Furthermore, the project is also consistent with land use, zoning and planning ordinances and provisions within the Placer County General Plan, which has established goals, policies and environmental thresholds relating to the impact of all environmental resources and community development. The project is also consistent with the November 1995 Nevada County General Plan.

3.2.12 Mineral Resources

The project would not result in the loss of any known or locally important mineral resource that would be valuable to the region and the residents of the state.

3.2.13 Noise

This project is not a Type I project as defined by Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*. A Type I project is defined by 23 CFR 772 as a proposed Federal or Federal-aid highway project for the construction of a highway which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. No further analysis is required.

3.2.14 Population and Housing

The project would not induce substantial population growth nor would it displace existing housing, people or businesses. No avoidance, minimization or mitigation is required.

3.2.15 Recreation

The project would not increase the use of existing neighborhoods and regional parks nor other recreational facilities. No substantial physical deterioration of the recreational facility would occur or be accelerated. No avoidance, minimization or mitigation is required.

3.2.16 Section 4(f)

The project will not result in the use of any publicly owned land from a park, recreation area, or wildlife and waterfowl refuge; the project will not affect an archaeological or historic site, structure, object, or building or involve constructive use as defined by Section 4(f) (23 CFR 771.135). No avoidance, minimization or mitigation is required.

3.2.17 Traffic

A Traffic Management Plan will be developed to address the traffic re-direction strategies within the project limits. Because concrete overlays will require extensive curing time, traffic cannot be readily routed back onto newly installed pavement at the end of each workday. In addition, since I-80 is a major recreational route, two lanes of traffic must remain open from Fridays through Sundays. As a result, this project will be constructed by shifting traffic to one side of the traveled way, while

paving half the lane width. To enhance travel through the construction zone, a 3.6 m (10 ft) width shoulders will be constructed to provide an additional 0.6 m (2.0 ft) width for handling traffic. The extra 0.6 m (2.0 ft) will provide a buffer between the traveled way and the edge of pavement. Hampshire Rocks Undercrossing (KP106.7 [PM 66.3]) ramps will be closed for a period of 4 to 7 days. Traffic will be detoured to the Kingvale Interchange via Donner Summit Road.

3.2.18 Pedestrian, Bicycle Facilities and Signage

During construction, pedestrian and bicycles will be prohibited from using I-80 throughout the project limits. Regulatory signing will be placed, such that pedestrians and bicycles will be required to use the adjacent Old Highway 40. An existing two post overhead sign on westbound I-80, just west of the Hampshire Rocks Overcrossing will be removed and replaced with a single post overhead sign at approximately the same location. Single post overhead action signs will be added at both the eastbound and westbound exits at Rainbow Road, replacing existing ground mounted signs.

3.2.19 Utilities/Emergency Services

Overhead utilities were noted within the project limits at the off-ramp of Rainbow Road off-ramp. Underground utilities that were not readily apparent may exist within the project boundaries. Existing services will not be adversely affected by the proposed project. During construction, a traffic management plan will be implemented. Caltrans will notify fire, law enforcement, and emergency medical services of the construction schedule and of any planned or potential detours or lane closures.

3.2.20 Mandatory Findings of Significance

The Council on Environmental Quality (CEQ) guidance defines cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions” (40 CFR § 1508.7). Environmental cumulative effects occur when the environment does not have enough time to recover to its original condition before another outside action takes place to affect the environment.

The term *direct effects* represents the immediate impacts associated with the project. All direct effects can be minimized, avoided or mitigated as outlined in preceding chapters. Conversely, the term *indirect effects* refer to the chronic impacts, which

manifest in the long-term, and are reasonably certain to occur. Since the project will not add additional lanes for through-traffic and will not have growth inducing effects within the area, indirect effects are not anticipated.

Where relevant information could be obtained, *cumulative* effects include direct and indirect impacts associated with development in the project area. Cumulative impacts result from incremental environmental effects from other geographically contiguous past, present, and reasonable foreseeable future projects. A number of highway improvement projects are proposed within the project area and address existing congestion and safety concerns while providing for inter-regional transportation needs. These improvements will accommodate planned development, and are not expected to accelerate conversion of agricultural and open space lands to other uses.

Within the project area, two highway improvement projects are proposed that address existing safety concerns while providing for inter-regional transportation needs. The future Caltrans projects within a 16 km (10 mi) of the I-80 rehabilitation project are: 1) the Nyack Roadway Rehabilitation Project, which proposes bridge replacement, median barrier installation, and rehabilitation of a vista point and drainage improvements (EA: 03-4A700); and 2) the Eagle Lakes Chain-off Project, which proposes construction of a new chain-off area and installation of changeable message signs at the Cisco Grove westbound on-ramp (EA:03-3C930). Both safety improvements projects are necessary to prevent further facility deterioration and enhance safety. The aforementioned projects' contribution to cumulative impact is minimal.

3.3 Mitigation Measures/Commitments and Permits Required

3.3.1 Mitigation Measures

Wetland Mitigation Measures

Executive Order 11990 establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U. S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, impacts to wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific Wetlands Only Practicable

Alternative Finding in the final environmental document. An additional requirement is to provide early public involvement in projects affecting wetlands. FHWA provides technical assistance in meeting these criteria (FHWA Technical Advisory 6640.8A) and reviews environmental documents for compliance.

Sensitive Species

Although the temporary impact to montane chaparral habitat is relatively small, Caltrans will avoid, minimize, and compensate for impacts by implementing mitigation measures. Caltrans or its contractors will ensure that the removal or disturbance of sensitive biological resources adjacent to construction is avoided by the installation of orange construction barrier fencing and/or sedimentation fencing around the construction area. A landscape architect shall coordinate with a biologist to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. The plan will focus on replanting or enhancing habitat in the construction area.

Quality habitat supporting mammal species exists next to the project site and should provide cover, feeding, and reproduction habitat for various mammal species. Avoidance measures will ensure protection of various sensitive mammal species during construction activities. A toxic material control and spill-response plan will be implemented. The plan will include measures to prevent soil/water contamination by eliminating the surface transport of raw cement, concrete/concrete washings, asphalt, paint, coating materials, oil, petroleum products, or any other substance that could be hazardous to terrestrial or aquatic life. Caltrans or its contractors will clean up all spills according to the Spill-Prevention and Countermeasure Plan (SPPCP) and immediately notify the California Department of Fish and Game (CDFG) of any spills and cleanup procedures.

Hazardous Waste

Asbestos exists in the joint sheet packing material of the Troy Bridge Undercrossing and the westbound Kingvale Bridge Undercrossing Bridge. Should this material be disturbed or require disposal, the *Aerial Lead Site Investigation and Bridge Survey Report (July 2002)* outlines regulatory procedures that will be followed. An Aerially Deposited Lead (ADL) investigation was conducted to evaluate whether impacts due to ADL from motor vehicle exhaust exists in the surface and near surface soils within the project boundaries. As such, ADL does exist within the project boundaries and final specifications will be requested by the Project Engineer (PE) from the North

Region Hazardous Waste Office (NRHWO) two months before Plans and Estimates (P & E).

This project involves PCC overlay of the existing roadway. Should any removal of the yellow traffic stripe in the existing portion of the roadway occur, it is important to note that it may contain heavy metals such as lead and chromium, which may exceed hazardous waste thresholds established by the California Code of Regulations (CCR). This material may also produce toxic fumes when heated. To avoid dealing with this potential issue, it is advisable to grind the roadway in its entirety as opposed to just removing the yellow paint stripe. If it is not feasible to grind the roadway in its entirety, then the removed yellow traffic stripe material shall be disposed of at a Class I disposal facility.

Visual Resources

Because of construction activities, there will be moderately high impacts to the aesthetic quality of the project. Visual impacts will include the removal of existing vegetation for placement of the water quality basins, excavation and embankment slope construction. In addition, there will be potential impacts to the South Yuba River riparian corridor by the removal of vegetation and on-going soil erosion resulting from the bridge modification activities and new embankment slope construction. However, the following measures will be implemented to minimize visual impacts and improve the visual quality of the highway within the project area:

- All disturbed areas shall utilize temporary erosion control measures during construction to minimize permanent impacts to visual quality.
- All areas disturbed during the construction shall receive permanent erosion control measures. All finished sloped and contour graded areas shall be hydro-seeded with a permanent seed mixture composed of native plant species.
- All wood debris generated from clearing and grubbing operations shall be chipped and stockpiled for later use in areas requiring erosion control measures.
- Effort shall be made to minimize negative impacts to native vegetation and rock outcropping in the design and construction phases. Design shall minimize cut-fill limits whenever possible to avoid unnecessary disturbance of existing terrain.
- Finished slopes shall reflect sensitivity to the natural site topography. Newly constructed slopes shall be cut to mimic adjacent natural rock formations, where feasible.

- At the termination of construction, all areas used for staging, access or other construction activities shall be contour-graded to reflect the surrounding topography. Select boulders and logs removed for earthwork operations shall be stockpiled and strategically placed back into contour graded areas, as a means of enhancing visual integration into the surrounding landscape.
- All new drainage facilities using galvanized steel material shall be treated with a stain to reduce glare or located to minimize visual exposure from roadway vantage points.
- Water quality improvements shall avoid the use of concrete/asphalt lined basins and ditches. Water quality improvement features shall be earthen or rock lined when possible. Construction of features with harsh angles and steep slopes (1: 2 or flatter side slopes) will be avoided. Basins shall be located to minimize the negative visual impacts to motorists.

Migratory Bird Treaty Act (16 U.S.C. 703-711)

The Migratory Bird Treaty Act [(16 USC 703-711), 50 CFR Part 21, and 50 CFR Part 10] is the federal law that protects avian species. Furthermore, protection under California law is found in the Fish and Game Code, sections 3503, 3513, and 3800. Because quality habitat is present adjacent to the project site for sensitive avian species, this habitat should provide temporary cover, nesting, and feeding for any displaced avian species. In addition, because it is anticipated that migratory birds may try to nest within the project area between March 1 and September 1, a qualified biologist will conduct pre-construction surveys for migratory bird nests. If nesting birds are present, construction activities, which interfere with avian nesting will cease until a qualified biologist determines that the nests are no longer in use.

Executive Order (EO) 13112, Control of Invasive Species

Throughout the project site, invasive exotic plants were identified, and are considered noxious weeds by the Federal Department of Food and Agriculture (FDFA). Executive Order 13112 requires any federal agency action to combat the introduction or spread of invasive species in the United States. To avoid the introduction or spread of noxious weeds into previously non-infested areas, Caltrans or its contractors will implement re-vegetation measures for all disturbed soils, including the use of native species, soil amendments, and “weed free” mulch. All areas disturbed by construction will be treated with a seed mix comprised of local native grasses. Mulches used on the project will be from source materials that will not introduce exotic species. In wetland areas, only native grasses will be used. Soils will

be amended with compost containing long-term soil nutrients and slow-release organic fertilizers to provide nutrients over the first year.

Water Quality

In order to address permit compliance, appropriate selection of both structural and non-structural control measures will be implemented to reduce the discharge of pollutants from construction operation of the rehabilitation project. To comply with the provisions in the National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 99-06-DWQ) to prevent water pollution, the following activities will be implemented during construction:

- The project shall adhere to the conditions of the Caltrans Statewide NPDES Permit (CAS # 000003, Order # 99-06-DWQ), issued by the State Water Resources Control Board. Adherence to the compliance requirements of the NPDES General Permit CAS # 000002, Order # 99-08-DWQ, for General Construction Activities is also required if the construction activity disturbs more than 0.40 hectare (ha) (1 acre (ac)) of soil.
- The project indicates that the amount of disturbed soil during the construction phase would exceed 0.4 ha (1 ac) of land; therefore, Standard Special Provision 07-345 shall be included in the Plans, Specification and Estimates (P S&E) to address water pollution control measures.
- Construction projects with a disturbed area of more than 0.40 ha (1 ac) are covered under the NPDES General Permit and require a Storm Water Pollution Prevention Plan (SWPPP) containing effective erosion and sediment control measures. These measures will address soil stabilization practices, sediment control practices, tracking control practices, and wind erosion control measures. In addition, the SWPPP must include non-storm water controls, waste management and material pollution controls.
- Incorporation of permanent stormwater runoff treatment measures, such as detention basins will be implemented to control pollutants resulting from normal highway operations.
- A report of Notification of Construction (NoC) shall be submitted to the Central Valley Regional Water Quality Control Board (CVRWQCB) at least 30 days prior to beginning construction:
- The District Hydraulics Branch Office maintains a listing of areas that are sensitive to accidental spills that will cause discharge directly to municipal or domestic water supply reservoirs, groundwater percolation facilities, or related

tributaries. If a Caltrans project is located within the watershed of these high-risk areas, Caltrans or its contractor shall make documented efforts to implement control measures that eliminate, intercept spills, and minimize construction events that cause spills.

- Special care is required when handling and storing contaminated soil, including soil contaminated with Aerially Deposited Lead (ADL). The quantity of soil, its level of contamination, storage, and when this activity will take place (winter/summer) are all water pollution concerns and should be described in detail in appropriate section of Special Provisions and should be addressed in the SWPPP. Section H.9 of the Caltrans Statewide NPDES Permit requires notification of the CVRWQCB if the project involves reuse of ADL contaminated soil, 30 days prior to advertisement for bids. This is to allow the CVRWQCB to determine any need for the development of Waste Discharge Requirements (WDR).
- To address the potential presence of chromium in Portland Concrete Cement (PCC) grindings, a separate WDR from CVRWQCB will be required for the discharge of the waste generated by the PCC grinding operation. Analytical tests will be performed and plans developed to demonstrate that the encapsulation and burial of the PCC grinding waste within the Caltrans right-of-way would not pose a threat to water quality. A waiver of WDR may be obtained by demonstrating that the evaporated PCC grinding waste is inert. The waste may be hauled to a landfill if chemical analysis demonstrates that the landfill design will support the deposition of the PCC waste.

If construction activities create a visible plume on surface waters, Caltrans' Standard Specifications and mitigation measures shall be implemented immediately. Potential mitigation measures include minimizing the disturbance of soil, streambed gravels; as well as, constructing a silt barrier immediately downstream of the construction area. All temporary fills required for the stream crossing/work platform will be removed upon completion of in-stream work activities. Erosion control measures will be implemented at the sites requiring vegetation removal or groundbreaking activity, and may include the use of organic mulch and/or seeding and plantings. The Office of Landscape Architecture shall coordinate with a biologist in the Office of Environmental Management to prepare an erosion control and re-vegetation plan for areas disturbed by construction activities. Any additional measures included in the 1601 Streambed Alteration Agreement, Army Corp of Engineers (ACOE) 404 permit, and the Regional Water Quality Control Board 401 certification will be included in mitigation efforts.

Furthermore, since the proposed project will widen existing shoulders from 3.0 m to 3.6 m (10 ft to 12.0 ft) to facilitate staging and to accommodate future lane construction, additional fill material will be required to form the highway structural section. Fill will be placed to such a manner, as to minimize encroachment upon the Yuba River floodplain.

3.3.2 Permits and Agreements Required

The following section outlines permit that are required. Caltrans Environmental Management Division will obtain permits prior to the beginning of construction.

Clean Water Act (33 U. S. C. 1251-1376)

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 401: The CWA Section 401 requires that an applicant for a CWA Section 404 permit obtain a Section 401 certification when the project activity will result in discharges to navigable waters of the United States. The Regional Water Quality Control Boards administer the certification program in California.

Section 404: The CWA Section 404 establishes a permit program administered by ACOE, which regulates the discharge of, dredged or fill material into waters of the United States (including wetlands). The ACOE implementing regulations are found in 33 CFR Parts 320-330. The implementation guidelines are referenced in the CWA, Section 404 (b)(1) and were developed by the U.S. Environmental Protection Agency (USEPA) in conjunction with ACOE (40 CFR Parts 230). The Guidelines state that the discharge of dredged or fill material will be allowed into aquatic systems only if there is no practicable alternative with less environmental impact.

National Pollutant Discharge Elimination System (NPDES)

NPDES Permits are required for point source discharges to waters of the US. The USEPA has that determined that non-point discharges (i.e. urban runoff) also needed to be regulated in accordance with the Clean Water Act. Caltrans storm water discharges are considered non-point source discharges. Caltrans has a Statewide NPDES Permit Order No. 99-06-DWQ, NPDES No. CA 2000003.

California Fish and Game Code Sections 1601-1603

1601 Streambed Alteration Agreement:

Under above listed sections of the Fish and Game Code, Caltrans and other agencies are required to notify the Department of Fish and Game (DFG) of any project, which will divert, obstruct or alter riverbeds, stream channels or impact the bank of any river, stream or lake. When an existing fish or wildlife resource is adversely affected, DFG is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Section 1601 Streambed Alteration Agreement.

Chapter 4 **Comments and Coordination**

4.1 Agency Coordination

The following agencies were consulted regarding the proposed project:

- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- U.S. Army Corps of Engineers
- Native American Heritage Commission
- California State Historic Preservation Officer

4.2 Public Interaction and Comments

Caltrans will mail the draft Initial Study/Environmental Assessment (IS/EA) to all appropriate parties and agencies, including the following: 1) Responsible agencies, 2) Trustee agencies that have resources affected by the project, and 3) other state, federal, and local agencies which have regulatory jurisdiction, or that exercise authority over resources which may be affected by the project. Furthermore, the draft environmental document will be sent to cities or counties within, and bordering on the project limit. It will be mailed to local, state and federal elected officials, environmental organizations, neighborhood groups, community non-profit agencies and the local chamber of commerce. Copies of document will be made available to the general public at the Nevada County Library, Truckee Branch, 10031 Levone Avenue, Truckee, CA 96161. Copies will also be available at the Caltrans District 3 - North Region Environmental Division, Office of Environmental Management at 2389 Gateway Oaks Drive, Suite 100, Sacramento, CA 95833.

After the draft environmental document has been circulated to the public, all parties have 30 days to send comments to the Caltrans District 3 Office of Environmental Management. After the 30 days, Caltrans will review all comments. If the initial public notification generates sufficient interest to warrant a public forum, Caltrans will hold an open public house or public meeting to address comments and concerns from the audience.



Chapter 5 **List of Preparers**

This document was prepared by the staff California Department of Transportation (Caltrans), North Region Office of Environmental Management. The following staff prepared this document:

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regulation, and consulting. Contribution: project coordination and preparation of the Environmental Assessment/Initial Study.

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Benjamin Tam, Transportation Engineer; B.S. Civil Engineering, San Jose State University, 12 years experience preparing Air Quality/Noise Reports. Contribution: preparation of the Air Quality and Noise Reports.

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Appendix A Title VI Policy Statement

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July 26, 2000

TITLE VI POLICY STATEMENT

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

A handwritten signature in black ink that reads "Jeff Morales".

JEFF MORALES
Director



Appendix B Aerial Layouts(L1- L16)
