

ED-89 PM 18.0–24.9 Water Quality Improvements Project

State Route 89 Eagle Falls Viaduct to Meeks Creek
EL DORADO COUNTY, CALIFORNIA
DISTRICT 3–ED–89, PM 18.0/24.9
03-1A8440

Initial Study with Proposed Negative Declaration



**Prepared by the
State of California Department of Transportation**



May 2008

GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of the alternatives being considered for the Project, located in El Dorado County, California. The document describes why the Project is being proposed, the existing environment that could be affected by the Project, and the potential impacts from the Project.

What you should do:

- Please read this Initial Study. Additional copies of this document, as well as its supporting technical studies, are available for review at the California Department of Transportation North Region Office of Environmental Management, 2800 Gateway Oaks Drive, Sacramento, CA 95833; and at the California Department of Transportation District 3 Office, 703 B Street, Marysville, CA 95901. A copy of the Initial Study is also available at the South Lake Tahoe Branch of the El Dorado County Public Library, 1000 Rufus Allen Boulevard, South Lake Tahoe, CA 96150.
- The document is also available for review at the following website by visiting <http://www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm> and clicking on the El Dorado County icon.
- We welcome your comments. If you have any comments regarding the Project, please send your written comments to Caltrans by the deadline.
 - Submit comments via postal mail to:
Jody Brown
Environmental Branch Chief
Attn: Brenda Powell-Jones
California Department of Transportation
2800 Gateway Oaks Drive
Sacramento, CA 95833
 - Submit comments via email to brenda_powell-jones@dot.ca.gov.
- Submit comments by the deadline: June 27, 2008.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans may: (1) give environmental approval to the 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 can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to the California Department of Transportation, Attn: Brenda Powell-Jones, Office of Environmental Management, 2800 Gateway Oaks Drive, Sacramento, CA 95833; call (916) 274-5911; or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice), or 711.

State Route 89 Water Quality Improvements Project
State Route 89 Eagle Falls Viaduct to Meeks Creek, PM 18.0 to PM 24.9
El Dorado County, California

INITIAL STUDY with Proposed Negative Declaration

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

Caltrans proposes to implement water quality improvement measures along a segment of State Route 89 in El Dorado County to comply with National Pollutant Discharge Elimination System permit requirements and implement elements of the Lake Tahoe Basin Environmental Improvement Program. Potential impacts are described, especially with regard to traffic and circulation (temporary impacts), visual resources, wetlands, sensitive habitats, and plant and wildlife species.

THE STATE OF CALIFORNIA
Department of Transportation

May 20, 2008
Date of Approval

John D. Webb
John D. Webb
Chief, Office of Environmental Services—South
California Department of Transportation

Proposed Negative Declaration

Pursuant to: Division 13, California Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to improve the quality of stormwater runoff by collecting and treating the stormwater runoff from State Route 89 by implementing the following improvements where feasible and warranted: rehabilitating existing drainage systems and installing new drainage systems, including stormwater basins, vegetated swales and water conveyance systems; deploying treatment best management practices; providing rock slope protection; constructing rock energy dissipaters for erosion control; regrading driveways; revegetating bare or erodible areas; where permitted by the Regional Water Quality Control Board and the Tahoe Regional Planning Agency, allowing sheet flow off of roadways to allow the spreading and subsequent infiltration of runoff water where feasible in stream environment zone (SEZ) areas; placing asphalt-concrete overlay (1.8 inches); digging out failed pavement sections; and lining or replacing culverts in poor condition.

Determination

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

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

The Project would have no impacts on agricultural resources, mineral resources, population and housing, public services, and recreation.

In addition, the Project would have no significant impacts on aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, transportation and traffic, and utilities and service systems.

John D. Webb
Chief, Office of Environmental Services—South
California Department of Transportation

Date

Table of Contents

	Page
Table of Contents.....	i
List of Tables and Figures	iii
List of Abbreviated Terms.....	iv
List of Technical Studies Available.....	vii
Chapter 1 Proposed Project.....	1-1
1.1 Location.....	1-1
1.2 Purpose.....	1-1
1.3 Need.....	1-2
1.3.1 Tahoe Regional Planning Agency	1-2
1.3.2 Executive Order 13057 and State and Regional Commitments	1-2
1.3.3 National Pollutant Discharge Elimination System Permit Requirements.....	1-3
1.4 Proposed Project.....	1-4
1.4.1 Construction Phasing, Access, Staging Areas, and Methods	1-5
1.4.2 Traffic Management and Public Involvement Plans	1-5
1.5 No-Build Alternative (No Action).....	1-6
1.6 Permits and Approvals Needed	1-7
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization and/or Mitigation Measures.....	2-1
2.1 Human Environment.....	2-2
2.1.1 Land Use	2-2
2.1.2 Community Impacts	2-13
2.1.3 Emergency Services	2-14
2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities.....	2-15
2.1.5 Visual/Aesthetics.....	2-18
2.1.6 Cultural Resources	2-27
2.2 Physical Environment.....	2-30
2.2.1 Hydrology and Floodplains	2-30
2.2.2 Water Quality and Stormwater Runoff.....	2-30
2.2.3 Soils, Soil Conservation, and Geology.....	2-38
2.2.4 Hazardous Waste/Materials.....	2-41
2.2.5 Air Quality	2-44
2.2.6 Noise and Vibration	2-48
2.3 Biological Environment.....	2-52
2.3.1 Natural Communities	2-53
2.3.2 Wetlands and Other Waters.....	2-58
2.3.3 Plant Species	2-62
2.3.4 Animal Species.....	2-74
2.3.5 Threatened and Endangered Species	2-95
2.3.6 Invasive Species	2-98
2.3.7 Environmental Commitments.....	2-100
2.4 Cumulative Impacts.....	2-103
2.4.1 Introduction	2-103
2.4.2 Cumulative Analysis Projects	2-103
2.4.3 Assessment of Cumulative Impacts.....	2-104
2.4.4 Resources Cumulatively Affected.....	2-105
2.5 Climate Change	2-106
2.5.1 Regulatory Setting.....	2-106
2.5.2 Affected Environment	2-107
2.5.3 Conclusion.....	2-107
Chapter 3 Comments and Coordination.....	3-1
3.1 Early Coordination	3-1

3.1.1	Field Reviews.....	3-1
3.1.2	Other Coordination.....	3-1
3.2	Public Participation and Coordination.....	3-2
3.2.1	Mailing List.....	3-2
3.2.2	Availability of the Initial Study.....	3-2
Chapter 4	List of Preparers.....	4-1
4.1	California Department of Transportation.....	4-1
4.2	Consultant Team: Jones & Stokes.....	4-1
Chapter 5	References Cited.....	5-1
5.1	Printed References.....	5-1
5.2	Personal Communications.....	5-9
Appendix A	Project Layout Sheets	
Appendix B	CEQA Checklist	
Appendix C	TRPA Checklist	
Appendix D	Flood Insurance Rate Map	
Appendix E	Title VI Policy Statement	

List of Tables and Figures

		Page
Table 1.6-1	Required Permits and Approvals	1-7
Table 2.1.1-1	Plan Area Statements Covering the Project Area.....	2-3
Table 2.1.1-2	Land Uses and Impacts	2-7
Table 2.2.2-1	Caltrans Statewide Stormwater Data on Pollutant Concentrations	2-34
Table 2.2.2-2	Caltrans Pollutant Sources	2-35
Table 2.2.3-1	Land Capability Classes in the Project Area	2-40
Table 2.2.6-1	Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Community Regions and Adopted Plan Areas.....	2-49
Table 2.2.6-2	Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Rural Regions.....	2-49
Table 2.2.6-3	Typical Construction Noise Levels	2-51
Table 2.3.1-1	Total Area of Natural Communities in the Study Area.....	2-54
Table 2.3.3-1	Special-Status Plants with Potential to Occur in the Project Vicinity	2-67
Table 2.3.4-1	Special-Status Wildlife and Fish Species That Could Occur in the Project Vicinity	2-79
Table 2.3.6-1	Invasive Plant Species Located in the Study Area	2-99
Follows Page		
Figure 1-1	Project Location Map SR 89, Segment 4	1-2
Figure 2.3.4-1	CNDDDB Occurrences within 5 Miles of the Project Area	2-88

List of Abbreviated Terms

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
208 Plan	<i>Water Quality Management Plan for the Tahoe Basin</i>
AADT	annual average daily traffic
AB 1493	Assembly Bill 1493
AB 32	Assembly Bill 32
AP	Adopted Plan
APE	area of potential effects
ARB	California Air Resources Board
Basin Plan	<i>Water Quality Control Plan for the Lahontan Region</i>
BE	biological evaluation
BEMZs	Bald Eagle Management Zones
BEWH	Bald Eagle Wintering Habitat
BMPs	best management practices
BOD	biochemical oxygen demand
CaCO_3	calcium carbonate
California CAA	California Clean Air Act
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CCD	census county subdivision
CDFA	California Department of Food and Agriculture
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIA	Community Impact Assessment
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
County	El Dorado County
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
dbh	diameter at breast height
Draft PEIR	Draft Program Environmental Impact Report
EDR	Environmental Data Resources
EIP	Environmental Improvement Program
EPA	U.S. Environmental Protection Agency
ESAs	Environmentally Sensitive Areas
ESCP	Erosion and Sedimentation Control Plan

ESL	Environmental Study Limit
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRMs	Flood Insurance Rate Maps
gC/m ² /yr	grams of carbon per meter squared per year
General Construction Permit	NPDES General Permit for Construction
GHG	greenhouse gas
HRCAs	Home Range Core Areas
HSPRP	hazardous spill prevention and recovery program
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
ISA	initial site assessment
Lahontan RWQCB	Lahontan Regional Water Quality Control Board
L _{max}	maximum sound level
LTAB	Lake Tahoe Air Basin
LTBMU	Lake Tahoe Basin Management Unit
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
MIS	Management Indicator Species
MOA	Memorandum of Agreement
mph	miles per hour
MS4	Municipal Separate Storm Sewer System
MVPs	maintenance vehicle pullouts
NAAQS	national ambient air quality standards
NEPA	National Environmental Policy Act
NES	Natural Environmental Study
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTU	nephelometric turbidity units
OHWM	ordinary high water mark
PA	Programmatic Agreement
PACs	protected activity centers
PASs	Plan Area Statements
PM	post mile
PM 2.5	particulate matter 2.5 microns or less in diameter
PM10	particulate matter 10 microns or less in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppm	parts per million
PRC	Public Resources Code
Project	Water Quality Improvements Project (EA 03-1A8440; ED-89 [PM] 18.0–24.9)

PSR	Project Study Report
PUD	Public Utility District
RCRA	Resource Conservation and Recovery Act of 1976
Regional TMP	<i>Lake Tahoe Basin Regional Traffic Management Plan</i>
ROGs	reactive organic gases
RSP	rock slope protection
RWQCB	Regional Water Quality Control Board
SEZ	stream environment zone
SHPO	State Historic Preservation Office
SNFP FEIS	Sierra Nevada Forest Plan Final Environmental Impact Statement
SNFP FEIS ROD	Sierra Nevada Forest Plan Final Environmental Impact Statement Record of Decision
SO ₂	sulfur dioxide
SPCCP	Spill Prevention, Control, and Countermeasure Program
SR	State Route
Statewide Permit	statewide NPDES permit
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TMDL	total maximum daily load
TMP	traffic management plan
TOC	total organic carbon
TRPA	Tahoe Regional Planning Agency
TRPA's Regional Plan	TRPA's Regional Plan for the Lake Tahoe Basin: Goals and Policies
TSCA	Toxic Substances Control Act
TSS	total suspended solids
TTUSD	Tahoe Truckee Unified School District
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
Washoe Tribe	Washoe Tribe of Nevada and California
WDRs	waste discharge requirements

List of Technical Studies Available

The following technical studies were prepared to support the analysis contained in this Initial Study:

- Air Quality Analysis (Jones & Stokes 2007)
- Archaeological Survey Report (Jones & Stokes 2007)
- Community Impact Assessment (Jones & Stokes 2007)
- Historic Property Survey Report (Jones & Stokes 2007)
- Historic Resources Evaluation Report (Jones & Stokes 2007)
- Hydrology and Water Quality Study (Jones & Stokes 2007)
- Initial Site Assessment for Hazardous Waste (California Department of Transportation 2007)
- Natural Environment Study (Jones & Stokes 2008)
- Wetland Delineation and Wetland Impact Reports (Jones & Stokes 2007)
- Noise Analysis (Jones & Stokes 2007)
- Visual Impact Assessment (California Department of Transportation 2008)

Chapter 1 Proposed Project

The California Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA) that is responsible for maintaining and improving the California highway system within the Lake Tahoe Basin. The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. This Water Quality Improvements Project (EA 03-1A8440; ED-89 Post Mile [PM] 18.0–24.9) (the Project) would implement water quality improvement measures along a segment of State Route (SR) 89 in El Dorado County to comply with National Pollutant Discharge Elimination System (NPDES) permit requirements and to address planned improvements and changes that are part of the Lake Tahoe Environmental Improvement Program (EIP), while applying current Caltrans highway design standards for resurfacing, restoration, and rehabilitation projects.

This Project is part of an overall program of proposed improvements on the state highway system in El Dorado County to achieve the objectives for water quality identified in the EIP and is included in a Draft Program Environmental Impact Report (Draft PEIR) prepared by Caltrans (California Department of Transportation 2007a) that addresses the broad range of improvements to eight segments of state highways in El Dorado County. The Draft PEIR discusses improvements at conceptual and preliminary design levels. This Initial Study (IS) provides a more detailed environmental review of this specific Project.

A study area boundary was defined to incorporate the existing right-of-way and additional land outside the right-of-way to allow flexibility for the placement of new proposed water quality improvements. The study area is referred to as the Environmental Study Limit (ESL) in the Draft PEIR. In this IS, the terms “ESL” and “study area” are used interchangeably unless otherwise specified. It should be noted that as design for the Project evolved over time, some of the originally proposed improvements were later eliminated, and a more defined ESL was produced. As a result, the Project ESL is slightly smaller than the ESL discussed in the Draft PEIR.

1.1 Location

This Project is located on SR 89 in El Dorado County north of the Eagle Falls Viaduct to Meeks Creek. The Project limits are from PM 18.0 to PM 24.9. Figure 1-1 shows the Project location in a regional context.

1.2 Purpose

The purpose of this Project is to implement NPDES requirements and water quality elements of the EIP that relate to this segment of SR 89. In meeting this purpose, Caltrans will apply current design standards where appropriate.

1.3 Need

The Lake Tahoe Basin has experienced environmental degradation for approximately the past 100 years, most notably in the lake's water clarity and the health of the basin's forestlands. The lake's water clarity, which reflects water quality, has become the primary measure of the basin's environmental health and has declined steadily over the past several decades. The need for this Project is further defined by the requirements and policies of the agencies and orders discussed below.

1.3.1 Tahoe Regional Planning Agency

The Tahoe Regional Planning Agency (TRPA) was created with the authority to plan, oversee, and regulate development within the bi-state Lake Tahoe region, which includes the state highways. TRPA was established by Congress under the Tahoe Regional Planning Compact created by Public Law 96-551 (enacted by Congress in 1982). The Tahoe Regional Planning Compact charges TRPA with developing, attaining, and maintaining environmental threshold carrying capacities to protect the unique values of the basin. The nine categories of environmental thresholds created by the TRPA under the compact are:

- Water quality
- Air quality
- Scenic resources
- Soil conservation
- Fisheries
- Vegetation
- Wildlife
- Noise
- Recreation.

TRPA's *Regional Plan for the Lake Tahoe Basin: Goals and Policies* (TRPA's Regional Plan) establishes the overall approach to meeting the threshold standards. Various elements of the Regional Plan address specific environmental and planning topics, and community plans and TRPA's Plan Area Statements (PASs) (individual planning areas that represent the entire Lake Tahoe Basin) identify goals for specific land use areas throughout the Lake Tahoe Basin. The plans and policies ultimately are implemented through TRPA's Code of Ordinances, which regulates all proposed projects and activities (California Department of Transportation 2007a).

1.3.2 Executive Order 13057 and State and Regional Commitments

Presidential Executive Order 13057, issued on July 26, 1997, declared the Lake Tahoe region an area of national environmental concern. The order created a federal partnership of five Cabinet-level agency secretaries and called for a Memorandum of Agreement (MOA) among the federal



00825.07 (rev.10-07)

Figure 1-1
Project Location Map
SR 89, Segment 4

partnership, the States of California and Nevada, TRPA, and the Washoe tribal government to facilitate coordination and cooperation. The MOA subsequently was signed by the governor of California, and it affirmed a commitment to manage and protect Lake Tahoe's natural resources; achieve and maintain the previous environmental thresholds; and adopt, fund, and implement the EIP. The \$908 million EIP was adopted by TRPA in February 1998. Continued state funding for the EIP since 1999 has reaffirmed California's commitment to protect and restore the environmental quality of Lake Tahoe (California Department of Transportation 2007a).

The EIP identifies restoration, capital improvement, and operational modification work in eight of the nine environmental threshold areas. Approximately 83 EIP projects involve California highways in the Lake Tahoe Basin. Caltrans provides capital funding involvement for approximately 28 projects and is the lead agency for 20 projects (California Department of Transportation 2007a). This proposed Project incorporates elements of EIP project 995.

1.3.3 National Pollutant Discharge Elimination System Permit Requirements

In 1987, the federal Clean Water Act (CWA) was amended to include Section 402(p), which established a framework for regulating municipal and industrial stormwater discharges under the NPDES. Caltrans was issued a statewide NPDES permit (Statewide Permit) (Order 99-06-DWQ, NPDES CAS000003) from the State Water Resources Control Board (SWRCB) on July 15, 1999. The Statewide Permit incorporates the provisions of the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) (Lahontan Regional Water Quality Control Board 2005). The Basin Plan includes numerical effluent limitations for stormwater discharges within the Lake Tahoe Hydrologic Unit (California Department of Transportation 2007a).

The Statewide Permit requires that stormwater and urban runoff collection, treatment, and infiltration disposal facilities be designed, installed, and maintained for the discharge of stormwater runoff from all impervious surfaces generated by the 20-year, 1-hour design storm within the Lake Tahoe Hydrologic Unit. According to the permit, all Caltrans facilities within the hydrologic unit must be retrofitted to comply with this requirement by 2008¹. If site conditions do not allow for adequate on-site disposal, all site runoff must be treated to meet applicable effluent limits and receiving water limitations specified in the Basin Plan. The Regional Water Quality Control Board (RWQCB) executive officer may approve alternative mitigation measures (California Department of Transportation 2007a).

Caltrans developed, and the SWRCB approved, a statewide stormwater management plan (California Department of Transportation 2007c) that identifies appropriate best management practices (BMPs) to be implemented on projects as site conditions allow. The *Caltrans Storm Water Quality Handbook: Project Planning and Design Guide* (California Department of Transportation 2007b) was developed to give additional guidance to designers in considering and implementing these BMPs on all projects. This Project would improve stormwater quality by implementing source control and treatment BMPs as approved in the handbook to the maximum extent practicable (California Department of Transportation 2007a).

¹ Caltrans is currently working closely with Lahontan RWQCB on meeting the goals of the 2008 stipulation of the NPDES permit. This effort will continue for the next several years.

1.4 Proposed Project

Caltrans proposes only one build (action) alternative, with multiple elements that would provide an opportunity to improve water quality through the use of various treatment BMPs (as identified in the *Caltrans Storm Water Quality Handbook: Project Planning and Design Guide*) and to conform to the TRPA Code of Ordinances. Caltrans proposes to improve the quality of stormwater runoff by collecting and treating the stormwater runoff from SR 89 by implementing the following improvements where feasible and warranted:

- Rehabilitating existing drainage systems and installing new drainage systems, including infiltration basins, vegetated swales and water conveyance systems
- Deploying treatment BMPs
- Providing rock slope protections
- Constructing rock energy dissipaters for erosion control
- Regrading/conforming driveways that intersect with the highway
- Revegetating bare or erodible areas
- Where permitted by the RWQCB and TRPA, allow sheet flow off of roadways to allow the spreading and subsequent infiltration of runoff water where feasible in stream environment zone (SEZ) areas
- Placing asphalt-concrete overlay (1.8 inches)
- Digging out failed pavement sections
- Lining or replacing culverts in poor condition.

Potential locations for infiltration devices, such as basins, vegetated swales, trenches or other conveyance systems, were identified during the development of the Project Study Report (PSR) for SR 89 in El Dorado County (California Department of Transportation 2007a). The Project improvements were developed with input from and through coordination with Caltrans multifunctional units specializing in design, materials, traffic, constructability, safety, and environmental review. Preliminary design review and input were provided by staff from the Lahontan RWQCB; TRPA; El Dorado County; the Caltrans TRPA liaison; and Caltrans District 3 landscape, design and environmental units, which conducted field reviews of the Project area (California Department of Transportation 2007a).

The basin and related facility locations and configurations were identified based on whether a site was undeveloped, had flat or gently sloping topography, was downgradient from an existing or potential discharge point, was not in an obvious SEZ or floodplain, and was accessible to maintenance equipment (California Department of Transportation 2007a).

The Project improvements were developed with input from and through coordination with Caltrans multifunctional units specializing in design, materials, traffic, constructability, safety, and environmental review. This cooperative effort produced a Project-specific ESL that

encompassed the proposed improvements for the Project. This ESL boundary is shown in the Project layout sheets in Appendix A.

1.4.1 Construction Phasing, Access, Staging Areas, and Methods

To allow for construction, temporary access to or use of lands outside the Caltrans right-of-way² would be required. These areas occur along both sides of SR 89 and have been included in the Project ESL. This access or use is typical of most major roadway projects and would allow for the temporary staging of equipment and construction, and access to and from the construction areas (California Department of Transportation 2007a).

Construction activities would require the clearing of vegetation where Project features would be installed. Tree removal would be necessary in some locations but would be minimized through further design refinement of basins and related Project features. State, regional, and local vegetation and tree removal requirements and permitting would be followed. During construction, the contractor would be required to develop and implement erosion control measures and plans and to follow seasonal restrictions applicable to projects in the Lake Tahoe Basin (California Department of Transportation 2007a).

Removal and replacement of existing pavement and the installation of new paved areas along the highways would occur during construction. New vehicle pullouts might require earthwork and disturbance of existing slopes. New cut slopes would be stabilized with rock-slope protection or vegetation. TRPA scenic threshold criteria would be considered in the design of slope protection systems. Excavation and earthwork would be necessary for the installation of pavement, runoff basins, water collection and control devices, and similar facilities. Excavated earth and materials not reused at the Project site or elsewhere would be disposed of by the contractor at appropriate disposal facilities. The contractor may need to use controlled blasting at locations where existing rock prevents or substantially impairs excavation. Permanent, long-term BMPs, including asphalt dikes and new drainage systems, would be implemented for controlling potential impacts on existing waterways or storm drainage facilities (California Department of Transportation 2007a).

1.4.2 Traffic Management and Public Involvement Plans

Caltrans will develop a Project-level traffic management plan (TMP) prior to construction of this segment. The Project-level TMP will include construction restrictions, requirements, and definitions that would apply to the contractor(s) based on the type of work.

In general, the Project-level TMP would develop strategies for public and motorist information, incident management, construction, demand management, and alternate routes. It may require, restrict, or define elements of the following:

- Construction requirements and restrictions to minimize traffic delays and maximize safety
- Lane closure timing and charts

²Through a special-use permit issued by the U.S. Forest Service, Caltrans has permission to temporarily occupy the lands outside of their right-of-way but still within the Project limits.

- Master construction schedule
- Traffic operation systems
- Emergency vehicle access
- Bicycle and pedestrian access
- Temporary detours through the construction zone for pedestrian and recreational areas, as necessary
- Limiting construction hours with traffic control
- Standard contract specification for access to a property, driveway, or access road
- Notification before construction affecting property access
- Coordination with local and state agencies about the staging of various worksites and size of construction efforts.

Based on the draft *Tahoe Basin Public Communications and Outreach Guidelines*, Caltrans also would create a public involvement plan to minimize disruption to local communities and maximize awareness of Project-related activities. The plan would include protocols for coordination with members of the public, other agencies, and all applicable stakeholders; specific outreach activities, such as ongoing information dissemination, public workshops, and media announcements; and coordination with the TMP to disseminate immediate information about road conditions. The goal of the public involvement planning would be to ensure active participation and involvement by community and agency members and minimize effects on stakeholders resulting from the proposed Project (California Department of Transportation 2007a).

1.5 No-Build Alternative (No Action)

Under the No-Build Alternative (no action), Caltrans would not construct any of the improvements listed in Section 1.4. Caltrans is required to comply with the Statewide Permit issued by the SWRCB; therefore, it would be in violation of the requirements of this permit if the proposed Project were not constructed. Further, because this alternative would not address the environmental problems facing the Lake Tahoe Basin, it is not considered a viable alternative with respect to the Project purpose and need. This alternative would not directly affect the resources discussed in this report.

1.6 Permits and Approvals Needed

The permits, reviews, and approvals listed in Table 1.6-1 may be needed for Project construction.

Table 1.6-1. Required Permits and Approvals

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service (USFWS)	Section 7 consultation for threatened and endangered species	Preliminary coordination and consultation began on October 23, 2007
U.S. Army Corps of Engineers (USACE)	Section 404 authorization for fill of waters of the United States	Not yet initiated
U.S. Forest Service (USFS)	Threatened and endangered species consultation, possible tree removal permit	Not yet initiated
California Department of Fish and Game (CDFG)	Section 1602 streambed alteration agreement	Not yet initiated
Lahontan Regional Water Quality Control Board (Lahontan RWQCB)	Section 401 Water Quality Certification	Preliminary coordination and consultation
Tahoe Regional Planning Agency (TRPA)	Permit	Preliminary coordination and consultation; land capability verification ongoing
El Dorado County (County)	Encroachment permit	Preliminary coordination and consultation

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

This chapter discusses the impacts that the Project would have on the human, physical, and biological environments in the Project area, and presents measures to avoid or minimize those impacts. The environmental resource discussions presented in this chapter are based on the technical studies cited above. These studies are available for review at the California Department of Transportation North Region Office of Environmental Management, 2800 Gateway Oaks Drive, Sacramento, California, 95833. However, in order to protect the resources identified, and pursuant to Section 6254(r) of the Government Code, the Archaeological Survey Report is not part of the public record.

As part of the scoping and environmental analysis conducted for the Project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document:

- **Consistency with State, Regional, and Local Plans and Programs:** The Project, one of Caltrans' proposed EIP activities in El Dorado County, is consistent with plans developed by TRPA, and the County. These plans stress improving water quality in the Lake Tahoe area, which is the purpose of the Project. The Project is consistent with all applicable plans, including long-range TRPA land use plans (URS 2006a). Therefore, the Project would not result in impacts on planning, land use, or long-term plans or polices applicable to the ESL.
- **Growth:** The proposed Project is limited to improvements necessary to meet NPDES permit requirements and elements of the Lake Tahoe Basin EIP that relate to this portion of SR 89. No changes would be made to the highway that could affect through-traffic or permanently change access to any land or parcels. Proposed Project features would not add additional infrastructure or change highway levels of service, and therefore would not change or cause growth or development. Furthermore, proposed improvements would not remove any existing barriers to growth. As a result, the Project would have no impact on growth.
- **Farmlands/Timberlands:** The land within the ESL is not currently in farmland or timberland production and is not proposed for production.
- **Airports:** The Project, water quality improvements and roadway repaving, is not located in the vicinity of a public airport, public use airport, or private airstrip. The Project would have no effect on air traffic patterns; would not create roadway design feature hazards; and would have no permanent effect or variance in alternative transportation policies, plans, or programs.
- **Utilities:** No substantial disruption of service during construction is anticipated. Therefore, the Project would have no impact on utility service.

- **Paleontology:** The soils and underlying rock layers within the ESL are volcanic and do not have the potential to contain paleontological resources.
- **Seismicity, Unstable Geologic Units, and Fault Rupture:** The Project does not involve the construction of habitable structures or other facilities that would result in substantial adverse impacts on people, property, or the environment if damaged by ground shaking. The Project also does not involve any construction activities that would destabilize existing geologic units or increase existing landslide hazards.
- **Surface Water, Groundwater and Flooding:** The purpose of the Project is to improve the quality, control, and flow of stormwater runoff into existing or upgraded facilities. The flow rates associated with the water quality improvements along the Project segment would not be altered substantially to a point that would affect the quantity of surface runoff or groundwater downstream of the construction areas. In addition, it was determined that the Project is located outside the 100-year floodplain. As a result, no further discussion of impacts related to the floodplain is required.

The Federal Emergency Management Agency (FEMA) delineates 100-year floodplains and issues Flood Insurance Rate Maps (FIRMs). The segment of SR 89 addressed by this Project is located in both FIRM No. 0600400355B and No. 0600400150B. Currently, FIRM No. 0600400355B is not available on the FEMA website. However, FIRM No. 0600150B is available and shows that the northern portion of the Project segment is located in Zone D (see Appendix D). Within this zone, flooding hazards are unknown because no flooding analysis has been conducted (Federal Emergency Management Agency 1983). The water quality improvements associated with the proposed Project would not change the drainage pattern to a point that would cause onsite flooding. As a result, the proposed Project would cause no change in the current conditions in terms of flooding in the area located in Zone D.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Regulatory Setting

Tahoe Regional Planning Agency

The 1987 TRPA Regional Plan establishes the overall approach to meeting the threshold standards. Various elements of the plan address specific environmental and planning topics, and TRPA's PASs and community plans identify goals for specific land use types throughout the Lake Tahoe Basin. Each PAS was amended in 2002 to include a provision that supports the implementation of capital improvement and other improvement projects required by the TRPA Regional Plan and EIP. The PASs that include the Project area are described below.

Table 2.1.1-1. Plan Area Statements Covering the Project Area

Plan Area Statement	Land Use Classification
146-Emerald Bay	Recreation
147-Paradise Flat	Residential
148-Meeks Creek	Conservation
149-Rubicon Bay	Residential
150-Meeks Bay	Recreation

The plans and policies ultimately are implemented through TRPA’s Code of Ordinances, which regulates all proposed projects and activities (California Department of Transportation 2007a).

Affected Environment

Several different geographic areas are used in this section to describe the affected area for this Project. The area used depends on the nature of the resource being described and the availability of data to describe the resource. The following definitions are used.

- **Project Area:** The general term that describes the SR 89 roadway and adjacent land uses that are located between PM 18.0 and 24.9. This includes the entire area depicted on the layout sheets in Appendix A. This area provides the background for the physical and environmental setting of the Project.
- **Environmental Study Limit (ESL):** The area that would be directly and physically affected during the construction period. This area is also depicted on the layout sheets found in Appendix A. As denoted, this area is generally limited to the SR 89 roadway, which lies within the Project area boundary.
- **Study Area:** The study area describes the larger community that is generally associated with the Project area. The study area is used in this report to define the Project area in demographic and socioeconomic terms.

Existing Conditions

The Project is located in El Dorado County on SR 89, beginning north of the Eagle Falls Viaduct and continuing to Meeks Creek. Situated along the southwestern rim of Lake Tahoe, the Project area is composed of residential developments, limited commercial development, open space, forestland, and recreational areas. No cultivated farmlands are located within the ESL or the Project area.

Major Land Uses

The Project segment is located primarily within the unincorporated El Dorado County lands of the southwestern Lake Tahoe Basin, with some areas owned/managed by the USFS and the California Department of State Parks.

Southwest Lake Tahoe

As stated in the program Community Impact Assessment (CIA), the southwest shore of Lake Tahoe extends from the western boundary of the City of South Lake Tahoe to the Placer County border in the town of Tahoma. Land uses are predominantly recreational and public lands, with limited residential and commercial development.

The portion of the study area evaluated that runs from Emerald Bay through D. L. Bliss State Park contains few developed facilities beyond campgrounds, picnic sites, and vacation homes. North of D. L. Bliss State Park, the study area is characterized by low-density residential and limited commercial development. The Rubicon Bay area has primarily single-family homes (one unit per parcel), and the Meeks Bay area, located on Lake Tahoe Basin Management Unit (LTBMU) land, consists primarily of the Meeks Bay Resort, managed by the Washoe Tribe, Meeks Bay Campground and other recreational development (Washoe Tribe 2006).

Land Suitable for Development and Development Trends

In order to protect the environmental health of Lake Tahoe and its basin, TRPA has implemented strict growth and development guidelines that limit the amount of new development in the area. Since 1987, residential construction has been limited to the addition of 300 units per year in the region. As a result, the region is expected to stay relatively stable in terms of growth and development.

Between 1990 and 2000, the greater Lake Tahoe region, which includes those areas surrounding Lake Tahoe in California and Nevada, averaged a growth rate of 1.8% a year. This compares with a growth rate of 3.7% per year for Placer County and 2.4% per year for El Dorado County overall. Within the South Lake Tahoe census county subdivision (CCD), the population increased by 15% between 1990 and 2000, from 29,653 to 34,042. During the same 10-year period, 1,018 additional housing units were built in the study area (URS 2006a).

Environmental Consequences

Environmental consequences were assessed using a qualitative approach, which included a site visit and a review of the Draft PEIR and program CIA documents prepared for Caltrans' eight El Dorado County water quality improvements projects, the Project-specific CIA, and applicable TRPA guidelines.

Conflicts with Future or Existing Land Uses

Based on preliminary design, the Project would require the temporary use or permanent acquisition of up to 67 undeveloped parcels for the proposed Project features. Table 2.1.1-2 lists parcels and existing land uses within, or adjacent to, the ESL boundaries. These temporary construction easements and permanent right-of-way acquisitions of undeveloped parcels would be used for equipment staging and Project implementation, including infiltration basin or vegetated swale installation and utility relocation.

In general, the land use study area contains large parcels that support multiple land uses, including undeveloped areas. As depicted in Appendix A, areas considered for water quality features (i.e., infiltration basins and/or vegetated swales) currently are undeveloped.

TRPA PASs provide guidance for future growth and development for specific areas located within the Lake Tahoe Basin. These PAS maps and documents can be found on the TRPA website (<http://www.trpa.org/default.aspx>). PASs provides area descriptions, planning statements and considerations, special policies, permissible uses, and other development policies. In 2002, each PAS was amended to include the section below.

Environmental Improvement Programs: The capital improvement and other improvement programs required by the Regional Goals and Policies Plan and Environmental Improvement Plan (EIP) for this area shall be implemented [Tahoe Regional Planning Agency n.d. (a)].

Overall, although the Project would result in the permanent right-of-way acquisition of several undeveloped parcels, the Project would not significantly affect existing land uses because no permanent acquisitions or displacements of structures are planned. Although some permanent facilities would be installed on undeveloped parcels, the nature of these facilities would not result in a more intensive land use. Furthermore, because these improvements are specifically allowed under TRPA, the Project would not constitute a nonconforming or non-permissible use of land.

This impact would be less than significant. No mitigation is necessary.

Table 2.1.1-2. Land Uses and Impacts

Map Sheet	APN	Ownership of Proposed Right of Way	APN Address	Existing Use	Right of Way	Proposed Project Feature
ESL-1	018-011-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./IB 71
ESL-1	018-011-041	Bureau of Land Management	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-2	018-011-041	Bureau of Land Management	N/A	vacant	TCE	Grading Limits
ESL-2	018-011-041	Bureau of Land Management	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-2	018-011-041	Bureau of Land Management	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-3	017-131-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-3	017-131-011	State of California	N/A	vacant	TCE	Grading Limits
ESL-3	017-131-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-3	017-131-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-3	017-131-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-3	017-121-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./IB 74
ESL-4	017-121-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-4	017-121-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-4	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-4	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-5	017-101-011	State of California	N/A	vacant	TCE	Apply Erosion Control
ESL-5	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./New 18" CSP
ESL-6	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-6	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-6	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-6	017-101-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-6	017-081-011	State of California	N/A	vacant	ROW-DE	Vegetated Swale
ESL-6	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-7	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-7	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-7	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.

Chapter 2. Affected Environment and Environmental Consequences

ESL-7	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-7	017-081-011	State of California	N/A	vacant	ROW-DE	Infiltration Basin 79
ESL-8	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-8	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-8	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-8	017-081-011	State of California	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-8	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-9	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-9	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./IB 82
ESL-9	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-9	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-9/10	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-10	017-061-101	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-10/11	017-041-181	Green, William R. TR. Green, Michelle A. TR. Green 1999 Rev. Trust	9505 Emerald Bay Road, South Lake Tahoe, CA 96150	vacant	ROW-DE	Vegetated Swale
ESL-11	017-041-291	Livermore, Samuel M TR	321 Paradise Flat Lane, South Lake Tahoe, CA 96150	vacant	TCE	Culvert Outlet R.E.D.
ESL-12	017-041-091	Tamarack Mutual Water Co % Ewer, Ann H.	N/A	Vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-12	017-041-091	Tamarack Mutual Water Co % Ewer, Ann H.	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-12	017-041-091	Tamarack Mutual Water Co % Ewer, Ann H.	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-12	017-041-091	Tamarack Mutual Water Co % Ewer, Ann H.	N/A	vacant	TCE	Culvert Outlet R.E.D.
ESL-13	017-021-111	Tamarack Mutual Water Co % Ewer, Ann H.	9328 Three Ring Road, South Lake Tahoe, CA 96150	vacant	TCE	Culvert Outlet R.E.D.
ESL-14	016-600-211	Nelson, Patricia A TR Nelson P A Fam TR of 5/03/2006	9220 State Highway 89, South Lake Tahoe, CA 96150	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-14	016-600-211	Nelson, Patricia A TR Nelson P A Fam TR of 5/03/2006	9220 State Highway 89, South Lake Tahoe, CA 96150	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-14	017-021-091	Hewlett, Rosemary B TR Hewlett Living Trust of 01/25/00	251 Four Ring Road, South Lake Tahoe, CA 96150	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-15	016-131-011	Forest Company	9120 South Lane, South Lake Tahoe, CA 96150	vacant	ROW-DE	Culvert Outlet R.E.D.

ESL-16	016-292-281	California Tahoe Conservancy	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-16	016-292-291	California Tahoe Conservancy	N/A	vacant	ROW-DE	Vegetated Swale
ESL-16	County ROW	Eldorado County	N/A	vacant	ROW-DE	Vegetated Swale
ESL-17	016-292-081	United States of America	N/A	vacant	ROW-DE	Vegetated Swale
ESL-18	016-110-021	United States of America	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-19	016-110-021	United States of America	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-19	016-181-051	USA Forest Service	N/A	vacant	ROW-DE	Vegetated Swale
ESL-19	016-181-041	USA Forest Service	N/A	vacant	ROW-DE	Vegetated Swale
ESL-20	016-181-031	State of California Department of Transportation	N/A	vacant	ROW-DE	Vegetated Swale
ESL-20	016-181-021	USA Forest Service	N/A	vacant	ROW-DE	Vegetated Swale
ESL-20	016-181-011	State of California Department of Transportation	N/A	vacant	ROW-DE	Culvert Outlet R.E.D./Veg Swale
ESL-21	016-091-291	USA Forest Service	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-23	County ROW	Eldorado County ROW	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-23&24	016-063-151	Kehlet, Darel D. TR Kehlet, Ethel V. TR Kehlet 2001 Living Rev Trust	N/A	vacant	ROW	30' AC Pavement and Reveg
ESL-25	016-041-101	United States of America	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.
ESL-25	016-041-101	United States of America	N/A	vacant	ROW-DE	Culvert Outlet R.E.D.

Notes: N/A = Not applicable
 ROW = Right-of-way
 ROW-DE = Right-of-way, drainage easement
 TCE = Temporary Construction Easement
 R.E.D = Rock energy dissipater
 AC = Asphalt concrete
 CSP = Corrugated Steel Pipe

2.1.1.2 Parks and Recreation

Regulatory Setting

Lake Tahoe Basin Management Unit

The USFS manages 80% of the land in the Lake Tahoe Basin as a unique type of National Forest, known as the LTBMU. Therefore, the portions of the Project area that are within USFS land are managed by the LTBMU. The LTBMU has special focus areas, including recreation management. The LTBMU relies on its *Land and Resource Management Plan* (U.S. Forest Service 1988) to guide the management of recreation and tourism within the Lake Tahoe Basin.

Tahoe Regional Planning Agency

TRPA threshold standards applicable to recreation resources include those listed below.

- **R1**—It shall be the policy of the TRPA Governing Body in development of the Regional Plan to preserve and enhance the high-quality recreational experience including preservation of high-quality undeveloped shorezone and other natural areas. In developing the Regional Plan, the staff and Governing Body shall consider provisions for additional access, where lawful and feasible, to the shorezone and high-quality undeveloped areas for low density recreational uses.
- **R2**—It shall be the policy of the TRPA Governing Body in development of the Regional Plan to establish and ensure that a fair share of the total basin capacity for outdoor recreation is available to the general public (California Department of Transportation 2007a).

Affected Environment

Study Area

The Project area is surrounded by national forests and wilderness areas and contains both state parks and recreational areas. As previously stated, a state park, three campground sites, and other recreational facilities are located adjacent to and within the Project limits.

The D. L. Bliss State Park is a year-round recreational area located within the Project boundary with direct access from SR 89. It provides seasonal camping and year-round self-guided nature trails for panoramic views of Emerald Bay (California State Parks 2007).

At the northernmost terminus of the land use study area is Meeks Bay Campground, also located adjacent to SR 89. Meeks Bay Campground is a USFS campground operated by a private concessionaire. It is open to the public seasonally and provides a total of 40 campsites (U.S. Forest Service 2007).

Tahoe City Public Utility District (PUD) has a Class I multi-use path that runs from the Placer County/El Dorado County line south to Sugar Pine Point State Park. There are plans to extend the trail to Meeks Bay (California Department of Transportation 2003b). Although there are no current data detailing the use of bicycle and shoulder lane facilities in the study area, these facilities are used extensively just north of the study area limits in Tahoma (URS 2006a).

Some off-highway parking is available for the recreational facilities, but these areas can overflow during the peak season, causing drivers to use available shoulder space on the highway (URS 2006a). Public parking is allowed at designated pullout areas or stretches of SR 89 where

vehicles can park off the roadway safely. According to the program CIA, parking can be limited and in high demand even in these pullout areas, especially during the summer season. In addition, slowly moving vehicles seeking limited parking spaces in these areas can increase congestion or the risk of conflicts with through traffic on the highway (URS 2006a).

Environmental Consequences

Environmental consequences were assessed qualitatively based on information provided in the Draft PEIR, the program CIA, TRPA guidelines, and technical reports and layout sheets prepared for the Project.

Construction of the Project would not increase the capacity of SR 89 or increase the surrounding population to result in an increase in the use of recreation facilities in the vicinity of the Project. The Project does not include the construction of new recreation facilities, nor would it require an expansion of existing recreational facilities that would have permanent adverse environmental impacts. There would be no impact, and no mitigation is required. However, a public outreach effort will be initiated through the environmental documentation process, as well as throughout the construction period, to keep the public informed of Project activities.

Temporary impacts on recreational resources associated with construction activities are described below.

Construction-Related Noise Impacts on Recreation Resources

Noise generated during construction of the Project would be regulated as described in Section 2.2.6. This noise could affect campers in campsites located near SR 89. Meeks Bay Campground is adjacent to SR 89, with campsites within approximately 50 feet of SR 89. Construction of the Project would result in a temporary increase in noise levels that could be disruptive to campers in an otherwise quiet and serene environment but would be temporary in nature and would not result in a significant impact (for expanded discussion on noise impacts, please refer to Section 2.2.6.3). No mitigation is required.

Temporary Recreational Detours

Although the Project boundaries do not include portions of an existing bike path, cyclists using the roadway and shoulder areas may be affected temporarily by construction activities within the roadway. Detours would occur only during the period of construction in the location of the basin or other improvements under construction. Once construction in the area had been completed, the detours would be removed. Detours are not expected to significantly affect access for bicyclists. This impact would be less than significant. No mitigation is required.

Access to Recreation Resources

Access to the recreation areas near the Project described above is from SR 89 or from roads that intersect SR 89. Construction-related activities may include delays in traffic going to and from the recreation facilities along SR 89. All existing access to the beaches, recreation areas, and trails would be maintained during the construction periods or, at most, intermittently delayed. These impacts would occur only during periods of active construction, and access would be restored as soon as possible. Therefore, this impact would be less than significant. No mitigation is required.

2.1.2 Community Impacts

2.1.2.1 Regulatory Setting

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

Affected Environment

Community Access and Circulation

Within the land use study area, SR 89 serves as the primary major arterial to access secondary roads for residential areas, as well as the few commercial buildings. SR 89 also provides the only major route to access popular recreational areas in the Project vicinity, including D. L. Bliss State Park and Meeks Bay Campground.

Business activity within the Project area boundaries is extremely limited. A small concentration of commercial buildings is located at the northern terminus of the Project area in Meeks Bay, but only two businesses currently operate in this location. A total of three established businesses are located in the Project area: Rubicon Realty (Assessor's Parcel Number 016-292-331), Alpaca Pete's, and Tree Spray and Snow Removal (Assessor's Parcel Number 016-410-071), all of which are situated immediately adjacent to SR 89. Recreation areas (Meeks Bay Campground and Emerald Bay) comprise the remaining sources of economic activity in the immediate study area. Although parking areas may vary in size and location, these businesses all have off-street parking options for patrons. In addition, the Meeks Bay Fire Protection District's Station 61 is located within the ESL, with direct access off SR 89.

Lake Tahoe's recreational destinations constitute the majority of travel and activity within the study area and the Lake Tahoe Basin overall. Within the ESL, the most popular visitor locations include D. L. Bliss State Park and Meeks Bay Campground, as well as numerous scenic access points and trailheads. All of these recreation areas are accessed either directly off or at an intersection with SR 89, which is a two-lane highway in this vicinity.

Environmental Consequences

The environmental consequences were assessed using a qualitative approach, which included a site visit and a review of the Draft PEIR and program CIA documents for Caltrans' eight El Dorado County water quality improvements projects, the Project-specific CIA, as well as applicable TRPA guidelines.

Temporary Construction Related Community Impacts

During the construction period, roadways would remain open, with relatively unrestricted travel during hours of non-construction activities (e.g., weekends during the summer). Due to daytime traffic volumes, the Project would also include night work. However, it is not anticipated that construction activities for this Project would violate TRPA's CNELs or Caltrans' instantaneous noise limits (for expanded discussion on noise, please refer to section 2.2.6). In addition, the segment of SR 89 is a two-lane highway and may experience delays in travel during periods of active construction that require temporary lane closures.

Along the portion of SR 89 located within the community of Rubicon Bay, the local circulation system is developed with internal roadways. These local roadways potentially could provide non-highway routes through neighborhoods during active construction activities (this is also known as cut-through traffic). Because at least one lane in each direction would remain open during construction activities when possible, through lane-width reductions or the use of paved shoulder areas, unofficial detours through residential neighborhoods would be less efficient than travel on SR 89. Therefore, the potential for cut-through traffic to disrupt existing neighborhoods or community areas would be less than significant.

The Project could cause intermittent traffic delays along SR 89 during active construction periods, which may have an impact on community access. Although these delays and lane closures are temporary and are not expected to be significant, they could discourage some travelers from using this portion of SR 89. To ensure that access would be maintained during the construction period, a TMP would be implemented as part of the Project, which would develop strategies for public and motorist information, incident management, construction, demand management, and alternate routes. This impact would be less than significant. No mitigation is required.

2.1.3 Emergency Services

2.1.3.1 Affected Environment

Police Protection

The California Highway Patrol (CHP) and the El Dorado County Sheriff's Office provide police protection along SR 89 and in the unincorporated areas of El Dorado County, which include the study area (URS 2006a).

Fire Protection

Two organizations, the Meeks Bay Fire Protection District and the USFS, provide fire protection services within the study area.

The Meeks Bay Fire Protection District provides fire protection and medical emergency services from the El Dorado County/Placer County line to the northern boundaries of D. L. Bliss State Park. Through mutual aid agreements, the district also provides emergency service response to Eagle Falls in Emerald Bay. The district operates out of two stations, staffed with 12 regular employees and 18 volunteers. Station 61, located at 8041 Emerald Bay Road in Meeks Bay, is the closest station to the study area (Meeks Bay Fire Protection District 2007).

The USFS provides fire protection for the El Dorado National Forest and wilderness areas within and surrounding the Project limits (URS 2006a).

2.1.3.2 Environmental Consequences

Once completed, the Project would have no effect on police and fire protection or on emergency response or evacuation plans. During Project construction, there is the potential for temporary traffic congestion and delays to result where active construction work is underway. However, emergency vehicles are exempt from road lane closures, and every effort would be made to allow police and fire vehicles to pass through construction zones without delay (URS 2006a). If implementation of an emergency response plan or emergency evacuation plan were necessary

during Project construction, response or evacuation delays could occur also. Emergency vehicle access would not be restricted, and any necessary actions to support safe movement of vehicles along evacuation routes would be taken. With implementation of the TMP, which would address these issues, there would be no impact. No mitigation is required.

2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

2.1.4.1 Regulatory Setting

California Department of Transportation

Caltrans, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Tahoe Regional Planning Agency

Pursuant to TRPA's Code of Ordinances, potential impacts on traffic and transportation that would be considered are those that generate additional vehicle trips; change parking facilities or the demand for these facilities; change existing transportation systems; alter circulation patterns; alter waterborne, rail, or air traffic; or increase traffic hazards to motor vehicles, bicyclists, or pedestrians (California Department of Transportation 2007a).

2.1.4.2 Affected Environment

Traffic

SR 89 provides primary access to and from the study area and adjacent recreational campgrounds and parklands. The highway descends from Emerald Bay and travels north to the community of Rubicon Bay. The southern half of this segment travels through undeveloped national forest lands and is adjacent to or crosses through the northern extent of Emerald Bay State Park and D. L. Bliss State Park (URS 2006a).

The portion of SR 89 that traverses through the Project area had an annual average daily traffic (AADT) count of 4,800 vehicles in 2006. This AADT volume is expected to reach 5,170 vehicles by the year 2012 and 5,800 vehicles by the year 2020 (California Department of Transportation 2008a).

Traffic conditions are also often described by transportation professionals in terms of "level of service" (LOS). LOS is a common, qualitative measure of the effect of a number of factors on traffic operation conditions, including speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, and convenience. LOS varies from LOS A (the best) and LOS F (the worst). According to Caltrans' *Transportation Concept Report* (2001), the portion of SR

89 that traverses through the Project area operates at LOS D under existing conditions (California Department of Transportation 2001).

Public Transit

BlueGO is a coordinated public-private transportation system that provides a variety of scheduled and on-demand transportation services throughout the southern shore of Lake Tahoe. Within the study area, BlueGO operates the Nifty Fifty Trolley and the North Shore Emerald Bay Shuttle (BlueGO 2007a).

Route E of the Nifty Fifty Trolley service is known as the Emerald Bay Trolley, which provides service between Camp Richardson and the D. L. Bliss State Park. The Nifty Fifty Trolley makes four stops in the ESL at Emerald Bay State Park, Inspiration Point, Vikingsholm Parking Area, and at the D.L. Bliss State Park. In addition, the Emerald Bay Shuttle provides service along SR 89 from Emerald Bay to Tahoe City (Truckee North Tahoe Transportation Management Association 2008). The shuttle makes three stops within the ESL, at Meeks Bay, D.L. Bliss State Park, and at the Eagle Falls Trailhead. These transit services run seasonally, with the Nifty Fifty Trolley operational from Memorial Day to Labor Day, and the Emerald Bay Shuttle running from May through October.

The Tahoe Truckee Unified School District (TTUSD) provides school bus service. However, no bus stops are located within the Project area limits. TTUSD bus stop locations are located north of the study area, in Tahoma, along SR 89.

Circulation and Parking

Within the study area, SR 89 serves as the primary major arterial to access secondary roads for residential areas, as well as the few commercial buildings that exist adjacent to this highway. Although parking areas may vary in size and location, these businesses all have off-street parking options for patrons.

Lake Tahoe's recreational destinations constitute the majority of travel and activity within the study area and the Lake Tahoe Basin overall. The most popular visitor locations within the ESL include D. L. Bliss State Park and Meeks Bay area, as well as numerous scenic access points and trailheads. All of these recreation areas are accessed either directly off or at an intersection with SR 89, which is a two-lane highway in this vicinity. Where no large lots are provided, vehicles use roadside shoulders and pullouts to park for access to scenic vistas and other recreational activities.

Some off-highway parking is available for the recreational facilities, but these areas can overflow during the peak season, causing drivers to use available shoulder space on the highway (URS 2006a). Public parking is allowed at designated pullout areas or stretches of SR 89 where vehicles can park safely off the roadway. Parking in these pullout areas can be in high demand especially during the summer season. Slowly moving vehicles seeking limited parking spaces in these areas can increase congestion or the risk of conflicts with through traffic on the highway.

Pedestrians and Bicycles

There are no existing multi-use or bike paths within the Project area boundaries; however Tahoe City PUD has a Class I multi-use path, known as the West Shore Bike Path which runs from the

Placer County/El Dorado County line south to Sugar Pine Point State Park. There are plans to extend the path from the Sugar Pine State Park boundary to the entrance of Meeks Bay Resort (California Office of Planning and Research 2001). Although there is no current data available on the status of these plans, implementation of the Project would not affect the future construction of the multi-use path.

2.1.4.3 Environmental Consequences

This Project impact analysis focuses on construction activities. On a long-term basis, the Project would neither change the capacity of SR 89 nor substantially change or provide new access to any lands that are not currently served by the existing road. Following construction, SR 89 would have improvements along the road, such as enhanced control and treatment of runoff and resurfacing of roadway shoulders and pullouts. Therefore, traffic flows and circulation would be the same as they were prior to construction.

After construction, the Project would not result in a change in the alignment or number of travel lanes on SR 89, cause a permanent increase in traffic, or change the availability of stops or routes for alternative transportation. The Project would not conflict with any adopted policies, plans, or programs supporting alternative transportation. However, there would be temporary construction-related delays as discussed below.

Contribution to a Temporary Increase in Traffic Delays

SR 89 provides the main transportation route for the Project area and is one of two integral routes for the entire South Lake Tahoe region. Thousands of vehicles use this highway daily to access residential, commercial, and recreational areas throughout the study area. Because there are no other direct routes available for residents and users of local businesses to travel to and within the Project area, this portion of SR 89 is important locally for economic and social purposes. Temporarily, the Project would require lane closures along work areas close to traffic lanes, resulting in delays. In addition, slowly moving construction vehicles could impede through traffic flow on SR 89. At least one lane in each direction would be maintained wherever possible via lane-width reductions or the use of paved shoulder areas. Traffic flow may be restricted to alternating, one-way movement where road shoulders are narrow or work takes place within the traffic lane. Delays in any one area are expected to be temporary as construction areas would progress along the length of the Project area. These effects on traffic are temporary, and every effort will be made to ensure the flow of traffic through the Project area. Implementation of the TMP, as discussed in Chapter 1, Proposed Project, would reduce this impact further by limiting the amount of time cars must spend waiting for construction, providing public information through multiple media outlets, and keeping locals and visitors abreast of changes in construction or unexpected delays. This impact is considered less than significant. No mitigation is required.

Revision of BlueGO Schedules or Stops because of Partial Roadway Closures during Construction Activities

BlueGO provides service within the Project limits along SR 89 through the seasonal operation of the Nifty Fifty Trolley and the North Shore Emerald Bay Shuttle. Once completed, the Project would not affect these routes; however, construction activities may result in temporary delays in service or the temporary relocation of the previously mentioned stops for BlueGO and the Emerald Bay Shuttle along SR 89. However, implementation of the TMP would reduce these delays and effects by developing strategies for public and motorist information, incident

management, construction, demand management, and alternate routes. Thus, this impact is considered less than significant. No mitigation is necessary.

Construction Effects on Local Circulation and Parking

During construction of the Project, shoulder and pullout parking areas may be temporarily reduced or unavailable. Access to businesses, residences, and parking areas will be maintained but may be modified or temporarily inconvenient. To minimize disruptions in use, and for the safety of recreational users in the area during construction, temporary detours would be provided for trailheads and for other recreational areas, as necessary. Because no designated bicycle facilities are located within the study area boundaries, there would be no impact on this resource. However, recreational bicyclists would experience delays similar to those of motorists because of the shared use of the highway in this area.

The Project would have a temporary effect on traffic, bicycle, and pedestrian circulation and parking access during construction. Although construction-related impacts and detours may disrupt local circulation, the impacts would be temporary, and access would be maintained. Implementation of the TMP, included as part of the Project, would reduce disruption further by developing strategies for public and motorist information, incident management, construction, demand management, and alternate routes. This impact is considered less than significant. No mitigation is required.

2.1.5 Visual/Aesthetics

2.1.5.1 Regulatory Setting

Federal

National Natural Landmarks Program

The National Natural Landmarks Program, also under the jurisdiction of the National Park Service, recognizes and encourages the conservation of outstanding examples of the country's natural history. The program identifies and recognizes the best examples of biological and geological features in both public and private ownership. Emerald Bay was designated as a National Natural Landmark in 1968 as an outstanding example of glacial geology (California Department of Transportation 2007a).

State

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

State Scenic Highway Program

The state Scenic Highway Program, created by the California Legislature in 1963, was established to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A highway is officially designated under this program when a local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated a scenic highway (California Department of Transportation 2007a). SR 89 through the Project limits is an officially designated state scenic highway (California Department of Transportation 2008b).

Tahoe Regional Planning Agency

TRPA is charged with protecting Lake Tahoe and the basin for the benefit of current and future generations. The 1980 revised Compact, between state and federal agencies, gives TRPA the authority to adopt and enforce environmental quality standards. These standards were designed to achieve desired thresholds and were adopted in 1982 (California Department of Transportation 2008b).

One of the primary objectives embodied in the TRPA revised Compact is the preservation of the scenic values of the Lake Tahoe Basin, which are closely linked to the social and economic health of the region (TRPA Compact; Public Law 96-551, December 19, 1980; Article I). TRPA has inventoried and rated roadway segments and travel routes in the region, including segments within the Project area, to determine scenic resource values from roadway vantage points. Based on TRPA's 1982 inventory of resources in the Lake Tahoe Basin, TRPA established threshold standards for the protection and enhancement of scenic quality, and evaluated performance in achieving those levels on a regional basis. TRPA requires that the numerical threshold assigned to each rated roadway segment, or travel route, be maintained or improved (California Department of Transportation 2007a).

From the final 2006 Threshold Evaluation Report (Tahoe Regional Planning Agency 2007), the following TRPA thresholds apply to scenic resources:

- **SR-1 Travel Route Rating:** The travel route rating threshold (known as composite threshold score) tracks long-term, cumulative changes to views seen from major roadways in urban and natural landscapes in the region and to views seen from Lake Tahoe looking toward the shore. To secure threshold attainment, all travel routes with a 1982 rating of 15.5 (roadway) or 7.5 (shoreline) or greater must maintain their scores, and all travel routes with a 1982 score of 15 (roadway) or 7 (shoreline) or less must improve their scores until the score is reached (Tahoe Regional Planning Agency 2007).
- **SR-2 Scenic Quality Rating:** The scenic quality rating threshold protects specific views of scenic features of Lake Tahoe's natural landscape that can be seen from major roadways and from the lake. To secure threshold attainment, all 1982 scenic quality scores must be maintained.

This threshold assesses visual features for a composite score, which averages unity, vividness, variety, and intactness. Scoring ranges from a 1 to 3, with 1 being the lowest (Tahoe Regional Planning Agency 2007).

- **SR-3 Public Recreation Areas and Bike Trails:** The public recreation area threshold protects the viewshed from public recreation areas and certain bicycle trails. To secure threshold attainment, all 1993 scenic quality scores must be maintained. This threshold is quantified using the composite threshold score (Tahoe Regional Planning Agency 2007).
- **SR-4 Community Design:** The community design threshold is a policy statement that applies to the built environment and is not restricted to roadways or shoreline units. Design standards and guidelines found in the Code of Ordinances, the Scenic Quality Improvement Program, and in the adopted Community Plans provide specific implementation direction. To secure threshold attainment, design standards and guidelines must be widely implemented to

improve travel route ratings and produce built environments compatible with the natural, scenic, and recreational values of the region (Tahoe Regional Planning Agency 2007).

TRPA Tree Removal Ordinances

Cutting, moving, removing, killing, or materially damaging live trees; removing disease-infested and hazardous trees; and attaching appurtenances to trees (6 inches diameter at breast height and larger) require TRPA permit approval. Trees of “limited occurrence” (such as aspen, black cottonwood, ponderosa pine, Douglas fir, incense cedar, sugar pine, western white pine, mountain hemlock, whitebark pine, and western juniper) should be managed for protection and enhancement and for promotion of late stage or old growth characteristics (TRPA Code of Ordinances, Chapter 71). Replacement ratios and planting requirements generally are determined by TRPA on a case-by-case basis (California Department of Transportation 2007a).

El Dorado County General Plan

Policy TC-1w of the Transportation and Circulation Element of the El Dorado County General Plan (El Dorado County 2004) states, “New streets and improvements to existing rural roads necessitated by new development shall be designed to minimize visual impacts, preserve rural character, and ensure neighborhood quality to the maximum extent possible consistent with the needs of emergency access, on-street parking, and vehicular and pedestrian safety” (California Department of Transportation 2007a).

2.1.5.2 Affected Environment

The visual environment is defined as the area along SR 89 from which the public could see the Project facilities.

Site and Vicinity

The Project is located in the highly scenic Lake Tahoe Basin. The region is known for its picturesque natural setting and year-round recreation attractions. Millions of visitors from North America and around the world visit the region annually. The area also is known for its sensitive ecological balance. In recent years, Lake Tahoe area forest health and water quality have gained national attention from government and private interests. Clarity of the lake has been diminishing rapidly over the past several decades, sparking major efforts to identify and reverse causes of clarity problems. Concerns for scenic resource protection are gaining momentum in the region. As the local population increases and continues to consume developable land, local and state agencies are concerned that unmanaged growth could impair the very resource that attracts visitors to the region. As a result, strict planning, land use, and design guidelines have been adopted to manage development (California Department of Transportation 2008b).

As discussed above, SR 89 through the Project limits is an officially designated state scenic highway. The highway is a major corridor for traffic between the north and south shores of Lake Tahoe. SR 89 is used heavily at times by both recreational and local traffic.

Native Vegetation

The Project is located in an area characterized by “Sierra Nevada Montane” vegetative communities. Upland overstory vegetation is composed primarily of lodgepole pine (*Pinus contorta*), Jeffrey pine (*Pinus jeffreyi*), and red fir (*Abies magnifica*). Understory plant species are primarily bush chinquapin (*Chrysolepis sempervirens*), white leaf manzanita (*Arctostaphylos*

manzanita), and mountain snowberry (*Symphoricarpos laevigatus*). Common riparian vegetation is primarily white alder (*Alnus rhombifolia*), black cottonwood (*Populus trichocarpa*), and various willow (*Salix* spp.) species. Many large trees exist along the roadside throughout the Project limits. Native vegetation provides a critical component that ties the roadside to the surrounding landscape pattern. It also provides an important buffer that benefits the landowner, recreational user, and motorist by screening undesirable views (California Department of Transportation 2008b).

Vistas and Views

A variety of views exist within the Project limits. From D. L. Bliss Park there are brief panoramic views of the lake, which are broken up by foreground pines, both northbound and southbound. Rubicon Creek creates an opening in the forest growth, and rock outcroppings and boulders create scenic surroundings near the entry to the State Park (California Department of Transportation 2008b).

From Kehlet Drive (a lookout point) toward Meeks Bay to the northeast, there are views of a broken panorama to the west, and distant views of peaks to the southwest. There are interrupted panoramic views to the east and south, and panoramas of the lake with the development in the foreground. Some residential areas are visible from the roadway as well (California Department of Transportation 2008b).

TRPA Scenic Resources

Roadway projects in the Lake Tahoe Basin must consider TRPA's Lake Tahoe Basin Scenic Resource Inventory.

Roadway Units and Ratings

TRPA has inventoried and rated roadway segments throughout the Lake Tahoe Basin to determine scenic resource values from roadway vantage points. The TRPA roadway units described below fall within the limits of the Project area. The roadway unit ratings are broken into two categories: composite threshold score and scenic quality rating. Additional details about each of these roadway units are provided in the Visual Impact Assessment prepared for the Project (California Department of Transportation 2008b).

Roadway Unit 4, D.L. Bliss State Park. 2001 Composite Threshold Score = 21; Scenic Quality Rating = 3. This roadway unit comprises the southern portion of the Project area, beginning in forested lands and then traveling northward through Paradise flat. This roadway unit meets the TRPA minimum attainment threshold with an overall Composite Threshold score of 21 (California Department of Transportation 2008b).

Roadway Unit 5, Rubicon Bay and Lonely Gulch. 2001 Composite Threshold Score = 17; Scenic Quality Rating = 2. This roadway segment includes the northern portion of the Project area. At Meeks Bay Drive and Rubicon Drive the forested area that surrounds the roadway opens up to panoramas of the south lake area. This roadway meets the TRPA minimum attainment threshold with an overall Composite Threshold score of 17 (California Department of Transportation 2008b).

Public Recreation Areas

Because of the proposed Project's close and continuous proximity to public recreation areas, this assessment was made with consideration of the TRPA public recreation area inventory. TRPA has inventoried and rated public recreation areas and bike trails throughout the Lake Tahoe Basin to ascertain scenic resource values visible from these areas. Generally, TRPA requires that the numerical threshold for each public recreation area unit be maintained or improved based on 1993 values (California Department of Transportation 2008b).

D. L. Bliss State Park is a TRPA Public Recreation Area unit and falls within the limits of the proposed Project. The southern portion of the Project area traverses the State Park for approximately 2 miles (California Department of Transportation 2008b). All recreation facilities are located within 0.5 miles of the Project. However, none of these facilities are located immediately adjacent to SR 89. There are no designated bike trails or routes within the Project limits.

2.1.5.3 Environmental Consequences

Approach and Methodology

This analysis is summarized from the Visual Impact Assessment technical memorandum prepared for the Project (California Department of Transportation 2008b), as well as applicable portions of the *Visual Resources Impact Report: Lake Tahoe Basin Environmental Improvement Program* (Haygood & Associates 2006) and the Draft PEIR (California Department of Transportation 2007a) prepared for the Water Quality Improvements Program that Caltrans is proposing in El Dorado County. The visual assessment primarily addresses new manmade components being introduced into the Project area. Views from SR 89, surrounding residences and off-roadway recreational areas, campgrounds, and trails were considered. The assessment assumes that replacement of an existing drainage facility as well as curbs and gutters in kind would not change the environment and does not warrant further discussion. Where the exact dimensions of Project components are unknown, the impact was analyzed in general terms (California Department of Transportation 2008b).

Environmental Consequences Discussion

At an undetermined amount of locations, the flattening of existing slopes and revegetation of bare or erodable areas is proposed throughout the Project area. This Project feature would eliminate bare areas, which are comprised of different qualities than their surroundings by blending the roadway with the natural environment, thus improving the visual quality of the Project area. Furthermore, the flattening of excessively steep slopes would allow for vegetative growth (California Department of Transportation 2008b). As a result, this Project feature would have a positive impact on the overall visual quality of the roadway segment, and therefore will not be discussed further.

Impact VIS-1: Temporary Change in Views during Construction (Less than Significant)

Construction of the Project is estimated to take three to four seasons. During these activities, viewers temporarily would see materials, equipment, workers, and construction operations, including trenches, excavations, and structures in the process of being built. Motorists and pedestrians will be exposed to construction activities while passing through the construction zones (Haygood & Associates 2006). In addition, Project components would temporarily be visible to visitors and campers looking toward SR 89 (California Department of Transportation

2008b). Residents of adjacent homes and business owners and employees will be exposed to construction activities on a more continuous basis (Haygood & Associates 2006). Impacts of construction operations are unavoidable but would be transient within the approximately 7-mile long Project area as each element of the Project is constructed. Because construction impacts of each Project component would be temporary, and would transition along the roadway segments as work is completed, they are considered to be less than significant (California Department of Transportation 2007a). Environmental commitments, described below, would be included as part of the Project to address visual resource issues. Therefore, no mitigation is necessary.

Impact VIS-2: Change in Views and Scenic Quality after Installation of Water Quality Improvements (Less than Significant)

Specific construction components that could potentially impact scenic resources within the Project area include infiltration basins, rock slope protection (RSP), flattening of existing slopes and revegetation of bare or erodible area, sand traps, end treatment of culverts, pretreatment of existing swales, maintenance vehicle pullouts (MVPs), and proposed paved pullouts. The construction and operation of these components would create additional roadside distractions and manmade features along SR 89 and would change views within the specific roadway units identified by TRPA. Views from surrounding residences, as well as off-roadway recreational areas, campgrounds, and trails, would also be affected. The impacts of these Project components are discussed further below.

Infiltration Basins

The Project proposes the construction of up to 12 infiltration basins (California Department of Transportation 2008b). For the purpose of collecting water, infiltration basins are designed to be shallow areas usually one to two feet in depth. Construction of these basins would require removal of vegetation (including up to 130 trees) grading and excavation. However, this disturbance would only occur during construction. Following construction, the basins would be revegetated. The basins would be designed with irregular shapes to minimize tree removal and blend in with the existing surroundings (California Department of Transportation 2008b).

Rock Slope Protection (RSP)

An undetermined amount of RSP locations are proposed throughout the Project area. RSP locations would consist of a number of rocks arranged on grade in a tight cluster in order to protect slopes that are too steep to support vegetative growth. The RSP would be visible due to the color variation between the rocks and the surrounding forest floor. Additional distinctions making the RSP visible from SR 89 also include the lack of similar natural rock outcroppings in the vicinity, and the hard unnatural lines created at the boundary of the RSP location (California Department of Transportation 2008b).

Sand Traps

Sand traps are primarily underground, with only a small percentage of the structure visible. Though obviously manmade and considered foreign objects to the surrounding environment, they are not readily visible to the traveling public. They are located below the grade of the traveled roadway and tend to be visible only if people are traveling at extremely low speeds or walking/bicycling along the highway shoulder. The sand traps' "lids" usually collect debris such as soil and rocks, making for a natural disguise (California Department of Transportation 2008b).

End of Treatment of Culverts

Following completion of Project construction, an undetermined amount of end treatments would be located throughout the Project limits. End treatments slow the velocity of water exiting the culvert, thus reducing the amount of scour that is produced. As discussed below, the four types of treatments vary in their level of visibility.

The rock “riprap” would have the highest level of visibility. Similar to existing rock slope protection in the Lake Tahoe Basin, the rock riprap would consist of a number of rocks arranged on grade, in a tight cluster. The riprap would be visible because of the color variation between the rocks and the surrounding forest floor, the lack of similar natural rock outcroppings in the vicinity, and the hard unnatural lines created at the boundary of the treatments.

Rock check dams would have the next highest level of visibility. The series of check dams would create small pools where the water momentarily collects as it flows downhill. This momentary collection slows the water, allowing for fines and other particulates to settle out of the flow. Like riprap, the check dams would create color variations between the rocks and the surrounding forest floor, as well as hard unnatural lines created by the series of dams. Unlike riprap, though, the check dams would not be of a size that would create the appearance of rock outcroppings.

Sand traps would have the next level of visibility. See the “Sand Traps” section above for the treatment description and visual impacts.

The lowest level of visibility would be the drywell/infiltration trench. This treatment is a gravel-filled trench constructed along the bottom of a swale. The low visibility of this treatment is due to the location of the structure. The trench is underground, with the top of the gravel flush with the grade of the swale. Like all rock structures in this area, the color of the gravel within the trench would vary from the surrounding forest floor, as well as create hard, unnatural lines at the boundary of the gravel.

A minimal amount of ground-level vegetation may require removal for the placement of the treatments. The end treatments would be located “below” the level of the roadway, which tends to make them less visible from the traveled roadway. Over time, the end treatments would collect silt, debris, and vegetation, blending them into the surrounding environment. The type, length, width, and number of the end treatments vary depending on the size and predicted flow of the culvert as well as the topography of the land where the treatment would be placed. Whenever possible, the most visually appropriate treatment type would be selected (California Department of Transportation 2008b).

Pre-Treatment of Existing Swales

The pre-treatment of existing swales would be completed where feasible at locations where existing swales currently drain into SEZ areas. This adds another method of treatment to stormwater just before it drains off site. The proposed methods for pre-treatment of existing swales would be similar to those of the proposed end treatment for culverts. See the “End Treatment of Culverts” section above for treatment descriptions and corresponding visual impacts (California Department of Transportation 2008b).

Maintenance Vehicle Pullouts (MVP) and Proposed Paved Pullouts

To the extent feasible, the proposed MVPs would be located in a manner that would blend with the existing environment and have the least amount of site disturbance. Placement would be selected where there are already existing level areas large enough to accommodate the MVP. No retaining walls or cuts are anticipated for construction.

The proposed paved pullouts, like MVPs, are located throughout the Project area. They are placed to take advantage of existing site planning in those locations that are already being used as pullouts. There would be no vegetation removal, and there would be no visual enhancements to make them unduly visible. Because no vegetation would be removed, and the dimensions of the pullouts would not change, they would have a similar appearance as they did prior to paving (California Department of Transportation 2008b).

Construction of these components has the potential to change scenic views. However, Project features would be designed using TRPA thresholds and criteria requirements. Proposed improvements are not expected to degrade current TRPA scenic threshold scores for roadway units, recreation areas, and bike trails within the Project area. With the implementation of the four specific environmental commitments VIS-01, 02, 03, and 04 below, the impacts on visual resources would be reduced. As a result, this impact is considered less than significant. No mitigation is necessary.

Environmental Commitments

VIS-01: General Scenic Measures

The following general measures meet TRPA scenic threshold requirements and will be implemented as part of Project design and construction.

- All disturbed areas will use temporary erosion control measures during construction to minimize permanent impacts on visual quality.
- All areas disturbed during construction will receive permanent erosion control measures to minimize permanent impacts on scenic quality.
- All disturbed areas will be planted with a permanent seed mix composed of native plant species indigenous to the area. In addition, if required, a follow-up revegetation project will install containerized plants to supplement seeding. All removed non-native landscape planting will be replaced in kind. All native vegetation removed will be replaced in ratios determined by Caltrans' Landscape Architecture Branch. The requirements of this revegetation will be incorporated into a restoration and monitoring plan prepared by the Landscape Architecture Branch and will be submitted for approval by the appropriate agencies prior to Project permitting.
- All small trees, tree limbs, shrubs and other woody debris generated during clearing and grubbing operations will be chipped and stockpiled for future use as erosion control and in areas designated for revegetation.
- During clearing and grubbing operations, duff will be stripped and stockpiled as part of earthwork. The duff will be replaced in areas where revegetation work will occur.

- Any water quality improvement ditches required will be earthen or rock lined whenever possible.

VIS-02: Site-Specific Design Measures for Infiltration Basins

The following measures specific to the design and construction of infiltration basins will be implemented and meet TRPA scenic threshold requirements.

- Each basin shape will have a site-specific design to maximize infiltration and minimize tree removal. Where feasible, and where the long-term health of trees can be maintained, the basin will be irregularly shaped around existing trees. Infiltration basins will be designed to eliminate harsh angles that appear human-made, with features integrated into the surroundings through the use of curvilinear forms and contour grading.
- All disturbed areas associated with basin construction will be revegetated using seeding, container planting, pine needle mulch, and temporary irrigation where required. In addition, logs and boulders will be integrated into the basin design where appropriate. This integration will help to blend the newly constructed basins into the surrounding environment.
- Infiltration basins will avoid the use of concrete or RSP lining. By avoiding these two items, the newly constructed basins will better blend into the surrounding environment.

VIS-03: Site Specific Design Measures for Sand Traps

The following measures specific to the design and construction of sand traps will be implemented and meet TRPA scenic threshold requirements.

- Sand traps will be installed in the least visible locations possible while still accomplishing their designed function. Their structures will be painted or powder-coated with approved Standard Federal Color Brown #30045 or Green #34108. The specific color will be selected to match the color of any existing elements in the immediate area.
- All disturbed areas associated with sand trap installation will be revegetated using seeding, container planting, or pine needle mulch.

VIS-04: Site-Specific Design Measures for Rock Slope Protection, End Treatment of Culverts, and Pre-treatment of Existing Swales

The following measures specific to the design and construction of RSP, culvert end treatments, and the pre-treatment improvements of existing swales will be implemented and meet TRPA scenic threshold requirements.

- Procured from a source within the Lake Tahoe Basin, the character of the rock treatments will have an indigenous feel as to size, shape, material, and color. Edges will have an irregular shape to facilitate a more natural feel to aesthetic composition.
- Environmentally benign stains will be used on treatments to induce a weathered appearance that blends elements into the existing landscape.
- For highly visible treatment areas, containerized native plantings will be used to strategically blend culvert end treatments into the landscape or screen them from view.

2.1.6 Cultural Resources

2.1.6.1 Regulatory Setting

Cultural resources, in this document, refer to all historical and archaeological resources, regardless of significance. Laws and regulations applicable to this Project that address cultural resources include Section 106 of the National Historic Preservation Act (NHPA) and CEQA.

The NHPA of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 773) (July 1, 2007).

Historical resources are considered under CEQA, as well as PRC 5024.1, which established the California Register of Historical Resources (CRHR). PRC 5024 requires state agencies to identify and protect state-owned resources that meet NRHP listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. PRC 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion on the NRHP or are registered or eligible for registration as California Historical Landmarks.

2.1.6.2 Affected Environment

A comprehensive cultural resources study, consisting of archaeological and historic built-environment research and field surveys, was conducted for the Project. The research and field surveys for the Project are described in detail in a Historic Property Survey Report and an Archaeological Survey Report (Jones & Stokes 2008a, 2008b). The methods and results reported in these two documents are summarized below.

Methods

The effort to identify cultural resources in the study area consisted of the delineation of an area of potential effects (APE), a records search of the California Historical Resources Information System (CHRIS) and the LTBMU, Native American and other interested-party consultation, and a pedestrian survey of the APE. The results of the research and consultation are included below.

Records Searches

Records searches were conducted in 2007 at the CHRIS and the LTBMU. The records searches included a review of all recorded archaeological sites, historic structures, and other known cultural resources within the Project's APE and a 0.5-mile radius around it, as well as a review of reports for all known cultural resources studies conducted within close proximity of the APE.

Sources consulted included base maps marked with the locations of previous cultural resource studies and known cultural resources. In addition, bibliographic sources were consulted and are outlined in the technical reports prepared for the Project (Jones & Stokes 2008a, 2008b). The records searches indicated that 15 previous cultural resource studies had been conducted within the present APE. In addition to the studies identified, the records searches indicated that five non-exempt cultural resources had been recorded previously in the APE:

- P-9-3401 (Historic SR 89 Segments 1–6)
- P-9-3408 (Road 1)
- P-9-3409 (Road 2)
- P-9-3414 (Road 7)
- P-9-3416 (Telegraph Line)

Native American Contacts

Based on the correspondence list and discussion contained in the *Archaeological Survey Report for the Lake Tahoe Basin Environmental Improvement Program* (Dexter 2006), individuals and organizations were contacted as part of Caltrans' efforts to consult with Native Americans concerning the Project:

- Bridget Zellner, chairperson, Todd Valley Miwok-Maidu Cultural Foundation
- Christopher Suehead, cultural representative, Todd Valley Miwok-Maidu Cultural Foundation
- the El Dorado County Indian Council
- Lynda Shashone, Washoe Archive & Cultural Center, Washoe Tribe of Nevada and California (Washoe Tribe)
- Waldo W. Walker, chairperson, Washoe Tribe.

Caltrans sent letters to those representatives listed on September 29, 2007. The letters included a brief Project description and a map of the Project area and requested that the recipient respond with any information or concerns.

Follow-up telephone calls were placed to Ms. Zellner, Mr. Suehead, the El Dorado County Indian Council, and Ms. Shashone on November 20, 2007. An attempt was also made to contact Mr. Suehead by email on November 20, 2007. No responses have been received as of the date of this writing.

On November 19, 2007, Caltrans archaeologist Julia Green met with Ms. Shashone to discuss Washoe resources in the Project vicinity. Ms. Shashone indicated that the Meeks Creek area is considered sensitive for the presence of archaeological materials because of the location of archaeological site CA-ELD-2512 (P-9-3861/FS 05-19-301) in Meeks Bay. CA-ELD-2512 is located outside the APE.

On November 26, 2007, Ms. Green met with additional members of the Washoe Tribe to discuss their concerns about cultural resources. The Washoe Tribe members stated that in flat areas of the APE, important medicinal plants, such as bracken fern and yarrow, need to be avoided. Mr. Daryl Cruz of the Washoe Tribe stated that the lack of archaeological materials on the ground surface does not necessarily indicate a lack of buried archaeological deposits in the APE because the soils in the Lake Tahoe Basin are “highly erodible.”

Historical Society Contacts

Letters describing the Project and requesting any information about potential cultural resources in the APE were sent to the El Dorado County Historical Society and Museum, Heritage Association of El Dorado County, Lake Tahoe Historical Society and Museum, Tahoe Heritage Foundation, North Lake Tahoe Historical Society, and Tahoe Maritime Museum. These letters were sent on November 19, 2007. No response has been received as of January 10, 2008.

Archaeological Survey

Two professionally qualified archaeologists conducted a pedestrian survey of the archaeological APE on October 2, 2007. Transects no wider than 49 feet were used. In the more narrow portions of the APE transects were spaced 16–33 feet wide. Much of the terrain in the APE is steep and has heavy vegetation. These areas could be covered only by cursory survey. In areas that could be accessed, visibility ranged from 30% to 60%, and in areas where heavy duff obscures the ground surface, boot scrapes were used every 33 feet to better inspect the ground for potential resources (Jones & Stokes 2008b:20).

Architectural Survey

Two professionally qualified architectural historians surveyed the APE for the presence of built-environment resources on October 4, 2007. The survey included all built-environment resources that could be affected by Project features. The field survey revealed that there are no visible physical remains of historical resources located within the built environment APE that required formal evaluation.

Identified Cultural Resources

A total of five previously recorded cultural resources have been identified in the APE: P-9-3401 (Historic SR 89, Segments 1–6), P-9-3408 (Road 1), P-9-3409 (Road 2), P-9-3414 (Road 7), and P-9-3416 (Telegraph Line). None of these resources have been evaluated for NRHP or CRHR eligibility. No evidence of these resources was present during the 2007 field surveys.

2.1.6.3 Environmental Consequences

No known historic properties, historical resources, or unique archaeological resources will be affected by the proposed Project, consistent with a “No Historic Properties Affected” finding under Section 106 of the NHPA (Jones & Stokes 2008a). Construction activities, including equipment staging and traffic, have the potential to damage or destroy archaeological resources obscured by dense vegetation or buried under recently deposited sediments. If cultural materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find. California Health and Safety Code Section 7050.5 requires that if human remains are discovered, further disturbances and activities must cease in any area or nearby area suspected to overlie remains, and the El Dorado County Coroner be contacted. Pursuant to PRC

5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, which then will notify the most likely descendent. At this time, the person who discovered the remains will contact Caltrans District 3 Team Tahoe so that it may work with the most likely descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

2.2 Physical Environment

2.2.1 Hydrology and Floodplains

2.2.1.1 Regulatory Setting

As discussed at the beginning of Chapter 2, no impacts were identified for Surface Water, Groundwater, or Flooding.

2.2.2 Water Quality and Stormwater Runoff

2.2.2.1 Regulatory Setting

Federal and State Regulations

CWA Section 401 requires water quality certification from the SWRCB or an RWQCB when the project requires a CWA Section 404 permit. Section 404 requires a permit from USACE to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the NPDES permit requirements for the discharge of any pollutant into waters of the United States. The U.S. Environmental Protection Agency (EPA) has delegated administration of the NPDES program to SWRCB and nine RWQCBs. The Project falls under the jurisdiction of the Lahontan RWQCB. SWRCB and the RWQCB also regulate other waste discharges on land in California through the issuance of waste discharge requirements (WDRs) under authority of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

SWRCB has developed and issued a statewide NPDES permit to regulate stormwater discharges from all of Caltrans' activities on its highways and facilities. Caltrans' construction projects are regulated under this permit, and projects performed by other entities on Caltrans right-of-way (encroachments) are regulated by SWRCB's statewide NPDES General Permit for Construction (General Construction Permit). The Lahontan RWQCB enforces the General Construction Permit and established a WDR (Board Order No. R6T-2005-0007) for construction activities within the Lake Tahoe Hydrologic Unit. As a result, Lahontan RWQCB General Permit No. CAG616002 applies and supersedes Caltrans' General Construction Permit (CAS 000002) within the Lake Tahoe Hydrologic Unit (California Regional Water Quality Control Board 2005). All construction projects covering more than one acre require a SWPPP to be prepared and implemented during construction. Caltrans activities covering less than one acre require a water pollution control program.

Municipal Separate Storm Sewer System Program

EPA defines the Municipal Separate Storm Sewer System (MS4) Program to include a stormwater conveyance or system of conveyances (i.e., roads with drainage systems, municipal

streets, catch basins, curbs, gutters, ditches, manmade channels, and storm drains) that is owned or operated by a state, city, town, county, or other public body having jurisdiction over the disposal of stormwater. EPA's Phase II Final Rule includes permit requirements for designated small municipalities that maintain control of a separate storm sewer system. The objectives of the Phase II regulations are to reduce the discharge of pollutants to the maximum extent practicable and to protect water quality. Caltrans holds an MS4 permit that includes stormwater conveyances along the Project segment and meets or exceeds the requirements of the small municipalities within the area.

Clean Water Act Section 303(d): Total Maximum Daily Load

The State of California adopts water quality standards to protect beneficial uses of state waters as required by CWA Section 303(d) and, separately, by the Porter-Cologne Act. Section 303(d) established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see the description of state water quality standards in the section below). To identify candidate water bodies for TMDL analysis, a list of water quality-limited streams was generated. These streams are impaired by the presence of pollutants, such as sediment, and are more sensitive to disturbance because of this impairment. TMDL regulations are adopted as part of the Lahontan RWQCB's Basin Plan.

Lahontan Regional Water Quality Control Board

The Porter-Cologne Act provides for the development and periodic review of basin plans that designate the beneficial uses of California's major rivers and groundwater basins, and that establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are primarily implemented by using the NPDES permitting system to regulate waste discharges so that water quality objectives are met (see the description of the NPDES system in the CWA discussion above). Basin plans are updated every three years and provide the technical basis for determining WDRs and taking enforcement actions.

The Lahontan RWQCB has set water quality objectives for surface waters in its region (Region 6) for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. Specific objectives for concentrations of chemical constituents are applied to water bodies based on the surface water's designated beneficial uses. Water quality objectives applicable to all groundwater have been set for bacteria, chemical constituents, radioactivity, tastes and odors, and toxicity (Lahontan Regional Water Quality Control Board 2005).

The Lahontan RWQCB implements the Basin Plan criteria through WDRs, which are issued to any entity that discharges point-source effluent to a surface water body. The WDR permit also serves as a federally required NPDES permit (under the CWA) and incorporates the requirements of other applicable regulations.

Tahoe Regional Planning Agency

TRPA is designated by California, Nevada, and EPA as the area-wide water quality planning agency under CWA Section 208. It adopted a bi-state plan, currently titled *Water Quality Management Plan for the Tahoe Basin* (208 Plan) (Tahoe Regional Planning Agency 1981). Most appropriate provisions of the 208 Plan, however, are incorporated into the Basin Plan. TRPA established some regional goals and policies that are critical in protecting Lake Tahoe's water quality. In 1982, it adopted Resolution 82-11, which includes environmental thresholds for the Lake Tahoe Basin. Among those thresholds is WQ-4—Tributaries, which establishes standards for total nitrogen, soluble inorganic nitrogen, total phosphorus, soluble phosphorus, total iron, and suspended sediment in tributary streams.

TRPA Thresholds

The TRPA *Threshold Evaluation Report* numeric water quality thresholds are as follows.

- **WQ-1**—Decrease sediment load as required to attain turbidity values not to exceed 3 nephelometric turbidity units (NTU) in littoral Lake Tahoe. In addition, turbidity shall not exceed 1 NTU in shallow waters of Lake Tahoe not directly influenced by stream discharges.
- **WQ-2**—Average Secchi depth, December–March, shall not be less than 109.6 feet.
- **WQ-3**—Annual mean phytoplankton primary productivity shall not exceed 52 grams of carbon per meter squared per year ($\text{gC}/\text{m}^2/\text{yr}$). California: Algal productivity shall not be increased beyond levels recorded in 1967–1971, based on a statistical comparison of seasonal and annual mean values.
- **WQ-4**—Attain a 90th percentile value for suspended sediment of 60 milligrams per liter (mg/L), total nitrogen range of 0.15 to 0.23 mg/L, total phosphorus range of 0.005 to 0.030 mg/L, and total iron range of 0.01 to 0.07 mg/L (annual average).
- **WQ-5**—Dissolved inorganic nitrogen: 0.5 mg/L; dissolved phosphorus: 0.1 mg/L; dissolved iron: 0.5 mg/L; suspended sediment: 250 mg/L; grease and oil: 2.0 mg/L; total phosphate as P: 0.1 mg/L; and turbidity: 20 NTU.
- **WQ-6**—Surface water infiltration into the groundwater shall comply with the Uniform Regional Runoff Guidelines. Total nitrogen: 5 mg/L; total phosphorus: 1 mg/L; total iron: 4 mg/L; turbidity: 200 NTU; and grease and oil: 40 mg/L.
- **WQ-7**—Attain existing water quality standards.

TRPA Code of Ordinances

Chapter 81 of TRPA's Code of Ordinances has additional water quality control objectives. It states that pollutants in surface runoff and waters infiltrated into soils shall not exceed specific concentrations at the 90th percentile. Please refer to the water quality study (Jones & Stokes 2007c) for additional discussion of TRPA regulations.

For Caltrans projects, a Memorandum of Understanding between TRPA and the Lahontan RWQCB acknowledges that the Lahontan RWQCB is the lead regulatory agency for water quality in the region. Lahontan RWQCB water quality thresholds can be found in the Basin Plan. The Lahontan RWQCB numeric effluent limits for runoff discharged to infiltration systems are

different from TRPA threshold WQ-6. The Lahontan RWQCB has total phosphorus and nitrogen objectives that are more conservative than the TRPA objectives. The Lahontan RWQCB numeric effluent limits for surface discharges are similar to TRPA threshold WQ-5, but this would be an inaccurate comparison of total to dissolved constituent (although WQ-5 is the same as Lahontan RWQCB limits for turbidity, grease, and oil).

2.2.2.2 Affected Environment

Stormwater

Highway stormwater runoff contains a variety of characteristic contaminants. During storm events, rainwater collects atmospheric pollutants and, upon impact, gathers roadway deposits. This runoff can affect the receiving waters negatively in various ways, including sedimentation, eutrophication, accumulation of pollutants in sediments and benthic organisms (organisms residing at the bottom of an area covered by water), and destruction of native species. The Caltrans Storm Water Research and Monitoring Program has collected water quality data for three consecutive water years (October to September, 2000–2003) from six highway runoff–monitoring sites in the Lake Tahoe Basin. Descriptions of these sites and summaries of the monitoring data can be found in the Annual Data Summary (CTSW-RT-030-054.36.02) that is submitted to the SWRCB by the Caltrans Storm Water Research and Monitoring Program. The Caltrans highway runoff value is the average concentration calculated from the highway water quality monitoring data. The average values from the 23 statewide monitoring sites (including the six located in the Lake Tahoe Basin) are listed in Table 2.2.2-1.

Table 2.2.2-1. Caltrans Statewide Stormwater Data on Pollutant Concentrations

Constituent/Parameter	Units	Average Stormwater Runoff Concentration from 23 statewide monitoring sites (6 sites in the Lake Tahoe Basin)
Conventional		
pH	pH units	7.0
Electrical conductivity	µmhos/cm	87
Total Suspended Solids	mg/L	103
Total Dissolved Solids	mg/L	83
Hardness as CaCO ₃	mg/L	34
Dissolved organic carbon	mg/L	17
Total Organic carbon	mg/L	20
Nutrients		
Nitrate (as N)	mg/L	1.0
Total Kjeldahl nitrogen	mg/L	1.0
Total phosphorus	mg/L	0.27
Dissolved orthophosphate	mg/L	0.10
Total Metals		
Arsenic	µg/L	2.5
Cadmium	µg/L	0.6
Chromium	µg/L	8
Copper	µg/L	27
Lead	µg/L	37
Nickel	µg/L	12
Zinc	µg/L	144
Dissolved Metals		
Arsenic	µg/L	0.9
Cadmium	µg/L	0.2
Chromium	µg/L	3
Copper	µg/L	13
Lead	µg/L	7
Nickel	µg/L	5
Zinc	µg/L	60

Source: California Department of Transportation 2003c.

Notes: µmhos = micromoles.
cm = centimeters.
mg = milligrams.
µg = micrograms.
L = liters.

Based on the highway stormwater runoff data collected by the Caltrans Storm Water Research and Monitoring Program, pollutants that are expected to be found in runoff from the existing roadway include conventional constituents (e.g., biochemical oxygen demand, calcium carbonate, chemical oxygen demand, total dissolved solids, total organic carbon, total suspended solids and total volatile suspended solids), hydrocarbons, metals, microbial agents, nutrients, volatile and semi-volatile organics, pesticides, and herbicides. Pollutants usually are deposited on the roadway as a result of fuel combustion processes, lubrication system losses, tire and brake wear, transportation load losses, paint from infrastructure, and atmospheric fallout. Sources of specific pollutants are outlined in Table 2.2.2-2.

Section 303(d): Listed Impaired Waterways

The CWA Section 303(d) list indicates that Lake Tahoe is impaired for nitrogen, phosphorus, and sediment (State Water Resources Control Board 2006). Rubicon Creek, the two unnamed drainages and Meeks Creek are not listed on the CWA Section 303(d) list.

Groundwater

Groundwater quality in the Tahoe West Subbasin is characterized as a mixed-cation bicarbonate type (California Department of Water Resources 2004). Analysis of 32 samples collected from various wells located throughout the subbasin indicates that the sampled waters are generally of excellent quality. Total Dissolved Solids ranged from 68 to 128 mg/L and averaged 103 mg/L (California Department of Water Resources 2004).

Table 2.2.2-2. Caltrans Pollutant Sources

Constituents	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere, maintenance, snow/ice abrasives, and sediment disturbance
Nitrogen, phosphorus	Atmosphere, roadside fertilizer application, and sediments
Lead	Auto exhaust, tire wear, lubricating oil and grease, bearing wear, and atmospheric fallout
Zinc	Tire wear, motor oil, and grease
Iron	Auto body rust, steel highway structures, and moving engine parts
Copper	Metal plating, bearing and bushing wear, moving engine parts, brake lining wear, and fungicide and insecticide application
Cadmium	Tire wear and insecticide application
Chromium	Metal plating, moving engine parts, and brake lining wear
Nickel	Diesel fuel and gasoline, lubricating oil, metal plating, bushing wear, brake lining wear, and asphalt paving
Manganese	Moving engine parts
Bromide	Exhaust
Cyanide	Anti-cake compound used to keep deicing salt granular
Sodium, calcium	Deicing salts and grease
Chloride	Deicing salts
Sulfate	Roadway bed, fuel, and deicing salts
Petroleum	Spills, leaks or blow-by of motor lubricants, antifreeze and hydraulic fluids, and asphalt leachate
PCBs, pesticides	Spraying of highway rights-of-way, atmospheric deposition, and PCB catalyst in synthetic tires
Pathogenic bacteria	Soil litter, bird droppings, and trucks hauling livestock/stockyard waste
Rubber	Tire wear
Asbestos ^a	Clutch and brake lining wear

Source: Federal Highway Administration 1996..

^a No mineral asbestos has been identified in runoff; however, some breakdown products of asbestos have been measured.

2.2.2.3 Environmental Consequences

Impacts related to water quality were analyzed qualitatively, based on professional standards and the conclusions of technical reports prepared for the Project. The key effects were identified and evaluated based on the physical characteristics of the Project study area and the magnitude, intensity, and duration of activities.

The purpose of the Project is to improve the control and flow of stormwater runoff into existing or upgraded facilities. When complete, the Project would only slightly increase the amount of impervious surface, resulting in concentrating and possibly redirecting flows to specified water quality treatment facilities. Such Project features that would increase the amount of impervious

surface would be the paving of unpaved driveways. By design, this small increase in impervious surface would not increase the amount of erosion or sedimentation to any of the local waterways. The Project would be beneficial to the drainage patterns in the area, and the sediment traps would be beneficial in filtering out sediments and other related contaminants such as phosphorus and nitrates whose runoff would otherwise lead to eutrophication in Lake Tahoe.

Impact WQ-1: Substantial Alteration in the Quality of Surface Runoff, Including Violation of Any Water Quality Standards or WDRs that Would Impact Surface Water or Groundwater Quality (Less than Significant)

Construction-related earth-disturbing activities related to all Project components could cause soil erosion and sedimentation to local waterways. Construction of sand traps and other water quality improvements would require heavy equipment, such as earth-moving devices. Such machines have the potential to leak hazardous materials that may include oil and gasoline. Contractors would be required to use standard containment and handling protocols to ensure that these vehicles do not leak any material that might harm the quality of local surface water or groundwater. Construction would be governed by the *Statewide Storm Water Management Plan* (CTSW-RT-07-182-1.1), which includes measures to prevent, minimize, and reduce impacts from any spill or discharge. These measures would ensure that the Project's impact on surface runoff would be less than significant.

Additionally, contractors would implement measures required under the General Construction Permit. Before the onset of any construction activities, the contractor would be required to obtain a General Construction Permit. Caltrans would be responsible for ensuring that construction activities comply with the conditions in this permit, which would require development of a SWPPP, implementation of BMPs identified in the SWPPP, and monitoring to ensure that effects on water quality are minimized. Furthermore, an Erosion and Sedimentation Control Plan (ESCP) is required for construction and is discussed in more detail in Section 2.2.3.

The following erosion and sediment control BMPs are examples of the types of BMPs that should be included in the SWPPP.

- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- Control and contain soil and filter runoff from disturbed areas, by using berms, silt fencing, straw bales or wattles, plastic sheeting or geofabric, silt/sediment traps and catch basins, silt fencing, sand bag dikes, temporary vegetation or other groundcover, or other means necessary to prevent the escape of sediment from the disturbed area.
- No earth or organic material will be deposited or placed where it may be carried directly into a stream, marsh, slough, lagoon, or body of standing water.
- Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water.

- Dewatering activities will be conducted according to the provisions of the SWPPP. No dewatered materials will be placed in local water bodies or in storm drains leading to such bodies without implementation of proper construction water quality control measures.
- Drainage facilities in downstream off-site areas will be protected from sediment, using BMPs acceptable to El Dorado County and the Lahontan RWQCB.
- Grass or other vegetative cover will be established on the construction site as soon as possible after disturbance.

Final selection of BMPs will be subject to review by Caltrans. Caltrans will submit a Notice of Construction to the RWQCB, filed before allowing construction to begin. Caltrans or its agent will perform routine inspections of the construction area to verify that the BMPs specified in the SWPPP are properly implemented and maintained. Caltrans will notify its contractors immediately if there is a noncompliance issue and will require compliance.

If a spill has occurred during construction and would affect surface water quality or groundwater quality, Environmental Commitment WQSR-01 at the end of this section would reduce this impact to a less-than-significant level.

Environmental Commitments

Environmental Commitment WQSR-01: Develop and Implement a Spill Prevention, Control, and Countermeasure Program for Construction Activities

Caltrans or its contractor will develop and implement a Spill Prevention, Control, and Countermeasure Program (SPCCP) to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and federal water quality regulations.

Caltrans will review and approve the SPCCP before the onset of construction activities. Caltrans will routinely inspect the construction area to verify that the measures specified in the SPCCP are properly implemented and maintained. Caltrans will notify its contractors immediately if there is a noncompliance issue and will require compliance.

The federal reportable spill quantity for petroleum products, as defined in 40 CFR 110, is any oil spill that:

- Violates applicable water quality standards
- Causes a film or sheen on or discoloration of the water surface or adjoining shoreline
- Causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the contractor's superintendent will notify Caltrans, and Caltrans will take action to contact the appropriate safety and cleanup crews to ensure that the SPCCP is followed. A written description of reportable releases must be submitted to the Lahontan RWQCB. This submittal must contain a description of the release, including the type of material, an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a

description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form.

If an appreciable spill has occurred, and results determine that Project activities have affected surface water or groundwater quality adversely, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, Caltrans and its contractors will select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by Caltrans.

2.2.3 Soils, Soil Conservation, and Geology

2.2.3.1 Regulatory Setting

Tahoe Regional Planning Agency

TRPA Thresholds

The following TRPA thresholds apply to soil conservation:

- SC1—The TRPA threshold for soil conservation requires that impervious coverage comply with the coverage coefficients defined in the *Land-Capability Classification of the Lake Tahoe Basin, California-Nevada: A Guide for Planning* (Bailey 1974). Additional land coverage is monitored on a project basis and recorded in square feet. Coverage may be used directly or by coverage transfers within a related project area. An excess coverage mitigation program is in place to gradually reduce existing land coverage.
- SC2—TRPA policy requires the preservation of existing naturally functioning SEZ lands in their natural hydrologic condition; the restoration of all disturbed SEZ lands in undeveloped, unsubdivided lands; and the restoration of SEZ lands that have been identified as disturbed, developed or subdivided, to obtain a 5% total increase in the area of naturally functioning SEZ lands.

TRPA and El Dorado County Grading Regulations

TRPA and El Dorado County have enacted grading ordinances intended to protect the public, property, and the environment against adverse effects resulting from excavation, filling, and vegetation removal and to ensure that proposed grading activities are consistent with the El Dorado County General Plan and TRPA Regional Plan. TRPA's grading regulations are contained in Chapter 64 of TRPA's Code of Ordinances (Tahoe Regional Planning Agency 2004), and the County's grading regulations are contained in Chapter 15.14 of the El Dorado County Code (Ordinance 4719) (El Dorado County 2007). Both ordinances describe specific grading limitations and prohibitions and require preparation of a detailed Erosions and Sediment Control Plan (ESCP) that includes the measures that would be used to control accelerated runoff, erosion, and sedimentation during and after the completion of Project construction. Caltrans projects in the Lake Tahoe Basin are required to comply with the requirements of both grading ordinances.

2.2.3.2 Affected Environment

The study area spans a series of nearly level to moderately steep alluvial, glacial, and residual granitic landforms along the southeastern edge of Lake Tahoe (Saucedo 2005). The alluvial and glacial landforms are underlain by unconsolidated Holocene floodplain deposits and slightly older Pleistocene Tahoe and Tioga till deposits. Overlying soils are mapped primarily as soils of the Tallac, Meeks, Elmira, Christopher, Gefo, and Jabu series (U.S. Department of Agriculture Natural Resources Conservation Service 2007), which typically consist of shallow to moderately deep, well drained, coarse to moderately coarse-textured soils underlain by unconsolidated alluvium and glacial till. The residual granitic landforms in the study area are underlain by Cretaceous diorite, gabbro, and Phipps Pass granodiorite. Soils overlying these granitic landforms are mapped primarily as soils of the Cagwin series, which typically consist of shallow to moderately deep, somewhat excessively drained soils underlain by weathered granitic bedrock.

Unstable Geologic Units and Landslide Hazards

The U.S. Geological Survey (USGS), the California Geological Survey, and the County have not identified any unstable geologic units in the study area and have not produced any landslide inventory or landslide hazard maps for the study area or the SR 89 corridor (EDAW 2003; California Geological Survey 2007a, 2007b).

Erosion Hazard

The soil map unit descriptions provided by U.S. Department of Agriculture Natural Resources Conservation Service (2007) indicate that the hazard of erosion in the study area ranges from slight to high and varies depending on factors such as slope gradient, soil infiltration rates, and soil erodibility.

Expansive Soils

The soil map unit descriptions provided by U.S. Department of Agriculture Natural Resources Conservation Service (2007) indicate that soils in the study area are primarily coarse-textured and nonexpansive.

Bailey Land Capability System

All land areas in the Lake Tahoe Basin have been classified into one of seven land capability classes based on their sensitivity to disturbance and development. A soil type with a capability of 1 would be the most environmentally fragile and sensitive to development. Wherever land was found to be influenced by a stream or high groundwater, it was assigned to capability 1b, also known as an SEZ. The Bailey system prohibits development on all capability 1 through 3 parcels, and restricts the amount of coverage (i.e., pavement and building footprint) that can be placed on capability 4 through 7 parcels (Tahoe Regional Planning Agency 2008). Five of these classes occur in the study area (Table 2.2.3-1).

Table 2.2.3-1. Land Capability Classes in the Project Area

Land Capability Class	Area within ESL (Acres)	Percent of Project Area
1A	0.51	1%
1B (SEZs)	18.94	17%
4	9.76	9%
5	49.11	44%
7	32.59	29%
Total	110.89	100%

2.2.3.3 Environmental Consequences

The Project does not involve the construction of habitable structures or other facilities that would result in substantial adverse effects on people, property, or the environment if damaged by unanticipated expansive soils and sediments encountered during Project construction.

The excavation of slopes will be necessary at some locations to facilitate shoulder widening and the installation of water quality improvements. Other slope stability measures are part of the Project. In addition, soil conservation measures would be employed as necessary. The Project would not result in the modification of a river or stream channel, sandy beach, or lake bed, and it would not increase the exposure of people or structures to geologic hazards.

Change in Hard Coverage Area

New drainage improvements would create additional hard coverage and changes to the existing landscape. However, these changes are not expected to result in significant impacts pursuant to CEQA or TRPA. Existing geologic features have been considered in the Project design process. Areas that are not suitable for water quality treatment features, because of either incompatible terrain or the existence of wetlands, marshes, or SEZs, were eliminated from consideration as part of the Project.

TRPA's primary concern regarding soils is the potential creation of additional coverage. In accordance with Chapter 20.3.B(8) of TRPA's Code of Ordinances, the proposed infiltration basins would create impervious coverage that is exempt from the Bailey land coverage limits. Coordination with TRPA on similar stormwater quality projects determined that maintenance access areas adjacent to these structures are not exempt. If needed, Caltrans will transfer land coverage credits pursuant to Chapter 20 of the TRPA Code of Ordinances.

The addition of asphalt-concrete and the placement of water quality features, such as drainage improvements and maintenance pullouts, are expected to increase impervious land coverage within the study area. Revegetation of these areas may be infeasible because these areas would be converted to "hard" impervious surfaces. In addition, areas of SEZ land, Land Capability Class 1B, would be disturbed by additional coverage (fills and structures). Construction of infiltration basins, basin access routes, and culvert outfall areas would require vegetation removal but would be revegetated with native plants and grasses upon completion. Revegetation with the use of (non-impervious) erosion control materials would be determined by the Caltrans Landscape Architecture branch in conjunction with TRPA.

Additionally, existing coverage areas (typically compact unvegetated soils) within the study area are proposed for restoration by applying appropriate (pervious) erosion control materials, as determined by the Caltrans Landscape Architecture branch in conjunction with TRPA. TRPA is concerned about how to prevent new coverage from being created as a result of the Project. Automobiles may continue to park off pavement and create new areas of compacted dirt and disturbance to adjacent lands. To help prevent vehicles from creating new areas of coverage, rock-embedded berms may be incorporated, to the extent feasible, just outside the clear recovery zone. Other methods that would be installed closer to the edge of pavement to prevent parking would include bollards and landscaping.

Construction-Related Soil Erosion and Sedimentation

The grading, trenching, and other earthwork that would occur during construction of the Project would result in ground disturbance that may increase erosion or sedimentation rates above preconstruction levels. Accelerated erosion and sedimentation resulting from construction-related ground disturbance potentially could affect water quality in nearby surface waters, including Lake Tahoe. To reduce or eliminate construction-related erosion, sedimentation, and associated water quality effects, contractors acting on behalf of Caltrans will prepare and implement a SWPPP, to comply with the requirements of the Lahontan General Storm Water Permit, as well as an Erosion and Sedimentation Control Plan to comply with the requirements of the TRPA and County grading ordinances. The SWPPP and Erosion and Sedimentation Control Plan will specify BMPs that will be implemented to control runoff, accelerated wind and water erosion, and sedimentation during construction, as well as measures to stabilize the study area once construction is complete. Therefore, this impact is considered less than significant. No mitigation is required. Additional discussion of erosion and sediment control BMPs is included under Impact WQ-1.

2.2.4 Hazardous Waste/Materials

2.2.4.1 Regulatory Setting

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

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

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act

- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

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

Hazardous waste in California is regulated primarily under the authority of the federal RCRA of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

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

Tahoe Regional Planning Agency

TRPA does not have any specific thresholds or codes for the management of hazardous materials. The *Lake Tahoe Basin Water Quality Management Plan* (known as the 208 Plan; TRPA n.d. (b), I-146) provides that TRPA will cooperate with other agencies with jurisdiction in the Tahoe region in the preparation, evaluation, and implementation of toxic and hazardous substance spill control plans covering Lake Tahoe, its tributaries, and the groundwater and lands of the Tahoe region. TRPA cooperates with the USFS, EPA, U.S. Coast Guard, state water quality and health agencies, and local units of government to develop programs to prevent toxic and hazardous spills and to formulate plans for responding to any spills that may occur (California Department of Transportation 2007a).

Lahontan Regional Water Quality Control Board

The Lahontan RWQCB regionwide control measures for hazardous waste leaks, spills, and illegal discharges apply to the Lake Tahoe Basin, as do statewide requirements for the preparation and implementation of local government hazardous waste management plans (California Department of Transportation 2007a).

2.2.4.2 Affected Environment

The ESL for the Project runs alongside the southwest portion of Lake Tahoe. This area is mainly comprised of open space, forestland, and recreation areas (primarily D. L. Bliss State Park), with some residential and commercial development interspersed. Tahoe Montessori School is located approximately 8 miles southeast of Eagle Falls, the southern terminus of the Project. Similarly, Lake Tahoe Airport is located in South Lake Tahoe, approximately 12 miles outside of Eagle Falls.

Within the Project area, traffic markings, containing thermoplastic and paint, have the potential to contain hazardous levels of lead chromate. As a result, depending on test results, traffic markings that are removed separately from the adjacent pavement may have to be managed as hazardous waste. Additionally, the wood posts used in the guard railings, some of which would be removed as part of Project, are known to contain hazardous chemicals (California Department of Transportation 2007d) and would have to be managed accordingly.

The locations of potential infiltration basins were reviewed in 2006 for potential hazards and hazardous materials. No issues were identified, and the Caltrans Geotechnical Unit was given approval to drill for each location from the Caltrans North Region Hazardous Waste Office (California Department of Transportation 2007d).

2.2.4.3 Environmental Consequences

Approach and Methodology

This impact analysis is based on information derived from the Initial Site Assessment (ISA) prepared for the Project (California Department of Transportation 2007d), the Program ISA (Attachment G, California Department of Transportation 2003b), and research on vicinity land uses conducted for the Project.

The Project ISA evaluated whether hazardous waste issues affect the Project area and whether follow-up investigations would be necessary before construction of the Project. The ISA evaluation included:

- A review of the Project plans and aerial mapping
- Discussions with the Project engineer and environmental coordinator on the Project work scope
- A site field review
- An Environmental Data Resources (EDR) (an environmental information database) records search
- Discussions with regulatory agencies.

Environmental Consequences Discussion

Potential Public Hazard from Routine Use, Transport, and Disposal of or Accident Conditions Involving Release of Hazardous Materials

It is anticipated that gasoline, diesel fuel, oil and lubricants for operation of construction equipment will be used on-site during Project construction. These materials are typically used, handled, and stored by contractors on all roadway construction projects. Furthermore, contractors are required to handle these materials in accordance with applicable laws, including health and safety requirements. No acutely hazardous materials would be used or stored on-site during construction. However, construction of the Project could potentially result in small fuel spills from construction equipment or vehicles (California Department of Transportation 2007a).

Equipment to clean up fuel leaks and spills would be available on-site during all construction activities. The contractors would be required to safely store materials and immediately clean up spills if they occur. Caltrans' *Construction Manual* (California Department of Transportation 2007e) and *Safety and Health Manual* (California Department of Transportation 2007f) provisions would be followed at all times.

Construction of the Project could also potentially involve the transport and disposal of hazardous materials. Project activities include the removal of roadbed as preparation for repaving. If traffic markings containing thermoplastic yellow paint are to be removed from the adjacent pavement with this process, the levels of lead and chromium within the traffic markings would need to be

tested to determine the appropriate disposal methods. Common practice has been to determine these levels during construction. The removed paint material would then be disposed of at a Class 1 disposal facility (California Department of Transportation 2007e). Additionally, the wood posts used within the guard railings are known to contain hazardous chemicals. As a result, the contractor would be required to insure that the wood from the guard railings would not be burned as part of the disposal process, but rather properly disposed of at an appropriate disposal site (California Department of Transportation 2007d). In the event suspected contaminated materials are encountered, the contractor would stop work in the affected area, and notify the Caltrans project engineer immediately and the suspected contamination would be managed appropriately. This impact is considered less than significant. No mitigation is necessary.

2.2.5 Air Quality

2.2.5.1 Regulatory Setting

Federal and State Standards

The Project area is located in the El Dorado County portion of the Lake Tahoe Air Basin (LTAB). Located in El Dorado and Placer Counties, the Lake Tahoe Basin was designated as its own air basin in 1969. The LTAB encompasses the surface of Lake Tahoe and the land up to the surrounding rim of mountain ridges, covering approximately 193 square miles and with an average elevation of 6,200 feet.

Air quality in the LTAB is regulated by several agencies, including EPA, the California Air Resources Board (ARB), and TRPA. Each agency has developed rules and regulations to attain various air quality goals. Although EPA regulations may not be superseded, state and local regulations may be more stringent than federal air quality regulations. In general, EPA and ARB are responsible for regulating emissions from on- and off-road vehicles and establishing air quality standards.

The federal and state governments have established ambient air quality standards for seven criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone, particulate matter 10 microns or less in diameter (PM₁₀), particulate matter 2.5 microns or less in diameter (PM_{2.5}), and lead. Most standards are set to protect public health, but some are based on other values (e.g., protection of crops, protection of materials, or avoidance of nuisance conditions). The state also has established standards for hydrogen sulfide, vinyl chloride, and sulfates. The national and California ambient air quality standards and the pollutants are described in more detail under Section 2.2.5.2, Affected Environment, below.

Ozone and NO₂ (an ozone precursor) are considered regional pollutants because they affect air quality on a regional scale. Oxides of nitrogen (NO_x), including NO₂, react photochemically with reactive organic gases (ROGs) to form ozone some distance downwind of the source of pollutants. Pollutants such as CO, PM₁₀, and PM_{2.5} are considered local pollutants because they tend to disperse rapidly with distance from the source. PM_{2.5} also is considered a regional pollutant that travels and affects downwind areas.

State Air Quality Plans

The California Clean Air Act (California CAA) requires local and regional air pollution control districts that are not attaining one or more of the California ambient air quality standards for

ozone, CO, SO₂, or NO₂ to expeditiously adopt district-level air quality management plans, called Clean Air Plans, specifically designed to attain these standards. Each Clean Air Plan must be designed to achieve an annual 5% reduction in district-wide emissions of each nonattainment pollutant or its precursors, and they must be updated every 3 years. ARB is responsible for developing plans and projects that achieve compliance with the state PM10 standards.

Tahoe Regional Planning Agency

TRPA has regional jurisdiction over air quality in the LTAB. TRPA is responsible for implementing federal and state regulations, issuing permits for stationary sources of air pollution, and developing plans for attaining ambient air quality standards. TRPA regulates most air pollutant sources, except motor vehicles, locomotives, aircraft, forestry equipment, and marine vessels.

As part of its regional transportation plan/air quality plan, TRPA has established a set of air quality thresholds that tend to be equivalent to or more stringent than the federal and state air quality standards. Of particular interest to the Project: CO concentrations will be maintained at or below 6 parts per million (ppm), averaged over 8 hours; ozone concentrations will be maintained below 0.08 ppm, averaged over 1 hour; and the PM10 threshold (equivalent to the California ambient air quality standards) is 20 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over a year and 50 $\mu\text{g}/\text{m}^3$ averaged over 24 hours. TRPA also has established thresholds for visibility, traffic volume, vehicle miles traveled, and wood smoke. Projects that exceed these thresholds are considered to have a significant impact on the air quality of the LTAB (URS 2006b).

2.2.5.2 Affected Environment

Regional Climate and Meteorology

In winter, the meteorology of the LTAB is typified by large amounts of precipitation from Pacific storms that falls mainly as snow. Temperatures are often below freezing, accompanied by winds, cloudiness, and lake and valley fog. Winter days can be cool and brilliantly clear between storms. Thermal inversions are a dominant feature of winter weather. In summer, days are often mild and sunny, with daytime peaks in the upper 70s and low 80s (°F), with southern flows of moisture bringing an occasional thunderstorm.

The principal impact on air quality from these conditions is excess winter concentrations of CO in the more congested and populated areas of the LTAB. This is seen primarily at South Lake Tahoe from the operation of vehicles, residential wood stoves, and fireplaces. Further, the thermal inversions “trap” pollutants near the surface of the land and Lake Tahoe, resulting in higher concentrations. This has a detrimental impact on winter CO levels. Some transport of ozone from the west in summer is known to occur, but ARB has not yet officially recognized this as a transport route.

Attainment Status

EPA has classified the LTAB as being in attainment for all national ambient air quality standards. ARB has classified the LTAB as being in attainment for all California ambient air quality standards, except the 24-hour PM10 standard. The TRPA standard for PM10 is the same as the California standard; therefore, the TRPA threshold for this pollutant is exceeded within the LTAB.

Pollutants of Concern in the Lake Tahoe Region

The following discussion focuses on ozone, CO, and particulate matter (PM10 and PM2.5). These are the pollutants of most concern to the TRPA.

Monitoring Data

The existing air quality conditions in the study area can be characterized by monitoring data collected from three stations: Echo Summit, South Lake Tahoe, and Tahoe City. Of the three stations, the South Lake Tahoe station has the largest capacity to monitor air quality. Located within the LTAB, this station monitors ozone, CO, PM10, and PM2.5. With a smaller capacity the Tahoe City station monitors ozone and CO, and is the closest monitoring station to the Project area. The Tahoe City station was originally installed as part of a short-term air quality study led by ARB. However, because of ongoing technical problems that resulted in an inability to collect accurate CO data, the CO measurements from this site will not be used for this analysis. Ozone, CO, PM10, and PM2.5 are also monitored at the Echo Summit station. However, this station is not within the LTAB, and local topography and activities in the immediate vicinity of the site have a significant influence on this data. As a result, this analysis relies primarily on data from the South Lake Tahoe station. It is expected that the use of South Lake Tahoe data to evaluate pollutants that can be very localized (such as CO) will include some uncertainty.

Sensitive Receptors

Sensitive receptors are locations where human populations, especially children, seniors, and the ill, are located, where there is a reasonable expectation of continuous human exposure according to the averaging time for an air quality standard (e.g., 24 hours, 8 hours, or 1 hour). These locations typically include residences, hospitals, and schools. Sensitive land uses in the study area that could be affected by the Project include several single-family residences. The residences would be located within 50 feet of Project-related construction.

2.2.5.3 Environmental Consequences

This analysis uses TRPA guidance and CEQA criteria for the determination of significant impacts. TRPA guidelines do not provide numerical thresholds of significance for construction emissions. Instead, the emissions are considered to have a temporary impact that must be mitigated through the use of BMPs and revegetation as determined by TRPA (URS 2006b).

Generation of Ozone Precursors, Carbon Monoxide, and Particulate Matter during Construction

The Project is expected to generate suspended particulate matter from construction activities. Construction is a source of dust emissions that have the potential to result in temporary local impacts on air quality (i.e., to exceed the California ambient air quality standards for PM10). Construction emissions would result from earth-moving and heavy equipment use, in particular for land clearing, ground excavation, cut and fill operations, and pavement activities. Dust emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather. In addition to particulate matter emissions from earth-moving, combustion emissions from fuel-powered construction equipment may create a temporary impact on local air quality. Such equipment is typically diesel-fueled. The construction contractor may implement additional measures to further reduce pollutant emissions from construction equipment exhaust.

The contractor would keep engines properly tuned, limit engine idling, and avoid unnecessary concurrent use of equipment.

TRPA regulates emissions of particulate matter from construction activities by requiring that project proponents obtain a construction permit that details the dust control measures that would be applied during construction. Caltrans will be required to apply for and obtain any necessary TRPA permits. Guidance regarding applicable TRPA permits and controls is available from TRPA's web page about the Best Management Practices Retrofit Program and Erosion Control Team (Tahoe Regional Planning Agency 2005a), and TRPA's BMP Contractors Notes web page (Tahoe Regional Planning Agency 2005b). Typical dust control practices that may be required may include the following:

- Cover open-bodied trucks when used for transporting materials likely to give rise to airborne dust
- Water disturbed (graded or excavated) surfaces as necessary to minimize dust protection, increasing frequency when weather conditions require it
- Water disturbed areas to form a compact surface after grading and earth-working
- Use chemical dust suppressants when watering is not sufficient
- Limit the areas to be cleared to those facilities required for the Project, as well as necessary equipment and materials stockpile areas
- Limit the speed of construction equipment and vehicles on unpaved roads to minimize dust protection, when conditions require it
- Conduct erosion control planting of exposed slopes after construction
- Incorporate standard erosion control measures as part of the construction contract.

The dust control activities would comply with Caltrans Standard Specifications Section 10 and would be reviewed and approved by TRPA. In addition, Caltrans would follow Standard Specification 7-1.01F, which addresses following the local air pollution control district's rules. Construction emissions and this impact are considered less than significant. No mitigation is necessary.

Exposure of Sensitive Receptors to Elevated Levels of Diesel Exhaust and Increased Health Risk

Construction activities are anticipated to occur over a two-year period, in varying locations. Construction activities are sporadic, transitory, and short-term in nature; once construction activities cease, so do their emissions. Construction of the Project is not anticipated to result in an elevated exposure to diesel exhaust that would increase health risks. Therefore, the diesel risks associated with construction activities are considered less than significant. No mitigation is necessary.

Generation of Temporary Localized Odors during Construction

Diesel emissions from construction equipment and volatile organic compounds from paving activities may create off-site odors during construction. These odors would be temporary and

localized and would cease once construction activities were completed. This impact is considered less than significant. No mitigation is necessary.

2.2.6 Noise and Vibration

2.2.6.1 Regulatory Setting

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

Tahoe Regional Planning Agency

TRPA establishes noise limitations in the TRPA Code of Ordinances, Chapter 23. These limitations apply to single-event noises from aircraft, marine crafts, motor vehicles, motorcycles, off-road vehicles, and snowmobiles, as well as community noise levels in the Lake Tahoe region. TRPA-approved construction is exempt from these provisions, provided that construction activities are limited to the hours of 8:00 a.m. to 6:30 p.m.

TRPA's thresholds for noise include numerical community noise equivalent level (CNEL) values for various land use categories and transportation corridors, as well as single-event (maximum sound level [L_{max}]) standards for specific sources, including motor vehicles, off-road vehicles, boats, snowmobiles, and aircraft. CNEL is also used to characterize average sound levels over a 24-hour period, with weighting factors included for evening and nighttime sound levels.

Applicable TRPA noise threshold indicators are listed below:

- **N-2—Single-Event Noise Standards for Other Than Aircraft:** This indicator is any single-event noise measurement made with a Type I sound level meter using the A-weighting and “slow” response pursuant to applicable manufacturer’s instructions (except for sounds lasting 2 seconds or less, for which the “fast” response will be used). (A-weighted decibels [dBA] are weighted to approximate the sensitivity of the human ear to various frequencies.) Chapter 23 of the TRPA Code of Ordinances contains additional information.
- **N-3—Community Noise Equivalent Levels:** This indicator is the CNEL calculated pursuant to Section 23.4 of the TRPA Code of Ordinances. TRPA will review proposed activities in the region and account for site-specific analyses, estimated impacts on affected land uses, consistency with other provisions of the TRPA Regional Plan, and reasonable tests of significance of change in noise levels.

El Dorado County General Plan

Maximum allowable noise levels resulting from construction are outlined in the El Dorado County General Plan (El Dorado County 2004). As stated in Policy 6.5.1.11:

The standards outlined in Tables 6-3, 6-4, and 6-5 [of the El Dorado County Construction Noise Standards] will apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and

8 a.m. and 5 p.m. on weekends, and on federally recognized holidays. Exemptions are allowed if it can be shown that construction beyond these times is necessary to alleviate traffic congestion and safety hazards.

The noise level standards outlined in Table 6-4 of the El Dorado County Construction Noise Standards do not apply to the Project because construction activities would not occur in rural centers (where the location of outdoor activity areas is not clearly defined). The standards presented in Tables 6-3 and 6-5 of that document (represented in this IS by Tables 2.2.6-1 and 2.2.6-2, respectively) apply to the Project because construction activities would occur in rural regions along existing state highways.

Table 2.2.6-1. Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Community Regions and Adopted Plan Areas

Land Use Designation ^a	Time Period	Noise Level (Decibels [dB])	
		L _{eq} ^b	L _{max}
Higher-Density Residential (MFR, HDR, MDR)	7 a.m.–7 p.m.	55	75
	7 p.m.–10 p.m.	50	65
	10 p.m.–7 a.m.	45	60
Commercial and Public Facilities (C, R&D, PF)	7 a.m.–7 p.m.	70	90
	7 p.m.–7 a.m.	65	75
Industrial (I)	Any time	80	90

Source: Illingworth & Rodkin 2006.

^a Adopted Plan (AP) areas refer to those land use designations that most closely correspond to the similar El Dorado County General Plan land use designations for similar development.

^b L_{eq} refers to equivalent noise level, which is the average A-weighted noise level during the period of time the noise level is measured or estimated.

Table 2.2.6-2. Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Rural Regions

Land Use Designation ^a	Time Period	Noise Level (dB)	
		L _{eq}	L _{max}
All Residential (LDR)	7 a.m.–7 p.m.	50	60
	7 p.m.–10 p.m.	45	55
	10 p.m.–7 a.m.	40	50
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70

Source: Illingworth & Rodkin 2006.

^a Adopted Plan (AP) areas refer to those land use designations that most closely correspond to the similar El Dorado County General Plan land use designations for similar development.

2.2.6.2 Affected Environment

The existing noise environment along the Project segment results primarily from vehicular traffic along SR 89. The typical daytime noise level from average daily traffic in the Project area is

estimated to be 64 dBA at 50 feet from roadway center. Typical daytime noise levels along the Project segment were estimated based on traffic volume data published by Caltrans³.

Noise-sensitive land uses, locations where people reside or where the presence of unwanted sound could affect the use of the land adversely, generally include residences, hospitals, schools, libraries, and certain types of recreational uses. Noise-sensitive land uses in the study area that could be affected include several single-family residences. The residences would be located within 50 feet of Project-related construction activities.

2.2.6.3 Environmental Consequences

Approach and Methodology

This analysis is summarized from the noise report prepared for the EIP (Illingworth & Rodkin 2006) and the Noise Technical Memorandum prepared for the Project (Jones & Stokes 2007d). To evaluate construction noise impacts, land uses or activities that could be affected by construction noise were identified. Construction noise at these uses or activities was then evaluated using methods recommended in the *FHWA Highway Construction Noise Handbook* (Federal Highway Administration 2006).

Implementation of the Project would involve site preparation, storm drain installation, paving, and other noise-generating construction activities. Table 2.2.6-3 summarizes noise levels typically produced by noise-generating equipment anticipated to be used for the Project.

³ 2004 Annual Average Daily Truck Traffic on the California State Highway System, Department of Transportation, August 2005.

Table 2.2.6-3. Typical Construction Noise Levels

		Noise Level (dBA) at 50 Feet					
		60	70	80	90	100	110
Equipment Powered by Internal Combustion Engines	Earth Moving	Compactors (Rollers)		-			
		Front Loaders		—	—		
		Backhoes		—	—	—	
		Tractors		—	—	—	
		Scrapers, Graders			—	—	
		Pavers				—	
		Trucks				—	
	Materials Handling	Concrete Mixers			—	—	
		Concrete Pumps				—	
		Cranes (Moveable)			—	—	
		Cranes (Derrick)				—	
	Stationary	Pumps		—			
		Generators		—	—		
		Compressors			—	—	
Impact Equipment	Pneumatic Wrenches				—		
	Jackhammers and Rock Drills			—	—		
	Impact Pile Drivers (Peaks)					—	
Other	Vibrator		—	—			
	Saws		—	—			

REFERENCE: "Traffic Noise Analysis and Mitigation Manual," Environmental Section, Oregon State Highway Division, January 1990.

Maximum noise levels from this equipment are in the range of 74 to 89 dBA. Construction activity is a point source from which noise attenuates (i.e., becomes quieter) at a rate of about 6 dB per doubling of distance. Additional attenuation of 1 to 2 dB per doubling of distance occurs as a result of ground absorption (Federal Highway Administration 2006).

Environmental Consequences Discussion

Construction Noise Exceeding TRPA and El Dorado County Noise Standards

During construction, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Some residences may be as close as 50 feet from active construction areas. In order to minimize impacts to the traveling public it is Caltrans policy to not close traffic lanes when the traffic volume is greater than 800 vehicles per hour, and daytime traffic volumes in the Project area typically exceed these levels. Daytime construction activities would be maximized and nighttime construction activities would be minimized to the extent possible (Per Caltrans Standard Specifications Section 7-1.01I, instantaneous noise from construction equipment is not to exceed 86 decibels at a distance of 50 feet). This approach would be used in order to minimize traffic interruptions and delays while maximizing worker and public safety. The Department or its contractor would conduct noise monitoring of construction activities as needed to verify compliance with specified noise limits. Public awareness measures would be taken as needed to inform the public of potential noise disturbances. Based on a review of the proposed construction activities and schedule, it is not anticipated that construction activities for this Project would violate TRPA’s CNELs or Caltrans’ instantaneous noise limits, nor would this change the impact determination made pursuant to CEQA. Furthermore, during construction of the Project, Caltrans or its construction contractor would employ noise-reducing construction practices such that noise from

construction activities that occur outside the state right-of-way does not exceed El Dorado County noise standards as well. These measures may include the following:

- All internal combustion engine–driven equipment would be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines would be strictly prohibited. This includes idling of unattended vehicles and idling of more than 2 minutes for waiting trucks.
- Property owners would be notified if the staging of construction equipment would need to occur within 200 feet of residences. Additionally, all stationary noise-generating construction equipment, such as air compressors and portable power generators, would be located as far as practical from existing noise-sensitive receptors.
- Temporary barriers would be constructed to screen stationary noise-generating equipment when located immediately adjacent to noise-sensitive land uses. The barriers would be sufficient to reduce the noise level by a minimum 5 dBA.
- “Quiet” air compressors and other stationary noise sources would be used where such technology exists and is feasible. Quiet technology may include the use of rotary screw air compressors (as opposed to noisier air-cooled reciprocating compressors) and equipment provided with factory-installed sound-attenuating enclosures.
- Before construction begins, residences adjacent to construction areas would be notified of the construction schedule in writing. A noise disturbance coordinator, who would be responsible for responding to any local complaints about construction noise, would be designated by Caltrans or its contractor. The coordinator would determine the cause of any noise complaint and ensure that reasonable measures to correct the problem were implemented. A telephone number for the coordinator would be posted conspicuously at the construction site and included in the notice sent to neighbors about the construction schedule.

This impact is considered less than significant. No mitigation is necessary.

Exposure to Groundborne Vibration from Construction

Construction activities associated with the Project may result in a minor amount of ground vibration. Vibration from construction typically falls below the threshold of perception when the activity is more than about 50 feet from the receiver. In addition, vibration from these activities would be short-term and would end when construction was completed. Construction for the Project is not expected to involve high-impact activities (i.e., pile driving). Because of the short-term and minor nature of the activities from which vibrations could be generated, this impact is considered less than significant. No mitigation is necessary.

2.3 Biological Environment

The study area referenced in Section 2.3 is equivalent to the ESL described in Chapter 1. The Project region constitutes an area within 5 miles of the study area. This distance was used because flora and fauna within this distance were likely to be similar to those in the study area.

2.3.1 Natural Communities

This section discusses natural communities of concern in the study area. It focuses on biological communities, not individual plant or animal species which are discussed later in this chapter. This section includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential division of sensitive habitat and thereby reduction of its biological value. Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act (FESA) are discussed in Section 2.3.5. Wetlands and other waters of the United States are discussed in Section 2.3.2.

2.3.1.1 Regulatory Setting

Tahoe Regional Planning Agency

Under the TRPA 2006 Evaluation Threshold Report (Tahoe Regional Planning Agency 2007), the following thresholds apply to the proposed Project:

- **V1:** Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern. Maintain the existing species richness of the region by providing for the perpetuation of the following plant associations: Yellow pine forest; Red fir forest; Subalpine forest; Shrub association; Sagebrush Scrub association Deciduous riparia; Meadow associations (wet and dry meadow); Wetland association (marsh vegetation); and Cushion plant association (alpine scrub).
- **V2:** Provide for the nondegradation of the natural qualities of any plant community that is uncommon to the region or of exceptional scientific, ecological, or scenic values. This threshold shall apply but not be limited to: 1) deep-water plants of Lake Tahoe; 2) Grass Lake (sphagnum bog); 3) Osgood swamp; and 4) the Freel Peak Cushion Plant community.

Code of Ordinances

Under Section IX, Chapter 75 of the TRPA Code of Ordinances (Tahoe Regional Planning Agency 1987), the following ordinances apply to sensitive and uncommon plants.

- **75.0—Purpose:** This chapter sets forth standards for the preservation and management of vegetation of significant scenic, recreational, educational, scientific, or natural values of the Region, and for management of vegetation to prevent the spread of wildfire.
- **75.1—Applicability:** This chapter applies to all projects and activities which could have a detrimental effect on designated sensitive plants or uncommon plant communities, and to all areas where vegetation may contribute to a significant fire hazard.
- **75.2—Sensitive Plants and Uncommon Plant Communities:** Designation of plants for special significance is based on such values as scarcity and uniqueness. The following standards shall apply to all sensitive plants and uncommon plant communities referenced in the environmental thresholds, and to other plants or plant communities identified later for such distinction. The general locations of sensitive plant habitat and uncommon plant communities are depicted on the TRPA Special Species map overlay.
- **75.2.A—Sensitive Plants:** Projects and activities in the vicinity of sensitive plants and their associated habitat shall be regulated to preserve sensitive plants and their habitat. All projects

or activities that are likely to harm, destroy, or otherwise jeopardize sensitive plants or their habitat shall fully mitigate their significant adverse effects. Those projects and activities that cannot fully mitigate their significant adverse effects are prohibited. Measures to protect sensitive plants and their habitat include, but are not limited to:

- (1) Fencing to enclose individual populations or habitat;
 - (2) Restrictions on access or intensity of use;
 - (3) Modifications to project design as necessary to avoid adverse impacts;
 - (4) Dedication of open space to include entire areas of suitable habitat; or
 - (5) Restoration of disturbed habitat.
- **75.2.B—Uncommon Plant Communities:** Uncommon plant communities shall be managed and protected to preserve their unique ecological attributes and other associated values. Projects and activities that cause a significant adverse impact uncommon plant communities, such that normal ecological functions or natural qualities of the community are impaired, shall not be approved (Tahoe Regional Planning Agency 1987).

2.3.1.2 Affected Environment

This section summarizes the results of the Natural Environmental Study (NES) prepared for the Project (Jones & Stokes 2007e).

Natural Communities in the Study Area

Natural communities in the study area were identified and mapped as four distinct vegetation community types: Sierran mixed conifer, montane chaparral, montane riparian, and wet meadow. The study area also contains creek channels and small urban areas, including Meeks Bay and single-family dwellings along Rubicon Bay. The descriptions of the community types are based on those contained in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). The total area of each community type is listed in Table 2.3.1-1.

Table 2.3.1-1. Total Area of Natural Communities in the Study Area

Community Type	Acres
Sierran mixed conifer	45.251
Montane chaparral	7.710
Montane riparian	3.965
Wet meadow	0.075
Creek channel	0.391
Urban	31.252
Total	88.644

Two community types in the study area (montane riparian and wet meadow) are natural communities of special concern—habitats that are considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status. Local, state, and federal agencies consider these habitats important. CDFG maintains a list of California terrestrial natural communities that is recognized by the California Natural Diversity Database (CNDDB) (2007), although the classification system has been updated from the one

used in the CNDDDB. The CNDDDB contains a current list of rare natural communities throughout the state. USFWS considers certain habitats (e.g., wetlands) important to wildlife, and USACE and EPA consider wetland habitats important for water quality and wildlife.

The locations of each natural community area within the study area, as well as their dominant plant species and typical wildlife species, are described below.

Sierran Mixed Conifer

Sierran mixed conifer is a forest with almost 100% overlapping tree cover and a low cover of shrubs and herbs (Mayer and Laudenslayer 1988). Conifer species include Jeffrey pine (*Pinus jefferyi*), incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), and lodgepole pine (*Pinus contorta*). Common shrubs include antelope bitterbrush (*Purshia tridentata*), common sagebrush (*Artemisia tridentata*), whitethorn (*Ceanothus cordulatus*), and green-leaf manzanita (*Arctostaphylos patula*). In the study area, this community type is often dominated by Jeffrey pine. Sierran mixed conifer is found in dry upland areas, often intermixed with wet meadow and montane riparian communities (Mayer and Laudenslayer 1988).

Mixed conifer forest provides habitat for a large number of wildlife species. The large variety of plant species within mixed conifer forest provides a diversity of food and cover for wildlife. Fruits from antelope bitterbrush and other shrubs, as well as a variety of grasses and forbs, provide essential resources for foraging wildlife. Mature forests are valuable habitat for cavity-nesting birds (Mayer and Laudenslayer 1988). Wildlife species that are common in this habitat type include Steller's jay (*Cyanocitta stelleri*), hairy woodpecker (*Picoides villosus*), mountain chickadee (*Parus gambeli*), western gray squirrel (*Sciurus griseus*), porcupine (*Erethizon dorsatum*), gray fox (*Urocyon cinereoargenteus*), and mule deer (*Odocoileus hemionus*) (Zeiner et al. 1990a, 1990b). This habitat type occurs throughout the study area.

Montane Chaparral

This habitat type is dominated by evergreen shrubs, including green-leaf manzanita, mountain whitethorn, antelope bitterbrush, and common sagebrush. This shrub-dominated habitat sometimes includes conifers such as Jeffrey pine and white fir. Montane chaparral is often low-growing and impenetrable, and it usually lacks an herbaceous understory. It typically occurs on steep south-facing slopes and ridges, usually on rocky, granitic soils (Graf 1999).

Montane chaparral provides habitat for a variety of birds and mammals. Numerous rodents, deer, and other herbivores are common in chaparral communities. Montane chaparral provides important summer-range foraging areas, escape cover, and fawning habitat for deer. Rabbits and hares will eat twigs, evergreen leaves, and bark from chaparral in fall and winter when there is not an abundance of grasses. Shrubby vegetation provides mammals with shade during hot weather and protection from wind in winter. Chaparral provides seeds; fruits; insects; protection from predators and weather; and singing, roosting, and nesting sites for many species of birds (Mayer and Laudenslayer 1988). Sagebrush lizard (*Sceloporus graciosus*), mountain quail (*Oreortyx pictus*), Nashville warbler (*Vermivora ruficapilla*), spotted towhee (*Pipilo maculatus*), brush mouse (*Peromyscus boylii*), and mule deer are common in chaparral habitats (Zeiner et al. 1988, 1990a, 1990b). Montane chaparral is found scattered throughout the study area.

Montane Riparian

The vegetation of montane riparian habitats is composed of relatively small-stature broad-leaved deciduous trees with a sparse understory. Dominant canopy trees include mountain alder (*Alnus incana* ssp. *tenuifolia*), red willow (*Salix laevigata*), and Scouler's willow (*Salix scouleriana*). Montane riparian habitats are associated with montane lakes, bogs, meadows, rivers, streams, and springs. Montane riparian stands dominated by willows (red and Scouler's) or mountain alders are considered natural communities of special concern by CDFG.

Montane riparian habitat provides high-quality habitat for many wildlife species. This habitat provides water, cover, migration corridors, and diverse breeding and feeding opportunities for amphibians, reptiles, birds, and mammals. Wildlife species associated with montane riparian habitat include Pacific treefrog (*Hyla regilla*), rubber boa (*Charina bottae*), red-breasted sapsucker (*Sphyrapicus ruber*), Pacific slope flycatcher (*Empidonax difficilis*), northern pygmy owl (*Glaucidium gnoma*), and gray fox (Mayer and Laudenslayer 1988; Zeiner et al. 1988, 1990a, 1990b). This habitat type is found along Meeks Creek and other drainages throughout the study area.

Wet Meadow

This habitat type is quite variable depending on the hydrology of the area. Wet meadow areas with essentially permanently moist soils tend to support a dense cover of sedges (*Carex* spp.) and rushes (*Juncus* spp.), with fewer perennial grasses. The wet meadows intergrade into areas with drier soils that tend to support more perennial grasses such as timothy (*Phleum pratense*), blue wild-rye (*Elymus glaucus*), and bentgrass (*Agrostis* sp.), with fewer sedges and rushes. This community is considered a natural community of special concern by CDFG.

Wet meadows in the study area provide sources of drinking water for deer, other mammals and various species of birds. These areas also provide edible grasses and forbs for deer and small mammals (Mayer and Laudenslayer 1988). Perennial wet meadows may provide suitable habitat for amphibians such as Pacific treefrog and long-toed salamander (*Ambystoma macrodactylum*) (Mayer and Laudenslayer 1988). Wet meadow habitat occurs in the Paradise Flat area on the east and west sides of SR 89. The large meadow in the Paradise Flat area and the adjacent montane riparian stands and creek provide high value habitat for wildlife.

Creek Channel

Four named perennial drainages (Meeks Creek, Lonely Gulch, Rubicon Creek, and Dairy Creek), seven perennial and intermittent unnamed drainages, and several unnamed ephemeral drainages are present in the study area. Meeks Creek and Lonely Gulch are tributary to navigable waters and are thus subject to regulation by USACE. Meeks Creek and Lonely Gulch also exhibit bed and bank characteristics with an ordinary high water mark (OHWM) and are thus subject to regulation by CDFG.

Creek channels with well-vegetated areas provide food; water; migration and dispersal corridors; and escape, nesting, and thermal cover for many wildlife species (Mayer and Laudenslayer 1988). Wildlife species associated with montane stream and riparian habitats include mountain yellow-legged frog (*Rana muscosa*), Calliope hummingbird (*Stellula calliope*), American dipper (*Cinclus mexicanus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*) (Zeiner et al. 1988, 1990a, 1990b).

Rubicon Creek and Lonely Gulch likely provide habitat for some native and introduced fish species. Introduced species could include brook trout (*Salvelinus fontinalis*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), kokanee salmon (*O. nerka*), and sunfish (*Lepomis* spp.). Native fish species known to occur or with the potential to occur in these types of streams include mountain whitefish (*Prosopium williamsoni*), Tahoe sucker (*Catostomus tahoensis*), Paiute sculpin (*Cottus beldingi*), Lahontan redbreast (*Richardsonius egregius*), and Lahontan speckled dace (*Rhinichthys osculus robustus*). Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) would not be expected to occur in Rubicon Creek, Lonely Gulch, or any of the perennial unnamed streams in the study area. Although there was an accidental stocking of Lahontan cutthroat trout in Hidden Lake in the Meeks Creek drainage in the 1990s, there is no evidence that those fish persisted in the drainage (Lehr pers. comm.). Therefore, they are not expected to be present in the side channel of Meeks Creek.

Urban

The study area passes through two small urbanized areas: Meeks Bay and the single-family dwellings that overlook Rubicon Bay. Urban habitat in the study area occurs as a mix of native trees and shrubs from the mixed conifer forest and montane chaparral habitats, but in lower densities around buildings.

Urban areas generally have marginal value for wildlife because of human disturbance and lack of vegetation. Wildlife species that use these areas are typically adapted to human disturbance. Wildlife species associated with urban residential and suburban areas include Steller's jay, northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), rock dove (*Columba livia*), raccoon, opossum (*Didelphis virginiana*), striped skunk, western fence lizard (*Sceloporus occidentalis*), and gopher snake (*Pituophis melanoleucus*) (Mayer and Laudenslayer 1988).

2.3.1.3 Environmental Consequences

Approach and Methodology

Biologists reviewed the existing Natural Environment Study prepared for the El Dorado 50 and 89 Environmental Improvement Program/Stormwater Treatment Projects (URS 2007b) to evaluate the natural communities that could occur in the study area. In addition, biological surveys were conducted in the study area by a botanist and wildlife biologist in October and November 2007. Vegetation communities in the study area were identified and mapped during the botanical field surveys. An assessment of habitat suitability for sensitive wildlife species in the study area was also conducted.

Environmental Consequences Discussion

Drainage improvement activities would result in the permanent loss of, or direct construction-related disturbances to creek channel habitat within the study area. However, because this habitat type represents jurisdictional waters of the United States, including wetlands and other waters, please refer to section 2.3.2 below for expanded discussion of impacts to creek channel.

Additionally, drainage improvement activities would not result in the permanent loss of, or direct construction-related disturbances of any wet meadow habitat within the study area. Therefore, it will not be discussed further.

Impact NAT-1: Loss or Disturbance of Montane Riparian Forest (Less than Significant)

The loss or disturbance of montane riparian forest vegetation is considered adverse because the habitat provides a variety of important ecological functions and values. Drainage improvement activities would result in the permanent loss of, or direct construction-related disturbances within, no more than approximately 0.595 acre of montane riparian forest in the study area, including understory plants such as wax currant (*Ribes cereum*).

Indirect impacts on montane riparian forest vegetation could occur from adjacent construction activity. Montane riparian forest vegetation is adjacent to the construction area and would not be removed for construction, but could sustain damage from equipment (Jones & Stokes 2007e). The Project includes two environmental commitments (AV-01 and WL-05) that would reduce impacts on montane riparian forest. Therefore, implementation of the Project would have a less-than-significant impact on montane riparian forest. No mitigation is required.

Environmental Commitments

The following environmental commitments would reduce impacts on wet meadow. A description of these environmental commitments is included at the end of this chapter, under Section 2.3.7.

- AV-01: Establish Environmentally Sensitive Areas (ESAs)
- WL-05: Limit Vegetation Removal

2.3.2 Wetlands and Other Waters

2.3.2.1 Regulatory Setting

Federal

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

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

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

State

At the state level, wetlands and waters are regulated primarily by CDFG and the RWQCBs. California Fish and Game Code (CFG) Sections 1600–1607 require any agency that proposes a project that would substantially divert or obstruct the natural flow or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a lake or streambed alteration agreement will be required. CDFG jurisdictional limits are usually defined by the top of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under USACE jurisdiction may or may not be included in the area covered by a lake or streambed alteration agreement obtained from CDFG.

The RWQCBs were established under the Porter-Cologne Act to oversee water quality. The RWQCBs also issue water quality certifications in compliance with CWA Section 401. Please see Section 2.2, Physical Environment, of this chapter for additional details.

Lahontan Regional Water Quality Control Board

The Lahontan RWQCB, through implementation of its Basin Plan and authority under CWA Section 401, regulates activities within the SEZs. The Basin Plan prohibits new disturbance/coverage within SEZs in the Lake Tahoe Basin. To approve the Project, the Lahontan RWQCB would need to make all of the following findings for public service facilities:

- The Project is necessary for public health, safety, or environmental protection
- There is no reasonable alternative, including spans, that avoids or reduces the extent of encroachment in the SEZs
- Impacts are fully mitigated
- SEZ lands are restored in an amount 1.5 times the area of the SEZ area developed or disturbed by the Project.

Local

Tahoe Regional Planning Agency

TRPA has established SEZs in the Lake Tahoe Basin. The SEZs are identified by the presence of key indicators, such as evidence of surface water flow, riparian vegetation, near-surface groundwater, designated floodplains, and alluvial soils. In 1987, TRPA required protection of SEZs in its Regional Plan.

The SEZs are protected to maintain their functions and values, including flood attenuation, water quality enhancement, and wildlife habitat. Strict regulations control the use or disturbance of SEZs on public and private property throughout the watershed.

Although there are no TRPA thresholds established for specifically for wetlands, the following vegetation threshold is applicable:

- **V1:** Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern. Maintain the existing species richness of the region by providing for

the perpetuation of the following plant associations: Yellow pine forest; Red fir forest; Subalpine forest; Shrub association; Sagebrush Scrub association Deciduous riparia; Meadow associations (wet and dry meadow); Wetland association (marsh vegetation); and Cushion plant association (alpine scrub).

Code of Ordinances

Under Section IX, Chapter 74 of TRPA's Code of Ordinances, ordinances that apply to SEZs include:

- **74.2—Protection of Stream Environment Zones:** No project or activity shall be undertaken in an SEZ [Land Capability Class 1B] which converts SEZ vegetation to a non-native or artificial state, or which negatively impacts SEZ vegetation through action including, but not limited to, reducing biomass, removing vegetation, or altering vegetation composition.
 - **74.2.A—Exceptions:** The following are exceptions:
 - (1) Manipulation or management of SEZ vegetation may be permitted in accordance with the Code of Ordinances for purposes of SEZ vegetation health or wildlife or fish habitat improvements, and after approval of a vegetation management plan pursuant to Subsection 74.4.B, or as provided in Subsections 20.4, 20.5.C, or 79.2, or Chapters 71 or 72.
 - (2) Maintenance of landscaping that was installed prior to the creation of TRPA, or installed for the purpose of scenic quality pursuant to Chapter 30, Design Standards, or pursuant to a TRPA permit, or under a TRPA exemption prior to August 1, 1997, provided that fertilizer use is restricted in accordance with the BMP Handbook and described in Subsection 81.7.A, unless a remedial action pursuant to Section 74.3 has been taken by TRPA.
 - (3) Removal of vegetation may be permitted pursuant to Subsections 4.2.A(5), 4.3.A(6), or 65.2, or 55.4, Chapter 73, or under defensible-space guidelines approved by TRPA.

2.3.2.2 Affected Environment

The study area supports SEZs and areas of jurisdictional waters of the United States, including wetlands and other waters.

Stream Environment Zones

The Bailey land capability classification system was developed by the USFS and TRPA in the early 1970s based primarily on the official U.S. Department of Agriculture (USDA) soil maps for the Lake Tahoe region (Tahoe Integrated Information Management System 2003). Each soil type was assigned to a land capability class ranging from 1 to 7, with Land Capability Class 1 being the most environmentally fragile and sensitive to development. Wherever land was found to be influenced by a stream or high groundwater, it was assigned to Land Capability Class 1B, which corresponds to an SEZ.

The SEZs identified in this report were calculated from a TRPA-approved delineation of SEZs in the Project area provided by Caltrans. A total of 17.115 acres of SEZs occur in the study area. SEZs include jurisdictional waters of the United States and communities of special concern such

as montane riparian and wet meadow habitats. SEZs in the study area are illustrated in the Wetland Delineation Report appended to the NES for the Project (Jones & Stokes 2007e).

Wetlands and Other Waters

A total of 3.467 acres of wetlands and 0.397 acres of other waters occur throughout the study area. Jurisdictional waters of the United States include SEZs and communities of special concern such as montane riparian and wet meadow habitats. Additional discussion of jurisdictional waters of the United States in the study area is found in the Wetland Delineation Report appended to the NES for the Project (Jones & Stokes 2007e).

2.3.2.3 Environmental Consequences

Approach and Methodology

The calculations for the SEZs are based on a land capability study approved by TRPA on September 24, 2007, for mapping submitted on August 6, 2007 (Gaytan pers. comm.).

Jurisdictional boundaries for wetlands and other waters were identified within the study area using on-site determination procedures described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). Other waters were based on the presence of an OHWM, as defined in 33 CFR 328.3(e).

Field work for the wetland delineation was conducted in October 2005 and September and November 2006 in accordance with the routine on-site determination method described in the *Corps of Engineers Wetlands Delineation Manual* and was field-verified in late October and early November 2007. Plant, soil, and hydrology data collected during the delineation were recorded on wetland determination data sheets, which are provided in the NES for the Project (Jones & Stokes 2007e). An upland and a wetland data point were established at each potential jurisdictional wetland. From each data point, vegetation, soil, and hydrology data were documented and analyzed. The methodology for determining the presence of the three criteria of hydrophytic vegetation, hydric soils, and wetland hydrology is described in the Wetland Delineation Report appended to the NES for the Project (Jones & Stokes 2007e).

Environmental Consequences Discussion

Impact WAT-1: Potential Permanent Loss of Stream Environment Zones (Less than Significant)

Drainage improvement activities proposed for the Project would result in the permanent loss of, or direct construction-related disturbances within, no more than approximately 1.416 acres of SEZs in the study area. Indirect impacts on SEZs could occur from adjacent construction activity and equipment. The Project includes several environmental commitments (AV-01, WL-05, and WQ-05) that would reduce impacts on SEZs identified in the study area. Therefore, implementation of the Project would have a less-than-significant impact on SEZs. No mitigation is required.

Impact WAT-2: Potential Permanent Loss of Wetlands and Other Waters of the United States (Less than Significant)

Drainage improvement activities proposed for the Project would result in the permanent loss of, or direct construction-related disturbances within, no more than approximately 0.367 acres of

wetlands and 0.120 acres⁴ of other waters in the study area. USACE requires protection of waters of the United States, including the wetlands and other waters identified in the study area, and requires mitigation for the loss of these waters. The loss or disturbance of these waters of the United States is considered adverse because they provide a variety of important ecological functions and values. The Project includes several environmental commitments (AV-01, WQ-02, and WQ-03) that would avoid or reduce impacts on wetlands and other waters identified in the study area. Therefore, implementation of the Project would have a less-than-significant impact on wetlands and other waters. No mitigation is required.

Environmental Commitments

The following environmental commitments would avoid or reduce impacts on SEZs and wetlands. A description of these environmental commitments is included at the end of this chapter, under Section 2.3.7.

- AV-01: Establish Environmentally Sensitive Areas (ESAs)
- WL-05: Limit Vegetation Removal
- WQ-02: Minimize Disturbances to Creek Channel and Adjacent Areas
- WQ-03: Containment Measures/Construction Site Best Management Practices
- WQ-05: Restore Riparian and Stream Habitat Disturbed by Construction

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

Special-status is a general term for species that are afforded varying levels of regulatory protection. USFWS and CDFG share regulatory responsibility for the protection of special-status plant species. These species are selected for protection because they are rare or subject to population and habitat declines. The highest level of protection is given to threatened and endangered species—species formally listed or proposed for listing as endangered or threatened under the FESA or the California Endangered Species Act (CESA). Section 2.3.5 contains detailed information regarding threatened and endangered species. This section discusses all other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for the FESA can be found at 16 USC 1531 et seq. (also see 50 CFR 402). The regulatory requirements for the CESA can be found at CFGC 2050 et seq. Caltrans projects are also subject to the California Native Plant Protection Act (CFGC 1900–1913) and CEQA (PRC 2100–21177).

U.S. Forest Service

Because the proposed Project will impact lands under the jurisdiction of the USFS-LTBMU, the biological evaluation (BE) process will be initiated with the USFS-LTBMU. The BE process (FSM 2672.43) is intended to conduct and document activities necessary to ensure proposed management actions will not likely jeopardize the continued existence or cause adverse modification of habitat for Federally listed species, or for species listed as Sensitive by Region 5 of USFS. The species to be considered in this document were determined based on consultation

⁴ The impact acreage calculation for other waters of the United States does not include culverts.

with the USFWS and USFS-LTBMU, and on review of the USFS Sensitive Species list for Region 5.

Current management direction for the USFS-LTBMU is a combination of direction from the recent Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement (SNFP FEIS) (U.S. Department of Agriculture 2001), applicable components of USFS-LTBMU Land and Resource Management Plan, and TRPA guidance. Though the USFS-LTBMU produced a Forest Plan in 1988, many of the goals recognized are closely related to goals and environmental thresholds established by TRPA, and the USFS-LTBMU references these to assure that their programs and projects are compatible. The *Sierra Nevada Forest Plan Amendment* has not yet been specifically integrated into the *Land and Resource Management Plan*. Therefore, some of the guidelines established in the Amendment may not apply to the 1988 Plan or may be altered to specifically address the concerns of the USFS-LTBMU. Caltrans will adhere to the management direction provided in these documents to avoid and reduce impacts to sensitive species, and for mitigation guidelines.

Exceptions to management directions for specific biological resources relevant to the proposed Project are provided in Appendix A of the Sierra Nevada Forest Plan Final Environmental Impact Statement Record of Decision (SNFP FEIS ROD: Appendix A, page A-29), which states, “Incidental removal of vegetation and down woody material for activities such as administering special use permits; maintaining recreation developments; constructing, reconstructing, and maintaining roads, trails, and right-of-ways; expanding resorts based on approved development plans; and removing trees that present imminent safety hazards may deviate from vegetation management standards and guidelines.”

The LTBMU Land and Resource Management Plan (1988) states the USFS must manage habitat of designated Management Indicator Species (MIS) in order to maintain viable population levels within the Tahoe Basin. These MIS are desired native and non-native species for which the USFS is required to monitor the effects of management practices and activities within the forest. In relation to plant species for this Project, the Land and Resource Management Plan:

- Prohibits the loss of trees greater than 30 inches dbh
- Limits the creation of forest openings to two acres
- Requires retention of all snags, except those that pose a safety hazard, and all downed material
- Prohibits land disturbing activity within 300-feet of perennial stream riparian zone unless the project is beneficial to the watershed
- Prohibits land-disturbing activities within 150-feet of seasonal stream riparian zones
- Requires sanitary waste facilities to be located outside riparian areas, except where no reasonable alternative.

Tahoe Regional Planning Agency

Under Section IX, Chapter 75 of the TRPA Code of Ordinances (Tahoe Regional Planning Agency 1987), the following ordinances apply to sensitive and uncommon plants.

- **75.0—Purpose:** This chapter sets forth standards for the preservation and management of vegetation of significant scenic, recreational, educational, scientific, or natural values of the Region, and for management of vegetation to prevent the spread of wildfire.
- **75.1—Applicability:** This chapter applies to all projects and activities which could have a detrimental effect on designated sensitive plants or uncommon plant communities, and to all areas where vegetation may contribute to a significant fire hazard.
- **75.2—Sensitive Plants and Uncommon Plant Communities:** Designation of plants for special significance is based on such values as scarcity and uniqueness. The following standards shall apply to all sensitive plants and uncommon plant communities referenced in the environmental thresholds, and to other plants or plant communities identified later for such distinction. The general locations of sensitive plant habitat and uncommon plant communities are depicted on the TRPA Special Species map overlay.
- **75.2.A—Sensitive Plants:** Projects and activities in the vicinity of sensitive plants and their associated habitat shall be regulated to preserve sensitive plants and their habitat. All projects or activities that are likely to harm, destroy, or otherwise jeopardize sensitive plants or their habitat shall fully mitigate their significant adverse effects. Those projects and activities that cannot fully mitigate their significant adverse effects are prohibited. Environmental Commitments to protect sensitive plants and their habitat include, but are not limited to:
 - (1) Fencing to enclose individual populations or habitat;
 - (2) Restrictions on access or intensity of use;
 - (3) Modifications to project design as necessary to avoid adverse impacts;
 - (4) Dedication of open space to include entire areas of suitable habitat; or
 - (5) Restoration of disturbed habitat.
- **75.2.B—Uncommon Plant Communities:** Uncommon plant communities shall be managed and protected to preserve their unique ecological attributes and other associated values. Projects and activities that have a significant adverse impact uncommon plant communities, such that normal ecological functions or natural qualities of the community are impaired, shall not be approved (Tahoe Regional Planning Agency 1987).

2.3.3.2 Affected Environment

California Natural Diversity Database Search Results

The CNDDDB (2007) search indicated that 12 sensitive plant species have been recorded within 10 miles of the study area. No sensitive plants have been previously recorded in the study area.

Sensitive Plant Species

A total of 31 sensitive plant species with potential to occur in the Project region were identified based on a review of existing information. Table 2.3.3-1 lists all sensitive plant species with the potential to occur in the Project region. After completion of the field surveys conducted in late October and early November 2007, a review of species distribution and habitat requirement data, and observations of the continual disturbance from human and road maintenance activities, the

botanist determined that 19 of the 31 species have low or no probability of occurring in the study area and therefore are unlikely to be affected by the Project. Explanations for the low probability of occurrence of each species in the study area are provided in Table 2.3.3-1 (Jones & Stokes 2007e).

The remaining 12 special-status plant species—upswept moonwort (*Botrychium ascendens*), scalloped moonwort (*Botrychium crenulatum*), Mingan moonwort (*Botrychium minganense*), western goblin (*Botrychium montanum*), subalpine fireweed (*Epilobium howellii*), Oregon fireweed (*Epilobium oreganum*), marsh willowherb (*Epilobium palustre*), American manna grass (*Glyceria grandis*), short-leaved hulsea (*Hulsea brevifolia*), Stebbins's phacelia (*Phacelia stebbinsii*), Tahoe yellow cress (*Rorippa subumbellata*), and marsh skullcap (*Scutellaria galericulata*)—have moderate potential to occur in or adjacent to the study area or may be affected by construction activities. All of these species are listed in the table below, except Tahoe yellow cress (Section 2.3.5).

Table 2.3.3-1. Special-Status Plants with Potential to Occur in the Project Vicinity

Common and Scientific Name	Legal Status ^a (Federal/State/CNPS/LTBMU/TRPA)	Geographic Distribution/ Floristic Province	Habitat Requirements	Occurrence in Study Area
Carson Range rock cress <i>Arabis rigidissima</i> var. <i>demota</i>	–/–/1B.2/LTBMU/–	Martis Peak, Placer County; Nevada	Rocky soils in broadleaved upland forest, upper montane coniferous forest; 2,255–2,560 meters; blooms August	None. occurs outside the elevational range of the study area; no known occurrences within 10 miles of the study area
Flagella-like atractyllocarpus <i>Atractyllocarpus flagellaceus</i>	–/–/2.2/–/–	Near Helena in Trinity County and Butte County; elsewhere	Cismontane woodland, often on seeps on road cut cliffs; 100–500 meters	None: occurs outside the elevational range of the study area; no known occurrences within 10 miles of the study area
Upswept moonwort <i>Botrychium ascendens</i>	–/–/2.3/LTBMU/–	Southern high Cascade Range and scattered occurrences elsewhere: Butte, El Dorado, Mono, Modoc, Plumas, Shasta, Tehama, and Tulare Counties; Idaho, Oregon, Nevada, Washington, and elsewhere	Wet areas in lower montane coniferous forest; 1,500–2,285 meters; fertile July–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area
Scalloped moonwort <i>Botrychium crenulatum</i>	–/–/2.2/LTBMU/–	Mountains of California, with scattered occurrences in Butte, Colusa, Lake, Los Angeles, Mono, Modoc, Placer, Plumas, San Bernardino, Shasta, Tehama, and Tulare Counties; Arizona, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming	Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamps; 1,500–3,280 meters; fertile June–July	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area
Mingan moonwort <i>Botrychium minganense</i>	–/–/2.2/LTBMU/–	High Cascade Range and southern Sierra Nevada, with occurrences in Butte, Fresno, Modoc, Nevada (?), Placer, Plumas, San Bernardino, Shasta, Tehama, and Tulare Counties; Arizona, Idaho, Oregon, Utah, Washington, and elsewhere	Wet areas in lower and upper montane coniferous forest; 1,500–2,055 meters; fertile July–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area
Western goblin <i>Botrychium montanum</i>	–/–/2.1/LTBMU/–	Southern high Cascade Range and Sierra Nevada, with occurrences in Butte, El Dorado, Fresno, Modoc, Plumas, Shasta, and Tehama Counties; Idaho, Oregon, and Washington	Wet areas in lower and upper montane coniferous forest; 1,500–2,130 meters; fertile July–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area

Common and Scientific Name	Legal Status ^a (Federal/State/CNPS/LTBMU/TRPA)	Geographic Distribution/ Floristic Province	Habitat Requirements	Occurrence in Study Area
Shore sedge <i>Carex limosa</i>	-/-/2.2/-/-	High Sierra Nevada, with occurrences in Butte, El Dorado, Fresno, Lassen, Nevada, Plumas, Siskiyou, and Tuolumne Counties; Nevada and elsewhere	Lower and upper montane coniferous forest, meadows and seeps, bogs and fens, marshes and swamps; 1,200–2,700 meters; blooms June–August	Low: marginal habitat is present, but occurrence is unlikely due to human and road maintenance activities; closest occurrence is 9 miles southwest of the study area
Alpine dusty maidens <i>Chaenactis douglasii</i> var. <i>alpina</i>	-/-/2.3/-/-	Northern high Sierra Nevada and northern desert mountains, with occurrences in Alpine, El Dorado, Inyo, Mono, Siskiyou, and Tuolumne Counties	Granitic soils in alpine boulder and rock field; 3,000–3,400 meters; blooms July–September	None: occurs outside the elevational range of the study area; closest occurrence is within 6 miles southwest of the study area
Fell-fields claytonia <i>Claytonia megarhiza</i>	-/-/2.3/-/-	Northern and central high Sierra Nevada and Warner Mountains, with occurrences in Alpine, Lassen, Mariposa, Mono, Modoc, Nevada, and Tuolumne Counties; Colorado, Montana, Wyoming, New Mexico, and Canada	Alpine boulder and rock field, rocky or gravely substrate in subalpine coniferous forest; 2,600–3,300 meters; blooms July–August	None; occurs outside the elevational range of the study area; no known occurrences within 10 miles of the study area
Subalpine cryptantha <i>Cryptantha crymophila</i>	-/-/1B.3/-/-	Alpine, Mono, and Tuolumne Counties	Subalpine coniferous forest on volcanic, rocky substrates; 2,600–3,200 meters; blooms July–August	None; occurs outside the elevational range of the study area; no known occurrences within 10 miles of the study area
Tahoe draba <i>Draba asterophora</i> var. <i>asterophora</i>	-/-/1B.3/LTBMU/TRPA	Northern and central high Sierra Nevada, with occurrences in Alpine, El Dorado, Mono, and Tuolumne Counties; Nevada	Alpine boulder and rock field in subalpine coniferous forest; 2,500–3,505 meters; blooms July–August	None: occurs outside the elevational range of the study area; closest occurrence is 9 miles south of the study area
Cup Lake draba <i>Draba asterophora</i> var. <i>macrocarpa</i>	-/-/1B.3/LTBMU/TRPA	Endemic to El Dorado County	Rocky areas in subalpine coniferous forest; 2,500–2,815 meters; blooms July–August	None; occurs outside the elevational range of the study area; closest occurrence is within 7 miles south of the study area
Subalpine fireweed <i>Epilobium howellii</i>	-/-/1B.3/LTBMU/-	Fresno, Madera, Mariposa, Mono, Nevada, and Sierra Counties	Wet areas in meadows and mossy seeps, subalpine coniferous forest; 2,000–2,700 meters; blooms July–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area

Common and Scientific Name	Legal Status ^a (Federal/State/CNPS/LTBMU/TRPA)	Geographic Distribution/ Floristic Province	Habitat Requirements	Occurrence in Study Area
Oregon fireweed <i>Epilobium oregonum</i>	-/-1B.2/-/-	Klamath Range and outer north Coast Ranges, with occurrences in Del Norte, El Dorado, Glenn, Humboldt, Mendocino, Nevada, Placer, Shasta, Siskiyou, Tehama, and Tuolumne Counties; Oregon	Bogs and fens, wet areas in lower and upper montane coniferous forest; 500–2,240 meters; blooms June–September	Moderate: suitable habitat is present; closest occurrence is within 3 miles west of the study area
Marsh willowherb <i>Epilobium palustre</i>	-/-1B.2/-/-	Central high Sierra Nevada in El Dorado and Plumas Counties; Idaho and elsewhere	Bogs and fens, meadows and seeps; 2,200 meters; blooms July–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area
Nevada daisy <i>Erigeron nevadincola</i>	-/-2.3/-/-	Lassen, Placer, Plumas, and Sierra Counties; also Nevada	On rocky sites in Great Basin scrub, lower montane coniferous forest, pinyon-juniper woodland; 1,400–2,900 meters; blooms May–July	Low: marginal habitat is present, but occurrence is unlikely because of human and road maintenance activities; no known occurrences within 10 miles of the study area
Donner Pass buckwheat <i>Eriogonum umbellatum</i> var. <i>torreyanum</i>	-/-1B.2/LTBMU/-	Northern high Sierra Nevada, Placer and Sierra Counties	On volcanic substrate in rocky areas in meadows and upper montane coniferous forest; 1,855–2,620 meters; blooms July–September	None: suitable habitat is not present; no known occurrences within 10 miles of the study area
American manna grass <i>Glyceria grandis</i>	-/-2.3/-/-	Scattered occurrences along the North Coast and in the Sierra Nevada in Fresno, Humboldt, Mendocino, Mono, and Placer Counties; elsewhere	Bogs and fens, meadows and seeps, along streambanks and lake margins in marshes and swamps; 15–1,980 meters; blooms June–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area
Short-leaved hulsea <i>Hulsea brevifolia</i>	-/-1B.2/LTBMU/-	Central and southern high Sierra Nevada, with occurrences in El Dorado, Fresno, Madera, Mariposa, Tulare, and Tuolumne Counties	Gravelly or sandy soils derived from granitic or volcanic substrate in lower and upper montane coniferous forest; 1,500–3,200 meters; blooms May–August	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area

Common and Scientific Name	Legal Status ^a (Federal/State/CNPS/LTBMU/TRPA)	Geographic Distribution/ Floristic Province	Habitat Requirements	Occurrence in Study Area
Long-petaled lewisia <i>Lewisia longipetala</i>	-/-/2.2/LTBMU/-	Northern high Sierra Nevada, with occurrences in El Dorado, Nevada, and Placer Counties	Alpine boulder and rock field, wet, rocky areas in subalpine coniferous forest in soils derived from granite; 2,500–2,925 meters; blooms July–August	None: occurs outside the elevational range of the study area; closest occurrence is within 3 miles south of the study area
Broad-nerved hump moss <i>Meesia uliginosa</i>	-/-/2.2/LTBMU/-	Known from El Dorado, Fresno, Madera, Mariposa (?), Nevada, Plumas, Riverside, Sierra, Siskiyou, and Tulare Counties; Nevada, Oregon, and elsewhere	On damp soils in bogs and fens, meadows and seeps, subalpine and upper montane coniferous forest; 1,300–2,800 meters	Low: marginal habitat is present, but occurrence is unlikely because of human and road maintenance activities; not observed in the study area; closest occurrence is 8 miles southeast of the study area
Northern adder's tongue <i>Ophioglossum pusillum</i>	-/-/2.2/-/-	El Dorado, Mendocino, and Siskiyou Counties; Oregon and elsewhere	Marsh and swamp margins, mesic valley and foothill grassland; 1,000–2,000 meters; fertile July	None: suitable habitat is not present in the study area; no known occurrences within 10 miles of the study area
Stebbins' phacelia <i>Phacelia stebbinsii</i>	-/-/1B.2/-/-	El Dorado, Nevada, and Placer Counties	Meadows and seeps, cismontane woodland, and lower montane coniferous forest; 610–2,010 meters; blooms June–July	Moderate: suitable habitat is present, but there are no known occurrences within 10 miles of the study area
Holly fern <i>Polystichum lonchitis</i>	-/-/3/-/-	Alpine, El Dorado, Plumas (?), Siskiyou, and Trinity (?) Counties; Arizona, Idaho, Nevada, Oregon, Utah, and Washington	Granitic or carbonate soils in subalpine coniferous forest, upper montane coniferous forest; 1,800–2,600 meters; fertile June–September	Low: marginal habitat is present, but occurrence is unlikely because of human and road maintenance activities; no known occurrences within 10 miles of the study area
Nuttall's pondweed <i>Potamogeton epihydrus</i> ssp. <i>nuttallii</i>	-/-/2.2/-/-	El Dorado, Mariposa, Mendocino, Modoc, and Plumas Counties; Oregon and elsewhere	Marshes and assorted shallow freshwater swamps; 370–1,900 meters; blooms July–August	None: suitable habitat is not present in the study area; closest occurrence is within 10 miles southwest of the study area

Common and Scientific Name	Legal Status ^a (Federal/State/CNPS/LTBMU/TRPA)	Geographic Distribution/ Floristic Province	Habitat Requirements	Occurrence in Study Area
Slender-leaved pondweed <i>Potamogeton filiformis</i>	-/-/2.2/-/-	Scattered occurrences in Contra Costa, El Dorado, Lassen, Merced, Mariposa, Modoc, Mono, Placer, Santa Clara, and Sierra Counties; Arizona, Nevada, Oregon, and Washington	Freshwater marshes and assorted shallow swamps, shallow emergent wetlands and freshwater lakes, and drainage channels; 300–2,150 meters; blooms May–July	Low: marginal habitat is present, but occurrence is unlikely because of human and road maintenance activities; closest occurrence is within 1 mile west of the study area
Tahoe yellow cress <i>Rorippa subumbellata</i>	C/E/1B.1/LTBMU/TRPA	Lake Tahoe Basin, with occurrences in El Dorado, Nevada, and Placer Counties; Nevada	Decomposed granitic beaches in lower montane coniferous forest, meadows and seeps; 1,859–1,900 meters; blooms May–September	Moderate: suitable habitat is present; closest occurrence is 0.4 miles west of SR 89 in the study area along the shore of Lake Tahoe
Water bulrush <i>Scirpus subterminalis</i>	-/-/2.3/-/-	Klamath Range and northern high Sierra Nevada	Bogs and fens, marshes and swamps in montane lake margins; 750–2,250 meters; blooms July–August	None: suitable habitat is not present in the study area; closest occurrence is within 7 miles south of the study area
Marsh skullcap <i>Scutellaria galericulata</i>	-/-/2.2/-/-	Northern high Sierra Nevada, Modoc Plateau, with occurrences in El Dorado, Lassen, Modoc, Nevada, Placer, Plumas, Shasta, San Joaquin, and Siskiyou Counties; Oregon and elsewhere	Lower montane coniferous forest, meadows and seeps, marshes and swamps; below 2,100 meters; blooms June–September	Moderate: suitable habitat is present; closest occurrence is 2 miles north of the study area
Munroe's desert mallow <i>Sphaeralcea munroana</i>	-/-/2.2/-/-	Placer County; Nevada, Oregon, and elsewhere	Great Basin scrub; 2,000 meters; blooms May–June	None: suitable habitat is not present in the study area; no known occurrences within 10 miles of the study area
Cream-flowered bladderwort <i>Utricularia ochroleuca</i>	-/-/2.2/-/-	El Dorado and Plumas Counties; Oregon, Washington, and elsewhere	Shallow water in meadows, seeps, marshes, swamps, and lake margins; 1,435–1,440 meters; blooms June–July	None: occurs outside the elevational range of the study area; no known occurrences within 10 miles of the study area

Common and Scientific Name	Legal Status ^a (Federal/State/CNPS/LTBMU/TRPA)	Geographic Distribution/ Floristic Province	Habitat Requirements	Occurrence in Study Area
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^a Status explanations:

- = no listing.
- ? = population location within county uncertain.

Federal

- C = candidate for listing under the federal Endangered Species Act.

State

- E = listed as endangered under the California Endangered Species Act.

California Native Plant Society

- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- 2 = List 2 species: rare, threatened, or endangered in California, but more common elsewhere.
- 3 = List 3 species: plants about which more information is needed to determine their status.

California Native Plant Society Code Extensions

- .1 = seriously endangered in California (more than 80% of occurrences threatened, or high degree and immediacy of threat).
- .2 = fairly endangered in California (20–80% of occurrences threatened).
- .3 = not very endangered in California (less than 20% of occurrences threatened or no current threats known).

LTBMU

Lake Tahoe Basin Management Unit sensitive species.

TRPA

Tahoe Regional Planning Agency special-interest species.

2.3.3.3 Environmental Consequences

Approach and Methodology

Biologists reviewed existing resource information related to the Project to evaluate whether sensitive species could occur in the study area. The sources listed below were reviewed:

- CNPS *Inventories of Rare and Endangered Plants* (2007)
- CNDDDB records search of USGS 7.5-minute Emerald Bay, Meeks Bay, Kings Beach, Tahoe City, Homewood, Rockbound Valley, Pyramid Peak, Echo Lake, Freel Peak, and South Lake Tahoe quadrangles (2007)
- USFWS website's list of endangered and threatened species that may occur in or be affected by projects in the aforementioned USGS 7.5-minute quadrangles (2007)
- USFS website's list of sensitive plant species by forest for the LTBMU (1998)
- Natural Environment Study for the El Dorado 50 and 89 Environmental Improvement Program/Stormwater Treatment Projects (URS 2007b).

This information was used to develop lists of sensitive species that could be present in the Project region. In addition, for the NES, botanists reviewed existing resource information related to the Project to evaluate whether sensitive plant species could occur in the study area. This information was used to develop lists of sensitive plant species that could be present in the Project region. Species from the lists were considered potentially present in the study area if they were known to occur in the region (i.e., within a 10-mile radius of the study area) or if suitable habitat for the species was known to be present in the study area.

Sensitive plant and botanical surveys were conducted in late October and early November 2007, after the appropriate identification periods for sensitive plants with potential to occur in the study area. A general botanical survey and an assessment of potential habitat for special-status plant species were conducted. Vegetation communities in the study area were also identified and mapped during the botanical and delineation field surveys. Field Surveys will be conducted again in Spring 2008 by a Caltrans biologist to verify species presence.

Environmental Consequences Discussion

Impact PLT-1: Project Impact on Special-Status Plant Species (Less than Significant)

There was no evidence of the following special-status plant species during the October and November 2007 field survey, but the surveys were conducted when the plants would not have been apparent and identifiable. Suitable habitat for the following special-status plant species is present in Paradise flat and in Sierran montane coniferous forests near drainages:

- Upswept moonwort
- Scalloped moonwort
- Mingan moonwort
- Mingan moonwort
- Subalpine fireweed

- Oregon fireweed
- Marsh willowherb
- American manna grass
- Short-leaved hulsea
- Stebbins's phacelia
- Marsh skullcap

If these special-status plants species are present in the Project area during the blooming season, drainage improvement activities would result in the permanent loss of approximately 5.205 acres of potential habitat near drainages in Sierran montane coniferous forests. Additional impacts on special-status plant species could occur from adjacent construction activity. Special-status plant species adjacent to the construction area would not be removed for construction, but could sustain damage from equipment. The implementation of Environmental Commitments AV-01 and RP-01 below would protect special-status plant species and avoid this impact. No compensatory mitigation for upswept moonwort is recommended.

Environmental Commitments

The following environmental commitments would avoid or reduce impacts on special-status plants. A description of these environmental commitments is included at the end of this chapter, under Section 2.3.7.

- AV-01: Establish Environmentally Sensitive Areas (ESAs)
- RP-01: Preconstruction Surveys for Sensitive Plant Species

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts on fish and wildlife. USFWS, the National Marine Fisheries Service (NMFS), and CDFG are responsible for implementing these laws. The USFS protects and manages natural resources in the National Forest System, including vegetation and wildlife habitat. Because the Project occurs on USFS land, coordination with the USFS regarding potential Project impacts is required. TRPA also has special interest species in the Lake Tahoe Basin, which are addressed in this document. This section discusses potential impacts and permit requirements associated with fish and wildlife not listed or proposed for listing under the FESA or CESA. Species listed as threatened or endangered are discussed in Section 2.3.5 of this IS. All other special-status animal species are discussed in this section, including CDFG fully protected species and species of special concern, and USFS sensitive species and species of management concern.

Federal laws and regulations pertaining to wildlife include National Environmental Policy Act (NEPA), the Migratory Bird Treaty Act (MBTA), and Fish and Wildlife Coordination Act. State laws and regulations pertaining to wildlife include CEQA and CFGC 1600–1603, 3503, 3503.5, 3511, 3513, 4150, and 4700.

U.S. Forest Service

Because the proposed Project will impact lands under the jurisdiction of the USFS-LTBMU, the biological evaluation (BE) process will be initiated with the USFS-LTBMU. The BE process (FSM 2672.43) is intended to conduct and document activities necessary to ensure proposed management actions will not likely jeopardize the continued existence or cause adverse modification of habitat for Federally listed species, or for species listed as Sensitive by Region 5 of USFS. The species to be considered in this document were determined based on consultation with the USFWS and USFS-LTBMU, and on review of the USFS Sensitive Species list for Region 5.

Current management direction for the USFS-LTBMU is a combination of direction from the recent SNFP FEIS (U.S. Department of Agriculture 2001), applicable components of USFS-LTBMU Land and Resource Management Plan, and TRPA guidance. Though the USFS-LTBMU produced a Forest Plan in 1988, many of the goals recognized are closely related to goals and environmental thresholds established by the TRPA and the USFS-LTBMU references these to assure that their programs and projects are compatible. The *Sierra Nevada Forest Plan Amendment* has not yet been integrated into the *Land and Resource Management Plan* specifically. Therefore, some of the guidelines established in the Amendment may not apply to the 1988 Plan or may be altered to specifically address the concerns of the USFS-LTBMU. Caltrans will adhere to the management direction provided in these documents to avoid and reduce impacts to sensitive species, and for mitigation guidelines.

In relation to this Project, the Sierra Nevada Forest Plan Amendment:

- Prohibits activities within ¼ mile of a California spotted owl nest site during the breeding season (March 1 to August 31)
- Prohibits activities within ¼ mile of northern goshawk nest site during the breeding season (Feb 15 to Sept 15)
- Prohibits activities within ¾ mile of great grey owl nest site during the breeding season (March 1 to Aug. 15)
- Prohibits activities within a 100-acre buffer area of the highest quality surrounding an American pine marten den site during the breeding and rearing season (May 1 to July 31)
- Restricts activities within a 5-mile radius of a Sierra Nevada red fox (SNRF) detection during the breeding and rearing season (May 1 to July 31) for two years following the detection.

The LTBMU Land and Resource Management Plan (1988) states the USFS must also manage habitat of designated MIS in order to maintain viable population levels within the Tahoe Basin. These MIS are desired native and non-native species for which the USFS is required to monitor the effects of management practices and activities within the forest. In relation to animal species for this Project, the Land and Resource Management Plan:

- Limits activity within 0.25 mile of known spotted owl and northern goshawk nest sites between March 1 and August 31 and February 15 and September 15, respectively.

- Limits activity near forest carnivore dens as follows: 500 acres for Pacific fisher from March 1 to June 30; 100 acres for American marten from May 1 to July 31; 250 acres for Sierra Nevada red fox from April 15 to June 15
- Limits noisy, ground disturbing activity within forest carnivore habitat for more than seven consecutive days in a drainage area.

California Fish and Game Code

Several CFGC sections apply to the Project: 1602, 3503, 3503.5, 3511, and 3513.

Section 1602: Lake or Streambed Alteration Agreements

Under CFGC 1602, public agencies are required to notify CDFG before undertaking any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFG is required to propose reasonable project changes to protect the resource. These modifications are formalized in a lake or streambed alteration agreement that becomes part of the plans, specifications, and bid documents for a project.

Sections 3503 and 3503.5: Birds and Raptors

CFGC 3503 prohibits the destruction of bird nests. CFGC 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Trees and shrubs may be present in and adjacent to the study area and could provide potential nesting habitat for birds and raptors.

Section 3511: Fully Protected Birds

The CFGC provides protection from take for a variety of species, referred to as fully protected species. CFGC 3511 lists fully protected birds and prohibits take of these species. The CFGC defines *take* as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Except for take related to scientific research, all take of fully protected species is prohibited.

Section 3513: Migratory Birds

CFGC 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA, or any part of such migratory non-game bird, except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Tahoe Regional Planning Agency

The TRPA established threshold for wildlife is provided below (Tahoe Regional Planning Agency 2007):

- **W-1—Special Interest Species:** Provide a minimum number of population sites and disturbance zones for the following species or species groups: (1) northern goshawk (*Accipiter gentilis*); (2) osprey (*Pandion haliaetus*); (3) bald eagle (*Haliaeetus leucocephalus*); (4) golden eagle (*Aquila chrysaetos*); (5) American peregrine falcon (*Falco peregrinus anatum*); (6) waterfowl (all open-water associated species); and (7) deer (*Odocoileus hemionus*). Nest sites and perch sites shown on TRPA Regional Plan Overlay Maps or in TRPA Geographic Information System shall not be physically disturbed, nor shall

the habitat in the disturbance zone be manipulated in any manner, unless necessary to enhance the quality of the habitat (TRPA Code, Chapter 78, Subsection 78.3.A).

Code of Ordinances

Section IX, Chapter 78 of TRPA's Code of Ordinances includes several ordinances related to the protection of animal species:

- **78.2—Protection of Wildlife Habitat:** Wildlife habitat shall be protected as follows:
 - **78.2.C—Critical Habitat:** Any element of the overall habitat for any species of concern, which, if diminished, could reduce the existing population or impair the stability or viability of the population, shall be considered critical habitat. This shall apply also to habitat for special interest species indigenous to the Region whose breeding populations have been extirpated but could return or be reintroduced.
 - (1) No project or activity shall cause, or threaten to cause, the loss of any habitat component considered critical to the survival of a particular wildlife species.
 - (2) No project or activity shall threaten, damage, or destroy nesting habitat of raptors and waterfowl or fawning habitat of deer.
 - (3) Wetlands shall be preserved and managed for their ecological significance, including their value as nursery habitat to fishes, nesting and resting sites for waterfowl, and as a source of stream recharge, except as permitted pursuant to Chapter 20.
 - (4) Projects or activities within wetlands may include the creation of artificial nesting sites for waterfowl.
- **78.3—Special Interest, Threatened, Endangered, and Rare Species:** Special interest species which are locally important because of rarity or other public interest, and threatened, endangered or rare species as designated under state and federal endangered species acts, shall be protected from habitat disturbance from conflicting land uses. These special interest species are: goshawk, osprey, bald eagle, golden eagle, peregrine, waterfowl, and deer. The habitat locations of these species are depicted on TRPA maps. At a minimum, the following standards shall apply for the protection of special interest, threatened, endangered and rare species and associated habitat:
 - **78.3.A—Disturbance Zones:** Perching sites and nesting trees of goshawks, peregrine falcons, eagles, and osprey as shown on the TRPA Regional Plan Overlay Maps shall not be physically disturbed in any manner nor shall the habitat in the disturbance zone be manipulated in any manner unless such manipulation is necessary to enhance the quality of the habitat. The threshold applies not only to the number of known population sites, but will also apply to the disturbance and influence zone buffers to sites found in the future.
 - (1) The disturbance zones for goshawks are 0.5 mile radius around each nest site.
 - (2) The disturbance zones for osprey and peregrine falcons are 0.25 mile radii around each nest site.
 - (3) The disturbance zones for wintering bald eagles are as shown on the TRPA maps.

- (4) The disturbance zones for nesting bald eagles are 0.5 mile radii around each nest.
- (5) The disturbance zones for golden eagles are 0.25 mile radii around each nest site.
- **78.3.B—Adverse Impacts:** Uses, projects or activities, outside existing urban areas and within the disturbance zone of special interest, threatened, endangered or rare species, shall not, directly or indirectly, significantly adversely affect the habitat or cause the displacement or extirpation of the population of those species.

2.3.4.2 Affected Environment

California Natural Diversity Database Search Results

The CNDDDB (2007) search indicated that 15 sensitive species (14 wildlife species and one fish species) have been recorded within 10 miles of the study area. One sensitive species (American marten [*Martes americana*]) has been recorded in or immediately adjacent to the study area (California Natural Diversity Database 2007).

Sensitive Fish Species

Based on a review of existing information, six sensitive fish species and species of management concern were identified as having the potential to occur in the Project region (Table 2.3.4-1). Two fish species—delta smelt (*Hypomesus transpacificus*) and Central Valley steelhead (*Oncorhynchus mykiss*)—were eliminated from further consideration because the study area is outside the species' known ranges. Lahontan Lake tui chub (*Gila bicolor pectinifer*) occupies deep lake habitats and would not occur in the river or creeks in the study area. Although there was an accidental stocking of Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) in Hidden Lake in the Meeks Creek drainage in the 1990s, there is no evidence that those fish persisted in the drainage (Lehr pers. comm.). They are not expected to be present in the side channel of Meeks Creek and therefore are not discussed further. Rainbow trout (*Oncorhynchus mykiss*) and brook trout (*Salvelinus fontinalis*) have the potential to occur in perennial sections of creeks in the study area and are discussed below.

Table 2.3.4-1. Special-Status Wildlife and Fish Species That Could Occur in the Project Vicinity

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
Great Basin rams-horn <i>Helisoma newberryi</i>	-/-/FS	Lakes and larger, slow streams in and around the periphery of the northern Great Basin; occur in Sheepy Creek (Siskiyou County), Pit River, Eagle Lake, and Lake Tahoe/Truckee River	Larger lakes and slow rivers, including larger spring sources and spring-fed creeks; these snails may be invisible even when abundant, either because of being in deep water or burrowing in soft mud	Low: not known to occur in Rubicon Creek or any of the perennial unnamed creeks in the study area and these do not provide ideal habitat
Mount Lyell salamander <i>Hydromantes platycephalus</i>	-/SSC/-	High Sierra Nevada, mostly above 8,000 feet (4,000–12,000 feet, overall), from Sonora Pass, Alpine County, to Franklin Pass area, Tulare County; low elevation records are from the south side of Yosemite Valley; isolated population at Smith Lake, Desolation Wilderness, El Dorado County	Granite rock exposures, talus, and rock fissures, near seepages from streams or melting snow, also in spray zone of waterfalls; apparently prefers north-facing slopes	Low: there is only one small granite rock outcrop (west of proposed basin 86) in the study area that may provide suitable habitat; one known occurrence about 8 miles from the study area
Yosemite toad <i>Bufo canorus</i>	C/SSC/-	Sierra Nevada from Blue Lake region north of Ebbets Pass in Alpine County to 3 miles south of Kaiser Pass in the Evolution Lake/Darwin Canyon area in Fresno County; 4,800–12,000 feet, mostly above 9,000 feet	Inhabits montane wet meadows and seasonal ponds associated with lodgepole pine and subalpine conifer forests; breeds in shallow pools or lake margins, shelters in burrows or clumps of grass, sedges, or willows	Low: study area is located north of species known range; a small amount of suitable habitat is present in the meadow in the Paradise Flat area, but this area is rather isolated from other suitable habitat; no known occurrences within 10 miles of the study area
Northern leopard frog <i>Rana pipiens</i>	-/SSC/FS	Siskiyou, Inyo, Modoc, and Lassen Counties; populations in vicinity of Lake Tahoe may have been introduced	Permanent aquatic habitat such as creeks, wet meadows, and ponds with emergent and submergent vegetation for breeding and overwintering; nearby dense grass- or forb-dominated habitats with moist soil for foraging	Low: northern leopard frog is presumed to be extirpated in the Lake Tahoe Basin based on a lack of detections in last 30 years
Mountain yellow-legged frog <i>Rana muscosa</i>	C/SSC/FS	Found in the Sierra Nevada above 4,500 feet from Plumas County to southern Tulare County; isolated populations in Butte County and near Mono Lake, Mono County	Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats	Moderate: the side channel of Meeks Creek, Lonely Gulch, and two unnamed drainages provide suitable habitat; one historic occurrence within 5 miles of the study area; several occurrences from 1995 within 7–8 miles of the study area (California Natural Diversity Database 2007)

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
Golden eagle <i>Aquila chrysaetos</i>	PR/SSC, FP/TRPA	Foothills and mountains throughout California; uncommon non-breeding visitor to lowlands such as the Central Valley	Nests on cliffs and escarpments or in tall trees overlooking open country; forages in annual grasslands, chaparral, and oak woodlands with plentiful medium- and large-sized mammals	Low: unlikely to nest in the study area and no suitable foraging habitat in the study area; no known occurrences within 10 miles of the study area
Osprey <i>Pandion haliaetus</i>	-/SSC/TRPA	Nests along the north coast from Marin County to Del Norte County, east through the Klamath and Cascade Ranges, and in the upper Sacramento Valley; important inland breeding populations at Shasta Lake, Eagle Lake, and Lake Almanor, and small numbers elsewhere south through the Sierra Nevada; winters along the coast from San Mateo County to San Diego County	Nests in snags, trees, or utility poles near the ocean, large lakes, or rivers with abundant fish populations.	High: may nest in or adjacent to study area; many records for locations of nests adjacent to the study area (California Natural Diversity Database 2007)
Bald eagle <i>Haliaeetus leucocephalus</i>	D,PR/E, FP/MI, TRPA	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties, and in the Lake Tahoe Basin; reintroduced into central coast; winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, or stream or the ocean	High: may nest in or adjacent to study area; one record for an active nest in 2005, 2006, and 2007 within 1 mile of the study area (California Natural Diversity Database 2007; Zanetti pers. comm.)
Northern goshawk <i>Accipiter gentilis</i>	-/SSC/FS, MI, TRPA	Permanent resident in the Klamath and Cascade Ranges, in the north Coast Ranges from Del Norte County to Mendocino County, and in the Sierra Nevada south to Kern County; winters in Modoc, Lassen, Mono, and northern Inyo Counties	Nests and roosts in older stands of red fir, Jeffrey pine, Ponderosa pine, lodgepole pine, Douglas fir, and mixed conifer forests	High: suitable foraging and nesting habitat in the study area; unlikely to nest in more developed portion of study area

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
American peregrine falcon <i>Falco peregrinus anatum</i>	D/E/FS, MI, TRPA	Permanent resident along the north and south Coast Ranges; may summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County; winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations	Low: no suitable nesting habitat in the study area; historic occurrence in the basin; one confirmed sighting within 3 miles of the study area and one unconfirmed sighting in the basin in 2007 (Zanetti pers. comm.)
Great gray owl <i>Strix nebulosa</i>	-/E/FS	Permanent resident of the Sierra Nevada from Plumas County south to the Yosemite area; occasionally occurs in northwestern California in winter and the Warner Mountains in summer	Old growth red fir, mixed conifer, or lodgepole pine forests bordering meadows	Low: limited lower quality habitat (because of human disturbance) in the study area; no known records of breeding in the Lake Tahoe Basin (Thayer pers. comm.); two unconfirmed records in the basin (Lyon pers. comm.)
California spotted owl <i>Strix occidentalis occidentalis</i>	-/SSC/FS, MI	Sierra Nevada from Lassen County south to northern Kern County, and in the Transverse Range, Peninsular Range, and southern coastal mountains	Old growth and mature conifer forest for nesting and foraging; usually nests within about 820 feet of water in cavities or on stick platforms; in southern California, occurs in oak and oak-conifer habitats, in addition to mature conifer forest	High: suitable nesting and foraging habitat in and adjacent to the study area; no CNDDDB records within 10 miles of the study area, but records exist in the Lake Tahoe Basin (Lyon pers. comm.)
Bank swallow <i>Riparia riparia</i>	-/T/-	Occurs along the Sacramento River from Tehama County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley, and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties; small populations near the coast from San Francisco to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	Low: may occasionally forage in the study area but unlikely to nest along creeks in the study area because they are narrow and do not provide typical habitat; one known occurrence from 1976 within 5 miles of the study area
Willow flycatcher <i>Empidonax traillii</i>	-/E/FS, MI	Summers along the western Sierra Nevada from El Dorado to Madera County, in the Cascade Range and northern Sierra Nevada in Trinity, Shasta, Tehama, Butte, and Plumas Counties, and along the eastern Sierra Nevada from Lassen to Inyo County	Riparian areas and large wet meadows with abundant willows; usually found in riparian habitats during migration	Moderate: may occasionally forage in the study area; unlikely to nest in study area because of limited dense willow thickets; known occurrence at Taylor Marsh within 2.5 miles of the study area (California Natural Diversity Database 2007)

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
Yellow warbler <i>Dendroica petechia brewsteri</i> (nesting)	-/SSC/-	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada; winters along the Colorado River and in parts of Imperial and Riverside Counties; two small permanent populations in San Diego and Santa Barbara Counties	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; also may use oaks, conifers, and urban areas near stream courses	Moderate: suitable nesting and foraging habitat in riparian habitats in the study area; known occurrence just over 10 miles from the study area (California Natural Diversity Database 2007)
Mallard <i>Anas platyrhynchos</i> and other waterfowl	-/-/TRPA	Throughout California in suitable habitat	Aquatic habitat, wetlands, and edges of wetlands	Low: aquatic and wetland habitat generally associated with waterfowl is not present in the study area
Townsend's big-eared bat <i>Corynorhinus townsendii townsendii</i>	-/SSC/FS	Coastal regions from Del Norte County south to Santa Barbara County	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings; very sensitive to disturbances and may abandon a roost after one on-site visit	Low: no suitable roosting habitat within the study area
Pallid bat <i>Antrozous pallidus</i>	-/SSC/-	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest; most closely associated with oak, mixed conifer, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California; relies heavily on trees for roosts	Moderate: may utilize trees in study area for roosting and may forage in the study area; no known occurrences within 10 miles of the study area (California Natural Diversity Database 2007)
Sierra Nevada snowshoe hare <i>Lepus americanus tahoensis</i>	-/SSC/-	In the Cascade Range in Siskiyou and Del Norte Counties and the Sierra Nevada from Mount Lassen south to Mono and Tulare Counties, generally between 4,800 and 8,000 feet	Found in dense thickets of conifers, riparian vegetation, or chaparral in boreal life zones	Moderate: suitable habitat is present within the study area; one historic record from 1959 within the study area (California Natural Diversity Database 2007)
Western white-tailed jackrabbit <i>Lepus townsendii</i>	-/SSC/-	Crest and eastern slope of the Sierra Nevada from the Oregon border to Tulare and Inyo Counties	Occurs in sagebrush, juniper, high-elevation open meadow, and early successional stages of conifer habitat; occurs in open areas with scattered shrubs and exposed flat-topped hills with stands of trees, shrubs, and a herbaceous understory	Low: study area is outside of species known range

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
Sierra Nevada mountain beaver <i>Aplodontia rufa californica</i>	-/SSC/-	Found throughout the Cascade, Klamath, and Sierra Nevada Ranges	Typical habitat is montane riparian; found in dense riparian-deciduous forest; also occurs in forests with open and intermediate canopy and a dense understory near water; requires soft soil for burrowing	Moderate: suitable habitat is present within the study area; observed at Sugar Pine Point State Park in 2001 (Zanetti pers. comm.); one CNDDB record for a burrow about 10 miles from the study area (California Natural Diversity Database 2007)
Sierra Nevada red fox <i>Vulpes vulpes necator</i>	-/T/FS	In the Cascade Range, in Siskiyou County, and in the Sierra Nevada from Lassen County south to Tulare County	Alpine dwarf-shrub, wet meadow, subalpine conifer, lodgepole pine, red fir, aspen, montane chaparral, montane riparian, mixed conifer, and ponderosa pine; in the Sierra Nevada, most sightings have been above 7,000 feet	Low: suitable habitat is present in the study area, but there are no recent records in the Lake Tahoe Basin (Lyon pers. comm.; California Natural Diversity Database 2007); one occurrence from 1973 that is more than 20 miles away (California Natural Diversity Database 2007)
Pacific fisher <i>Martes pennanti pacifica</i>	C/SSC/-	Coastal mountains from Del Norte County to Sonoma County, east through the Cascade Range to Lassen County, and south in the Sierra Nevada to Kern County	Late successional coniferous forests and montane riparian habitats	Low: study area is located within a gap of fisher distribution; one record from 1984 that is 1.5 miles from the study area and one record from 1972 that is just over 5 miles from the study area (California Natural Diversity Database 2007)
American badger <i>Taxidea taxus</i>	-/SSC/-	Throughout California, except for the humid coastal forests of northwestern California in Del Norte County and northwestern Humboldt County	Requires sufficient food, friable soils, and relatively open uncultivated ground; preferred habitat includes grasslands, savannas, and mountain meadows near timberline	Low: sufficient open habitat not present in the study area; one occurrence approximately 9 miles from the study area (California Natural Diversity Database 2007); incidental observation by the USFS in the Meeks Bay area in the past 5 years (Thayer pers. comm.)
California wolverine <i>Gulo gulo luteus</i>	-/T, FP/FS	Klamath and Cascade Ranges south through the Sierra Nevada to Tulare County	Found in a variety of mountain habitats; in north coastal areas, most sightings have been between 1,600 and 4,800 feet; the species has been found between 4,300 and 7,300 feet in the northern Sierra Nevada and between 6,400 and 10,800 in the southern Sierra Nevada; most common in open terrain above timberline and subalpine forests	Low: suitable habitat is present, but a significant portion of the study area is subject to human disturbance; there have been no sightings in the Lake Tahoe Basin in the past 30 years (Tahoe Regional Planning Agency 2002); however, the CNDDB includes a record for a sighting in 1990 within 2 miles of the study area (California Natural Diversity Database 2007)

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
American marten <i>Martes americana</i>	–/–/FS	Klamath Range, Cascade Range, and Sierra Nevada from Del Norte to Tulare County, and a small portion of the north Coast Ranges around Mendocino, Glenn, and Lake Counties	Red fir, lodgepole pine, subalpine conifer, mixed conifer, Jeffrey pine, and eastside pine habitats; habitat with limited human use is important	High: suitable habitat is present in the study area; several detections near the study area from 1993 to 2000 (Zanetti pers. comm.); six records for occurrences within 5 miles of the study area and several more within 10 miles (California Natural Diversity Database 2007)
Mule deer <i>Odocoileus hemionus</i>	–/–/MI, TRPA	Throughout California, except in intensively farmed areas without cover (Central Valley) and in deserts	Early to intermediate stages of most forest, woodland, and brush habitats; prefers a mixture of a various aged vegetation that provides woody cover, meadow, and shrubby openings and open water	High: the Carson deer herd may occur in the study area (Thayer pers. comm.); suitable habitat in the study area
Delta smelt <i>Hypomesus transpacificus</i>	T/T	Primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002)	None; study area is outside the species' known range
Lahontan cutthroat trout <i>Oncorhynchus clarki henshawi</i>	T/–/FS, MI, TRPA	Restricted to a few lakes and streams within and outside their historic range; occur in Independence Lake, Meiss Lakes basin in upper Truckee River watershed; an accidental stocking occurred to Hidden Lake in Meeks Creek drainage in the 1990s	Lakes and streams of the Lahontan basin	CDFG staff stated that Lahontan cutthroat trout is not expected to have persisted in these drainages (Lehr pers. comm.)
Central Valley steelhead <i>Oncorhynchus mykiss</i>	T/–/–	Sacramento River and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8°C to 18°C (Moyle 2002); habitat types are riffles, runs, and pools	None; study area is outside the species' known range
Rainbow trout– non-anadromous <i>Oncorhynchus mykiss</i>	–/–/MI	Widely distributed in California, from Baja California to Oregon; native to Pacific slope upstream to first impassable barriers; widely transplanted, including hatchery fish, to areas outside historic range, including the Lake Tahoe Basin	Cold, perennial freshwater systems statewide	High; suitable habitat present in study area

Common and Scientific Name	Status ^a (Federal/State/Other)	California Distribution	Habitats	Occurrence in Study Area
Brook trout <i>Salvelinus fontinalis</i>	-/-/MI	Native to east coast of United States; occurs from the San Bernardino Mountains in southern California north to the Oregon border; most abundant in the Sierra Nevada, where they have been widely introduced	High mountain lakes and streams, generally above 4,000 feet in elevation	High; suitable habitat present in study area
Lahontan Lake tui chub <i>Gila bicolor pectinifer</i>	-/SSC/FS	Found in Lake Tahoe and Pyramid Lake, Nevada, which are connected to each other by the Truckee River and in Walker Lake, Nevada	Inhabits large, deep lakes	None; no suitable habitat in the study area; only occurs in Lake Tahoe

^a Status explanations:

- = no status.

Federal

T = listed as threatened under the federal Endangered Species Act.

C = candidate for threatened or endangered status.

PR = protected by Bald and Golden Eagle Protection Act.

D = delisted (delisted species are monitored for 5 years).

State

E = listed as endangered under California Endangered Species Act.

T = listed as threatened under California Endangered Species Act.

SSC = species of special concern in California.

FP = fully protected under the California Fish and Game Code.

Other

FS = USFS sensitive species.

MI = Lake Tahoe Basin Management Unit management indicator species.

TRPA = Tahoe Regional Planning Agency special-interest species.

Sensitive Wildlife Species

Based on a review of existing information and input from the USFS and TRPA, 27 sensitive wildlife species and species of management concern were identified as having the potential to occur in the Project region (Table 2.3.4-1). After completion of the field survey and a review of species distribution and habitat requirements data, the biologist determined that 15 of the 27 species have a low chance of occurrence in the study area and therefore are unlikely to be affected by the Project. An explanation for the low chance of occurrence of each of these species in the study area is provided in (Table 2.3.4-1) (Jones & Stokes 2007e).

The remaining 12 wildlife species—mountain yellow-legged frog (*Rana muscosa*), osprey, bald eagle, northern goshawk, California spotted owl (*Strix occidentalis occidentalis*), willow flycatcher (*Empidonax traillii*), yellow warbler (*Dendroica petechia brewsteri*), pallid bat (*Antrozous pallidus*), Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*), Sierra Nevada mountain beaver (*Aplodontia rufa californica*), American marten, and mule deer—have moderate to high potential to occur in or adjacent to the study area or may be affected by construction activities (Jones & Stokes 2007e). These species are discussed below and in Section 2.3.5.

The following sensitive animal species or groups of species occur or potentially could occur in the study area and are discussed below: rainbow trout, brook trout, mountain yellow-legged frog, osprey, northern goshawk, California spotted owl, yellow warbler, pallid bat, Sierra Nevada snowshoe hare, Sierra Nevada mountain beaver, American marten, mule deer, and nesting migratory birds.

Rainbow Trout

Rainbow trout are an LTBMU fish management indicator species (U.S. Forest Service 1988). Except for the population in Eagle Lake, rainbow trout is not native to streams and lakes east of the Sierra Nevada crest.).

Focused surveys have not been completed for this species in the study area. Rainbow trout are likely to occur in the study area. Suitable habitat for this species exists in Rubicon Creek, the major drainage in the study area with perennial flow (URS 2007a) and perhaps seasonally in other drainages during periods of flow.

Brook Trout

Brook trout is an LTBMU fish management indicator species (U.S. Forest Service 1988). Focused fish surveys were not conducted in the study area. Brook trout are likely to use the drainages in the study area during seasonal flows. Potential habitat for eastern brook trout occurs in most of the perennial/intermittent streams in the study area.

Mountain Yellow-Legged Frog

Mountain yellow-legged frog is a candidate species for federal threatened status and a state species of special concern. The USFS also considers it a sensitive species. No mountain yellow-legged frogs were observed during the October and November 2007 field surveys. There is one record for mountain yellow-legged frog within 5 miles of the study area (California Natural Diversity Database 2007) (Figure 2.3.4-1). This record is for an occurrence at Fallen Leaf Lake, approximately 4 miles from the study area. There are 19 additional records for occurrences 5–10

miles from the study area (California Natural Diversity Database 2007). The side channel of Meeks Creek, Lonely Gulch, and two unnamed creeks may provide suitable breeding habitat for mountain yellow legged frogs, but high flows could preclude successful breeding. The remainder of the creeks likely preclude breeding because they are intermittent, lack pool habitat, or likely have high, fast flows. During low flows, all creeks in the study area provide suitable dispersal habitat for mountain yellow-legged frogs.

Osprey

Osprey is a state species of special concern. No ospreys were observed during the October and November 2007 field surveys. There are 20 records for osprey nests within 5 miles of the study area (California Natural Diversity Database 2007) (Figure 2.3.4-1). Eighteen of these records are for nests within 2 miles of the study area. TRPA maintains a 0.25-mile buffer around nest sites. It appears that the buffer area for one nest site recorded in the CNDDDB may be in the study area. Suitable nesting habitat for ospreys is present in the portions of the study area that contain mixed conifer forest and montane riparian habitat, especially near Emerald Bay, where SR 89 is close to Lake Tahoe.

Northern Goshawk

Northern goshawk is a state species of special concern and a USFS sensitive species. No northern goshawks were observed during the October and November 2007 field surveys. There is one record for a northern goshawk nests within 5 miles of the study area (California Natural Diversity Database 2007) (Figure 2.3.4-1). There are four additional records for nests that are 5–10 miles from the study area (California Natural Diversity Database 2007). TRPA and the USFS have mapped northern goshawk territories and protected activity centers (PACs) within the LTBMU. One PAC (Sierra Creek) is located just west of the study area and north of Lonely Gulch. In the Lake Tahoe Basin, northern goshawks have been observed at Taylor Creek, Camp Richardson, Lonely Creek, Big Meadow, Grass Lake Creek, Paradise Flat, Benwood Meadow, and Osgood Swamp (URS 2007a). No known nest sites are located in the study area. TRPA maintains a 0.5-mile no-disturbance zone around northern goshawk nest sites. Northern goshawks could nest, forage, or perch in or adjacent to the study area in mixed conifer forest.

California Spotted Owl

California spotted owl is a state species of special concern and a USFS sensitive species. No California spotted owls were observed during the October and November 2007 field surveys. There are no records for California spotted owl nests within 10 miles of the study area (California Natural Diversity Database 2007). TRPA and the USFS have conducted surveys for California spotted owl in the vicinity of the study area and have designated Home Range Core Areas (HRCAs) and PACs for the species in the Lake Tahoe Basin. HRCAs consist of large habitat blocks that have: 1) at least two tree canopy layers; 2) at least 24 inches diameter at breast height (dbh) in dominant and co-dominant trees; 3) a number of very large (more than 45 inches dbh), old trees; 4) 50% to 70% canopy cover; and 5) higher-than-average levels of snags and downed woody material (URS 2007a). There are no HRCAs or PACs for spotted owl in the study area. The closest spotted owl sighting to the study area is at Meeks Bay (URS 2007a). California spotted owls also have been observed in the Lake Tahoe Basin at Cookhouse (Grass Lake Creek), Hawley Grade, and Spring Creek (URS 2007a). California spotted owls could nest, forage, or perch in or adjacent to the study area in mixed conifer forest.

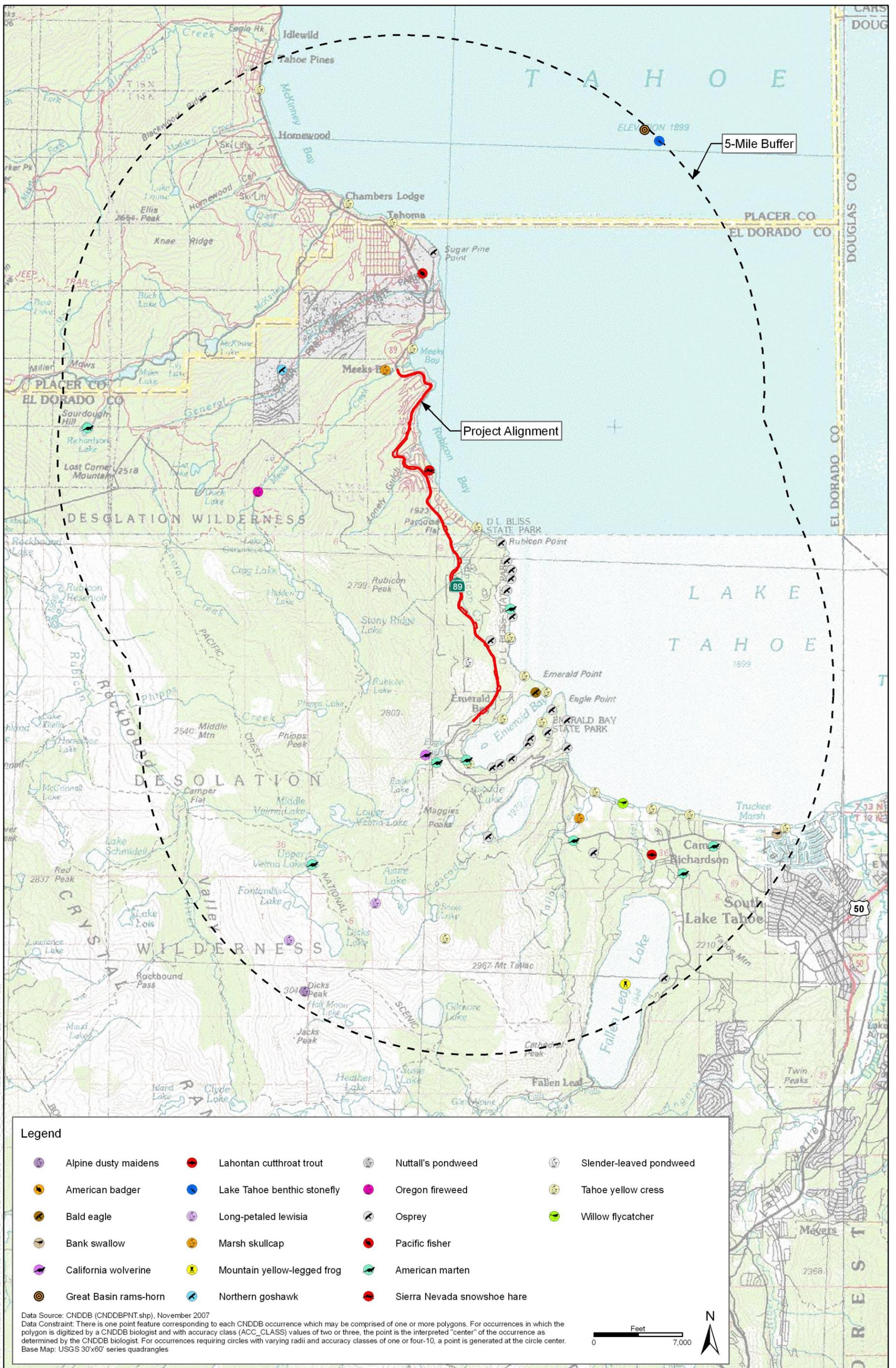


Figure 2.3.4-1
 CNDBB Occurrences within 5 Miles of the Project Area

Yellow Warbler

Yellow warbler is a state species of special concern. No yellow warblers were observed during the October and November 2007 field surveys, but they likely would have left for wintering areas by the time surveys were conducted. There is one record for nesting yellow warblers approximately 12 miles from the study area (California Natural Diversity Database 2007). Yellow warbler has been documented in wetland areas in the Lake Tahoe Basin, such as Grass Lake and Truckee Marsh. Other TRPA-documented locations occur in wetlands associated with north Fallen Leaf Lake, Meeks Meadow, and Pope Marsh (URS 2007a). Suitable habitat for yellow warbler is present in the montane riparian habitat in the study area and portions of the mixed conifer habitat that has a denser brushy understory.

Pallid Bat

Pallid Bat is a species of special concern in California. No focused surveys were conducted for pallid bat, and no bats were observed during the October and November 2007 field surveys. There are no records for pallid bats within 5 miles of the study area, but the three closest recordings are more than 10 miles from the study area (California Natural Diversity Database 2007). Pallid bats are known to occur in the Lake Tahoe Basin (Tahoe Regional Planning Agency 2002). There are no bridges or large rock outcrops with crevices in the study area that provide roosting habitat for pallid bats. However, pallid bats could use hollow trees in the study area for roosting. Pallid bats also may forage over or drink from the larger creeks in the study area.

Sierra Nevada Snowshoe Hare

Sierra Nevada snowshoe hare is a state species of special concern. No Sierra Nevada snowshoe hares were observed during the October and November 2007 field surveys; however, suitable habitat is present in the study area. There is one CNDDDB record from 1958 and 1959 of Sierra Nevada snowshoe hares collected within or immediately adjacent to the study area, and there is a second record for collection of several snowshoe hares within 10 miles of the study area, near Tahoe City (California Natural Diversity Database 2007). There are no recent records for occurrences in the study area, which may result from a lack of survey effort rather than an absence from the Lake Tahoe Basin (URS 2007a). Given the presence of suitable habitat, the study area is considered potentially occupied by this species.

Sierra Nevada Mountain Beaver

Sierra Nevada mountain beaver is a state species of special concern. No Sierra Nevada mountain beavers were observed during the October and November 2007 field surveys; however, suitable habitat is present in the study area. Sierra Nevada mountain beavers were trapped at Sugar Pine Point State Park in 2001 (Zanetti pers. comm.). There is one CNDDDB record from 1990 for a burrow about 10 miles from the study area, although no individual was observed (California Natural Diversity Database 2007). Information from TRPA indicates that this species is currently present in the Lake Tahoe Basin (Tahoe Regional Planning Agency 2002). Suitable burrowing and foraging habitat is located in the study area in montane riparian habitat located along intermittent and perennial drainages in the study area. Given the presence of suitable habitat, the study area is considered potentially occupied by this species.

American Marten

American marten is a USFS sensitive species. No American martens were observed during the October and November 2007 field surveys; however, suitable habitat is present in the study area. American marten was detected at several trackplate and camera stations near the study area from 1993 to 2000 (Zanetti pers. comm.). There are eight records for occurrences of martens within 5 miles of the study area (California Natural Diversity Database 2007) (Figure 2.3.4-1). The three closest occurrences, from 1993 or 1995, are within 1 mile of the study area. TRPA and LTBMU have recorded occurrences of American marten throughout the Lake Tahoe Basin (URS 2007a). Suitable denning and foraging habitat for American marten is present in some portions of mixed conifer forest, montane riparian, and wet meadow habitats in the study area.

Mule Deer

Mule deer is an LTBMU management indicator species and TRPA special interest species. No mule deer were observed during the October and November 2007 field surveys; however, suitable habitat is present in the study area. Mule deer are common seasonal residents of the Lake Tahoe Basin. Deer habitat in the basin consists of summer range only, mostly in the form of meadows and early to mid-successional forest with appropriate brush cover. Two deer herds are known to use the basin seasonally: the Carson River herd (primarily in the south basin) and the Loyalton-Truckee herd (primarily in the north basin). Deer that visit the basin during snow-free months migrate to lower elevations outside the basin in winter. Movements to wintering grounds can be extensive, sometimes more than 60 miles in one direction (URS 2007a).

Nesting Migratory Birds

Several migratory birds, including raptors, could nest in or adjacent to the study area. The breeding season for most birds is generally March 1 to August 31. The occupied nests and eggs of these birds are protected by federal and state laws, including CFGC Sections 3503 and 3503.5 and the MBTA. Suitable nesting habitat for migratory birds is present in the shrubs and trees in and adjacent to the study area. No nests were noticed in or adjacent to the study area during field surveys, but a focused nest survey was not conducted.

2.3.4.3 Environmental Consequences

Approach and Methodology

Biologists reviewed available resource information related to the Project to evaluate whether sensitive animal species could occur in the study area. The sources listed below were reviewed:

- CNDDDB records search of the Emerald Bay, Meeks Bay, Kings Beach, Tahoe City, South Lake Tahoe, Freel Peak, Echo Lake, Homewood, Rockbound Valley, and Pyramid Peak USGS 7.5-minute quadrangles (2007)
- USFWS list of endangered and threatened species that may occur in or be affected by projects in the aforementioned USGS 7.5-minute quadrangles (U.S. Fish and Wildlife Service 2007)
- Natural Environment Study prepared for the El Dorado 50 and 89 Environmental Improvement Program/Stormwater Treatment Projects (URS 2007b).

This information was used to develop lists of sensitive species and other sensitive biological resources that could be present in the Project region. Species from the lists were considered if

they were known to occur in the region (i.e., within a 5-mile radius of the study area) or if suitable habitat for the species was known to be present in the study area.

Field Surveys

A wildlife biologist conducted a survey in late October and early November 2007 to assess habitat suitability for sensitive wildlife species in the study area. The wildlife biologist also obtained additional information characterizing the aquatic and vegetative conditions at each crossing during the survey, and this information was provided to the fish biologist for analysis.

Agency Coordination and Professional Contacts

To compile additional information regarding animal species that could occur within or in the vicinity of the study area, biologists coordinated with federal agencies. Specifically, LTBMU was contacted to request location information on sensitive wildlife species in the vicinity of the Project. Biologists from LTBMU were also contacted to discuss fish population and habitat survey data for the South Lake Tahoe drainages. In addition, the Caltrans biologist and the TRPA wildlife biologist provided information on sensitive wildlife species that may be present in the study area (Jones & Stokes 2007e). Information from the agencies was used to refine the list of species addressed in this document (Table 2.3.4-1) and to determine the likelihood of species occurrence in the study area.

Environmental Consequences Discussion

The study area has the potential to support sensitive wildlife species. Therefore, the Project potentially would result in impacts on sensitive wildlife species. These impacts are discussed below.

Impact ANM-1: Culvert Replacement Effects on Fish Species (Less than Significant)

Caltrans is proposing to replace two culverts in perennial reaches of Rubicon Creek at PM 19.37 and PM 20.89. Fish could be killed or injured by construction equipment during the removal and replacement of the culverts. Replacement of culverts typically involves diverting water in flowing channels around the construction area to provide a dry work area where fish would be excluded.

Dewatering can temporarily alter the flow regime in the affected surface water. Generally cofferdams or other temporary structures to block or divert flow (e.g., sandbags) are installed upstream and downstream of the construction area to isolate a segment of the stream and allow dewatering of the work area. This approach allows the work area to be completely dewatered so that work can be performed in the dry area. Generally, the alteration of flow associated with the dewatering of a work area is temporary and limited to a relatively small area.

In fish-bearing streams, fish removal and exclusion can be performed using passive or active methods. Passive methods involve allowing the volitional movement of fish from the construction area as it is slowly dewatered, which often eliminates the need to capture and handle some fish. Active methods include the use of hand nets, beach seining, or electrofishing equipment to capture and move fish from the construction area that will be dewatered. Captured fish then typically are released downstream of the construction area. Depending on the number of fish captured and size of the stream, fish may be released at multiple sites to minimize

overcrowding of available habitat. Active methods of fish removal will not be utilized for this Project.

Implementation of Environmental Commitment WQ-01 below would reduce the potential for fish to be injured or killed during construction by restricting timing of construction activities as well as fish exclusion from the work areas. As a result, there would be a less-than-significant impact on rainbow and brook trout populations in drainages where culverts would be replaced. No mitigation is necessary.

Impact ANM-2: Temporary Disturbance of Mountain Yellow-Legged Frog and Its Habitat (Less than Significant)

No work is proposed in or near the side channel of Meeks Creek or in Lonely Gulch; therefore, there would be no impacts on potential habitat for mountain yellow-legged frog in these creeks. The culvert would be replaced at unnamed creek PW79, and the culvert would be replaced and extended at unnamed creek PW76. Rock energy dissipaters for erosion control also would be constructed at unnamed drainage PW76. These activities are expected to disturb the creek channel and banks. Instream work would occur during the low-flow period between July 1 and September 15 (see Environmental Commitment WQ-01). Temporary dewatering may be necessary for replacing culverts. Vegetation near the road crossing could be disturbed or removed during culvert relining or replacement and construction of rock energy riprap dissipaters. These activities may disturb mountain yellow-legged frogs or their habitat. Construction activities also could temporarily obstruct the dispersal of mountain yellow-legged frogs. Because this disturbance in the channel or along the banks would be temporary, disturbed habitat would be restored, and preconstruction surveys would be conducted (see Environmental Commitment WL-02), the Project would have a less-than-significant impact on mountain yellow-legged frogs. No mitigation is necessary.

Impact ANM-3: Loss of Trees and Temporary Disturbance of Nesting Osprey, Northern Goshawk, California Spotted Owl, Yellow Warbler, and Migratory Birds (Less than Significant)

Approximately 45.251 acres of mixed conifer forest and 3.965 acres of montane riparian habitats containing suitable nest trees for osprey, northern goshawk, California spotted owl, yellow warbler and migratory birds are located in the study area. The Project would cause construction-related disturbances in 5.205 acres of mixed conifer forest and 0.595 acres of montane riparian habitats as infiltration basins and other water quality treatments are installed. Tree removal may be necessary for construction of infiltration basins, and vegetation trimming or removal may be needed for installation of erosion control measures and lining or replacement of culverts. In addition, if construction activities occur during the breeding season (generally between February 15 and September 30) and nests are present, they could result in the disturbance of nesting ospreys, northern goshawks, California spotted owls, yellow warblers and other migratory birds.

Construction noise and activities (including controlled blasting) in the study area have the potential to disrupt normal behavior associated with foraging, nesting, breeding, rearing, and movement patterns of ospreys, northern goshawks, California spotted owls, yellow warblers and other migratory birds. Controlled blasting may be required at locations where existing rock prevents or substantially impairs excavation. Construction activity that is visible to nesting birds or construction noise could result in nest abandonment and subsequent nest failure. Impacts on

ospreys, northern goshawks, California spotted owls, yellow warblers and other migratory birds would be considered significant if the subsequent population decline affected the viability of the local population. Such disturbance also would violate CFGC Sections 3503 and 3503.5 and the MBTA. The implementation of the Project's Environmental Commitments AV-01, WL-03, WL-04, and WL-05 would ensure that the Project would have a less-than-significant impact on osprey northern goshawk, California spotted owl, yellow warbler and other migratory birds. In addition, complying with TRPA's requirements for no habitat manipulation within 0.25 mile of osprey perching and nest sites and within 0.5 mile of northern goshawk perching and nest sites would also avoid impacts to these species. No mitigation is necessary.

Impact ANM-4: Loss or Disturbance of Suitable Habitat for, and Temporary Disturbance of, Pallid Bat (Less than Significant)

Approximately 45.251 acres of mixed conifer forest containing suitable hollow trees for roosting pallid bats are located in the study area. The Project would cause construction-related disturbances in 5.205 acres of this habitat as infiltration basins and other water quality treatments are installed. Tree removal may be necessary for construction of infiltration basins, and vegetation trimming or removal may be needed for installation of erosion control measures and lining or replacement of culverts. Smaller trees (dbh < 12 inches) probably do not possess appropriate structures for use as bat day roosts (exfoliating bark, cavities, or fissures) for tree-roosting bats, such as pallid bat, and are more likely to be used as temporary night roosts. The larger trees (dbh > 12 inches) are more likely to possess appropriate structures for use as bat day roosts. If pallid bats are present in trees being removed, they could be disturbed, injured, or killed during the tree-removal process. In addition, suitable roosting sites could be removed. Construction noise and activities in the study area may temporarily disrupt normal foraging, movement, or roosting patterns in the Project vicinity. These impacts could be significant if there were a subsequent decline in the population of pallid bats or if the viability of the local population were affected. The implementation of the Project's Environmental Commitments WL-03 and WL-05 would ensure that the Project would have a less-than-significant impact on pallid bats. No mitigation is necessary.

Impact ANM-5: Loss or Disturbance of Suitable Habitat for, and Temporary Disturbance of, Sierra Nevada Snowshoe Hare, Sierra Nevada Mountain Beaver, and American Marten (Less than Significant)

Approximately 45.251 acres of mixed conifer forest, 7.710 acres of montane chaparral, 3.965 acres of montane riparian, and 0.075 acre of meadow habitats are located in the study area. Snowshoe hares will utilize chaparral habitat, snowshoe hares and martens will use conifer and meadow habitats, and all three species will use riparian areas. The Project would cause construction-related disturbances in 5.205 acres of mixed conifer, 1.802 acres of montane chaparral, and 0.595 acre of montane riparian habitats as infiltration basins and other water quality treatments are installed. Because the habitat removed would be small areas adjacent to SR 89, this impact is not considered significant. American martens are unlikely to den in the study area because of its close proximity to SR 89 and therefore impacts to marten dens are unlikely to occur. Vegetation that provides food for snowshoe hares and mountain beavers also could be removed, although the amount removed would not adversely affect the quantity of food available to the species. No mitigation is required for these impacts.

Noise and activity associated with construction (including controlled blasting) could disturb Sierra Nevada snowshoe hares, Sierra Nevada mountain beavers, and American martens temporarily. This temporary impact may disrupt normal behavioral patterns associated with foraging or breeding activities, depending on the season in which work is performed and the use of the habitat. However, because snowshoe hares and martens are most active at dawn, dusk, and night, construction activities are unlikely to affect their feeding and breeding activities. The breeding season of mountain beavers is largely outside the period of construction and mountain beavers are most active at night. Therefore, construction activities are unlikely to affect their feeding and breeding activities.

The temporary placement of small areas of fencing designating ESAs in the study area may disrupt normal foraging and movement patterns. These areas would be limited in scale and should not adversely affect movement through the study area. The Project would not increase roadway capacity or introduce features that would increase the level of service or operating speed of the facilities or provide additional highway access. Implementation of Environmental Commitments AV-01, WL-03, WL-05, WQ-02, WQ-03, and WQ-05 would benefit and ensure that the Project would have a less-than-significant impact on suitable habitat for Sierra Nevada snowshoe hare, Sierra Nevada mountain beaver, and American marten. No mitigation is necessary.

Impact ANM-6: Loss or Disturbance of Suitable Habitat for, and Temporary Disturbance of, Mule Deer (Less than Significant)

Approximately 45.251 acres of mixed conifer forest, 7.710 acres of montane chaparral, and 0.075 acre of meadow habitats are located in the study area. Portions of these areas provide suitable habitat for mule deer. The Project would cause construction-related disturbances in 5.205 acres of mixed conifer forest and 1.802 acres of montane chaparral habitats as infiltration basins and other water quality treatments are installed. Implementation of Environmental Commitments WL-03 and WL-04 would limit the amount of vegetation removed and restrict vegetation removal to outside the fawning season. Because the habitat removed would be small areas adjacent to SR 89 and deer are unlikely to fawn in these areas, this impact is not considered significant. No mitigation is required for this impact.

Noise and construction activity (including controlled blasting) could temporarily disturb mule deer, which may disrupt normal behavioral patterns associated with foraging or breeding activities, depending on the season in which work is performed and the use of the habitat. The temporary placement of small areas of fencing designating ESAs in the study area may disrupt normal foraging and movement patterns. These areas would be limited in scale and should not adversely affect movement through the study area. The Project would not increase roadway capacity, introduce features that would increase the level of service or operating speed of the facilities, or provide additional highway access. Therefore, mortality of deer from these types of changes in the roadway would not increase. Implementation of Environmental Commitments WL-03 and WL-04 would ensure that the Project would have a less-than-significant impact on suitable habitat for mule deer. No mitigation is necessary.

Environmental Commitments

The following environmental commitments would avoid or reduce impacts on special-status wildlife. A description of these environmental commitments is included at the end of this chapter, under Section 2.3.7.

- AV-01: Establish Environmentally Sensitive Areas (ESAs)
- WL-02: Preconstruction Amphibian Surveys
- WL-03: Restrict Timing of Woody Vegetation Removal
- WL-04: Preconstruction Surveys for Nesting Birds and Avoid Blasting during the Nesting Season
- WL-05: Limit Vegetation Removal
- WQ-01: Restrict Timing of In-Stream Activities
- WQ-02: Minimize Disturbances to Creek Channel and Adjacent Areas
- WQ-03: Containment Measures/Construction Site Best Management Practices
- WQ-05: Restore Riparian and Stream Habitat Disturbed by Construction

2.3.5 Threatened and Endangered Species

2.3.5.1 Regulatory Setting

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

California has enacted a similar law at the state level, the CESA, CFGC, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset Project caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing CESA. Section 2081 of the CFGC prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.3.5.2 Affected Environment

No federally listed plant or wildlife species have the potential to occur in the study area or be affected by the Project. One state-listed plant species, Tahoe yellow cress (*Rorippa subumbellata*) and two state-listed wildlife species (bald eagle and willow flycatcher) were

identified as having the potential to occur in the Project vicinity. Each species is discussed below.

Tahoe Yellow Cress

Tahoe yellow cress is a perennial rhizomatous herb that blooms from May through September. It is state-listed as endangered, a candidate for federal listing by USFWS, and a CNPS List 1B species. The USFS considers it a sensitive species, and TRPA considers it a special interest species. The geographic distribution of Tahoe yellow cress is the Lake Tahoe Basin at elevations ranging from 1,859 to 1,900 meters, with occurrences in El Dorado, Nevada, and Placer Counties and in Nevada around Lake Tahoe. Habitat requirements for Tahoe yellow cress are decomposed granitic beaches in lower montane coniferous forest, meadows, and seeps (California Native Plant Society 2007).

A known occurrence of Tahoe yellow cress occurs within 0.5 miles west of the study area along the west shore of Lake Tahoe (California Natural Diversity Database 2007). There was no evidence of Tahoe yellow cress during the October and November 2007 field surveys, but the surveys were conducted when the plants would not have been apparent and identifiable. The sand bars along the drainages provide suitable habitat for Tahoe yellow cress; however, the presence of high-velocity flows in these waterways greatly diminishes the suitability of the habitat. Therefore, it is unlikely that Tahoe yellow cress would occur within the study area boundaries.

Bald Eagle

Bald eagle was recently delisted under the FESA, but it will be monitored for 5 years. The species is state-listed as endangered and fully protected by the California Fish and Game Code. Bald eagle is also considered a Forest Service sensitive species. No bald eagles were observed during the October and November 2007 field surveys. There is one record for nesting bald eagles in 2005 at Emerald Point within 0.5 miles of the study area (California Natural Diversity Database 2007) (Figure 2.3.4-1). The nest was also active in 2006 and 2007 (Zanetti pers. comm.). TRPA maintains a 0.5-mile no-disturbance zone around bald eagle nest sites. LTBMU and TRPA have designated certain areas as Bald Eagle Management Zones (BEMZs) and Bald Eagle Wintering Habitat (BEWH). The Lake Tahoe Basin is a significant wintering area for bald eagles, and areas that have been designated as BEWH are located around Emerald Bay, Cascade Lake, and Truckee Marsh. Part of the study area may be within or is immediately adjacent to the Emerald Bay BEWH (Tahoe Regional Planning Agency 2002). Both the BEMZs and BEWH are intended to be “disturbance-free” during bald eagle wintering. Bald eagles could nest or winter in or adjacent to the study area, especially in the vicinity of Emerald Bay.

Willow Flycatcher

Willow flycatcher is a state endangered species and a USFS sensitive species. No willow flycatchers were observed during the October and November 2007 field surveys. There is one record for nesting willow flycatchers within 5 miles of the study area (California Natural Diversity Database 2007) (Figure 2.3.4-1). The record is from an occurrence at Taylor Creek Marsh, approximately 3 miles from the study area. Willow flycatchers have also been observed at Baldwin Marsh and Rabe Meadow in the Project vicinity (Tahoe Regional Planning Agency 2002). Suitable habitat for willow flycatchers is present within the alder and willow thickets along several of the drainages in the study area. Willow flycatchers could forage or perch in the

study area, but are unlikely to nest there because it does not contain large meadow areas with willow thickets that are typical of breeding habitat.

2.3.5.3 Environmental Consequences

Approach and Methodology

Information on threatened and endangered species was gathered during background research and field studies conducted for natural communities, plants, and animals, as described in Sections 2.3.2.3, 2.3.3.3, and 2.3.4.3.

Environmental Consequences Discussion

The study area is considered unlikely to support sensitive plant species, including Tahoe yellow cress, based on the lack of previously recorded occurrences, disturbance from human and road maintenance activities, and negative results of blooming-period botanical field surveys conducted in the study area. Therefore, the Project would not result in an impact on Tahoe yellow cress. No mitigation is necessary.

Impact T&E-1: Loss of Trees and Temporary Disturbance of Nesting Bald Eagles and Willow Flycatchers (Less than Significant)

Approximately 45.251 acres of mixed conifer forest and 3.965 acres of montane riparian habitat containing suitable nest trees for bald eagle are located within the study area. The montane riparian habitat also provides suitable foraging habitat and perching vegetation for willow flycatchers. The Project would cause construction-related disturbances within 5.205 acres of mixed conifer forest and 0.595 acres of montane riparian habitat as infiltration basins and other water quality treatments are installed. Tree removal may be necessary for construction of infiltration basins, and vegetation trimming or removal may be needed for installation of erosion control measures and lining or replacement of culverts. In addition, construction activities could result in the disturbance of nesting bald eagles and willow flycatchers if they occur during the breeding season (generally between February 1 and August 31) and nests are present in or near the study area.

As stated, it is unlikely that bald eagles would nest in the study area because of the proximity to SR 89 and proximity to continuous human disturbance. However, bald eagles are known to nest within 0.5 mile of the study area. Construction noise and activities (including controlled blasting) in the study area have the potential to disrupt normal behavior associated with foraging, nesting, breeding, rearing, and movement patterns of bald eagles and willow flycatchers. Because construction would not occur during the wintering period for bald eagles, wintering bald eagles would not be affected. Further, the implementation of Environmental Commitments AV-01, WL-03, WL-04, WL-05, WQ-02, and WQ-05 discussed at the end of the biological section, would reduce this impact. In addition, complying with TRPA's requirement of no habitat manipulation within 0.5 mile of bald eagle perching and nest sites would also avoid impacts to this species. Therefore, implementation of the Project would have a less-than-significant impact on bald eagle and willow flycatcher. No mitigation is necessary.

Environmental Commitments

The following environmental commitments would avoid or reduce impacts on threatened and endangered species. A description of these environmental commitments is included at the end of this chapter, under Section 2.3.7.

- AV-01: Establish Environmentally Sensitive Areas (ESAs)
- WL-03: Restrict Timing of Woody Vegetation Removal
- WL-04: Preconstruction Surveys for Nesting Birds and Avoid Blasting during the Nesting Season
- WL-05: Limit Vegetation Removal
- WQ-02: Minimize Disturbances to Creek Channel and Adjacent Areas
- WQ-05: Restore Riparian and Stream Habitat Disturbed by Construction

2.3.6 Invasive Species

2.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112, requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA guidance issued August 10, 1999 directs the use of the state’s noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project. Invasive plant species include species designated as federal noxious weeds by USDA, species listed by the California Department of Food and Agriculture (CDFA), and other invasive plants designated by California Invasive Plant Council (Cal-IPC).

Specifically, the Pacific Southwest Region of the USFS, known as Region 5, has implemented an amendment to its *Sierra Nevada Forest Plan* (2001) to carry out the provisions of Executive Order 13112. As part of project planning, this Amendment requires that noxious weed risk assessments are conducted to determine whether project activities have low, moderate, or high risk for weed spread (U.S. Forest Service 2001).

El Dorado County

The following policy within the El Dorado County General Plan Conservation and Open Space Element (El Dorado County 2004) relates to noxious weeds.

- **Policy 7.4.1.7:** The County shall continue to support the Noxious Weed Management Group in its efforts to reduce and eliminate noxious weed infestations to protect native habitats and to reduce fire hazards.

A memorandum of understanding (El Dorado County 1998) between El Dorado County and various organizations and agencies, including Caltrans, established the El Dorado County Noxious Weeds Management Group. The prevention and control of noxious weeds focuses on the exclusion, detection, eradication, and suppression of noxious weeds. Species listed by CDFA and other species of local significance as they are identified have priority in the control and eradication efforts. The memorandum of understanding specifically directs Caltrans to:

- Provide no fee encroachment permits to allow for the control of noxious weeds along state highway rights-of-way
- Coordinate with the El Dorado County Department of Agriculture on noxious weed control projects within the state highway right-of-way boundaries

- Educate the public and Caltrans employees about noxious weeds, their identification, and methods of prevention.

2.3.6.2 Affected Environment

Roads, highways, and related construction projects are some of the principal dispersal pathways for invasive plant species. Table 2.3.6-1 identifies the invasive plant species located in the study area based on field observations. Individuals of these species occur within the study area in areas of frequent disturbance, but no major infestations of invasive plants were observed in the study area.

Table 2.3.6-1. Invasive Plant Species Located in the Study Area

Species	CDFA	Cal-IPC
<i>Bromus tectorum</i> (downy brome)	–	High
<i>Cirsium vulgare</i> (bull thistle)	C	Moderate
<i>Dactylis glomerata</i> (orchard-grass)	–	Limited
<i>Hypericum perforatum</i> (Klamath weed)	C	Moderate

Notes: The CDFA and Cal-IPC lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the species, chance that eradication or control efforts would be successful, and present distribution of the species in the state. These ratings are guidelines that indicate the most appropriate action to take against a species under general circumstances.

The CDFA categories indicated in the table are defined as follows:

- **C:** State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the commissioner.
- **–:** Not listed as a noxious weed by CDFA.

The Cal-IPC categories indicated in the table are defined as follows:

- **High:** Species with severe ecological impacts, high rates of dispersal and establishment, and usually wide distribution.
- **Moderate:** Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, establishment that depends on disturbance, and limited to widespread distribution.
- **Limited:** Species with minor ecological impacts, low to moderate rates of invasion, and limited distribution, and are locally persistent and problematic.

2.3.6.3 Environmental Consequences

Approach and Methodology

The California list of noxious weed species (California Department of Food and Agriculture 2007) and invasive plant inventory (California Invasive Plant Council 2007) were reviewed to determine which invasive species occur in the study area.

Environmental Consequences Discussion

Impact INV-1: Spread of Invasive Plants during Construction and Ground-Disturbing Activities (Less than Significant)

Disturbance due to drainage improvement activities could result in the spread of invasive plants into CDFG natural communities of special concern and SEZs. Although CEQA does not specify significance criteria for the spread of invasive species, the spread of invasive species on the CDFA and Cal-IPC lists would result in a significant impact by adversely affecting natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. The federal and local agencies discussed above are responsible for preventing the introduction of invasive species; controlling the spread of these species; and minimizing their associated economic, ecological, and human health impacts. The Project includes several environmental commitments (WC-01, WC-02, and WC-03) that would reduce this impact.

Therefore, implementation of the Project would not significantly increase the spread of invasive plants. No mitigation is necessary.

Environmental Commitments

The following environmental commitments would avoid or reduce impacts from invasive species. A description of these environmental commitments is included at the end of this chapter, under Section 2.3.7.

- WC-01: Weed-Free Construction Equipment
- WC-02: Equipment Staging in Weed-Free Areas
- WC-03: Weed-Free Erosion Control

2.3.7 Environmental Commitments

AV-01: Establish Environmentally Sensitive Areas (ESAs)

Additional direct and indirect impacts on sensitive biological resources, including wetland and SEZ resources, throughout the study area will be avoided or minimized by designating these features outside the construction impact area as ESAs on Project plans and specifications. Information about ESAs will be shown on contract plans and discussed in the Special Provisions. Provisions to ESAs may include the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources or to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). Provisions of ESAs shall be implemented as a first order of work and remain in place until all construction activities are complete.

RP-01: Preconstruction Surveys for Sensitive Plant Species

A focused survey for special-status plants will be conducted during the appropriate blooming or fertile season by a qualified botanist within 30 days before the beginning of Project-related activities. The survey will be conducted within the study area. If no special-status plants are detected, no additional mitigation is required. If special-status plants are found in any areas that would be affected directly by construction activities, Caltrans will consult the appropriate agency.

WL-02: Preconstruction Amphibian Surveys

A qualified biologist shall conduct a focused survey for mountain yellow-legged frogs within 30 days prior to the beginning of Project-related activities. In the unlikely event that mountain yellow-legged frogs are found, Caltrans shall consult with USFWS regarding appropriate action to comply with the FESA before the work can be initiated. If a lapse in Project-related work of 30 days or longer occurs, a focused survey and, if required, consultation with USFWS will be needed before the work can be reinitiated.

WL-03: Restrict Timing of Woody Vegetation Removal

It is recommended that the removal of any woody vegetation (trees and shrubs) required for the Project is completed between September 1 and October 15 prior to Project construction, outside the predicted nesting season for raptors and migratory birds in this area. Vegetation removal outside this time may not proceed until a survey by a qualified biologist determines no nests are present or in use (see Environmental Commitment WL-04 below).

WL-04: Preconstruction Surveys for Nesting Birds and Avoid Blasting During the Nesting Season

If woody vegetation removal, construction, grading, or other Project-related improvements are scheduled during the nesting season of protected raptors and migratory birds (March 1–August 31), a focused survey for active nests of such birds shall be conducted by a qualified biologist within 30 days prior to the beginning of Project-related activities. If active nests are found, Caltrans shall consult with USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918 and with CDFG to comply with provisions of the California Fish and Game Code. If a lapse in Project-related work of 30 days or longer occurs, another survey and, if required, consultation with USFWS and CDFG will be needed before the work can be reinitiated. In addition, no blasting would be allowed during the nesting season.

WL-05: Limit Vegetation Removal

Vegetation removal shall be limited to the absolute minimum amount required for construction.

WQ-01: Restrict Timing of In-Stream Activities

To avoid direct impacts on fishery resources, no work will be performed within fish-bearing drainages within the study area until flows are at their seasonal low or have ceased and the streambed is dry. Furthermore, no work will be performed in the remainder of the Project's drainages until flows are at their seasonal low or have ceased and the streambed is dry, in order to avoid or minimize discharges into these systems that would degrade water quality. It is predicted that in most years, the seasonal dry period of these drainages occurs between July 15 and October 15; however, work within these drainages will be subject to stream conditions and permit restrictions.

WQ-02: Minimize Disturbances to Creek Channel and Adjacent Areas

Disruption of the streambed and adjacent riparian corridor will be minimized. All stream and riparian habitat areas outside the construction limits will be designated as ESAs as detailed in Environmental Commitment AV-01.

Disturbed areas within the construction limits, including temporary or permanent access routes, will be graded to minimize surface erosion and siltation into streambeds. Any access routes will be removed after each construction season, and the streambed and bank will be re-contoured back to the general angle of repose that existed before construction. Streambanks and adjacent areas that are disturbed by construction activities will be stabilized to avoid increased erosion during subsequent storms and runoff. Bare areas will be covered with mulch and re-vegetated to pre-Project conditions. Construction-site BMPs will be used to prevent contamination of the streambank and watercourse from construction material and debris as detailed in Environmental Commitment WQ-03.

WQ-03: Containment Measures/Construction Site Best Management Practices

Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. BMPs for erosion control will be implemented and in place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.

Caltrans' Standard Specifications Section 7-1.01G requires the contractor to submit a Water Pollution Control Plan that meets the standards and objectives set forth to minimize water

pollution impacts. The Water Pollution Control Plan also must be in compliance with the goals and restrictions identified in the Basin Plan. Any additional measures included in the CWA Section 401 certification, 1601 Agreement, CWA Section 404 permit, or TRPA permit will be complied with. These standards/objectives, at times referred to as BMPs, include those listed below.

1. Where working areas encroach on live or dry streams, lakes, or wetlands, TRPA- and Lahontan RWQCB-approved physical barriers adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes, and wetlands. During construction of the barriers, discharge of sediment into streams shall be held to a minimum. Discharge will be contained through the use of TRPA- and Lahontan RWQCB-approved measures that will keep sediment from entering protected waters.
2. Oily or greasy substances originating from the contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.
3. Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.

WQ-04: Dewatering Activities

Depending on seasonal flows, dewatering of the streambed or culvert course and or a temporary stream diversion may be necessary where culvert rehabilitation or replacement is proposed. All dewatering activities will observe Environmental Commitments WQ-1, WQ-2, and WQ-3. Any intakes that may be required for water pumps associated with wetting/irrigation/dewatering of sites shall be screened to RWQCB specifications to avoid the intake of fish. If dewatering of the site is deemed necessary, a temporary sediment-settling basin will be constructed downstream of the activity. All discharge waters associated with the dewatering activities will be pumped into the constructed basin before being allowed to reenter study area drainages.

WQ-05: Restore Riparian and Stream Habitat Disturbed by Construction

Prior to vegetation removal, the area will be surveyed by a qualified biologist for a complete accounting of species and their quantities present within the construction limits. Upon completion of Project construction, streambanks will be permanently stabilized, and the riparian areas will be re-planted with appropriate native species. Tree and shrub species that will be used for the restoration will include willow, alder, and cottonwood. Stream channels will be re-graded to preconstruction conditions.

A restoration and monitoring plan will be prepared by the Caltrans Landscape Architecture Branch and will be submitted for approval by the appropriate agencies prior to Project permitting. The restoration plan will outline and detail all planting and erosion-control activities and all associated proposed monitoring activities (including the length and timing of monitoring, success criteria, remedial actions, and documentation).

WC-01: Weed-Free Construction Equipment

All off-road construction equipment will be cleaned of potential noxious weed sources (mud and vegetation) before entering the study area (preferably before entry into the Lake Tahoe Basin), and after entering a potentially infested area before moving on to another area, to help ensure that noxious weeds are not introduced into the study area. The contractor shall employ whatever

cleaning methods are necessary (typically the use of a high-pressure water hose) to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or the use of specialized inspection tools is not required. Equipment washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside the Lake Tahoe Basin) and that do not drain into the forest or sensitive (e.g., riparian, SEZ, and wetlands) areas.

WC-02: Equipment Staging in Weed-Free Areas

Staging of equipment should occur only in weed-free areas. Landings should be placed in forested areas rather than open flats to help prevent the establishment of noxious invaders, such as yellow star thistle, which use open sunny areas.

WC-03: Weed-Free Erosion Control

To further minimize the risk of introducing additional non-native species into the area, only locally TRPA-approved plant species appropriate for the study area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified weed-free straw shall be required where erosion-control straw is to be used. In addition, any hydroseed mulch used for revegetation activities must be certified weed-free.

2.4 Cumulative Impacts

2.4.1 Introduction

A Draft PEIR (California Department of Transportation 2007a) was prepared by Caltrans in June 2007 that examines a broad range of proposed water quality improvements to eight segments of the state highway system in El Dorado County. The Project being evaluated in this IS is SR 89 Segment 4. The Draft PEIR has not been certified, but the supporting analyses of cumulative impacts are pertinent to this discussion and are comprehensive enough to serve as the basis for considering the cumulative impacts of the Project.

2.4.2 Cumulative Analysis Projects

Section 15130 of the State CEQA Guidelines addresses the evaluation of cumulative impacts. Cumulative impact analysis is based on the evaluation of a proposed project in the context of other “past, present or probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.” The Draft PEIR provided descriptions of such cumulatively considerable projects for evaluating the potential cumulative impacts of the overall program of projects. Section 3.12, Cumulative Impacts, of the Draft PEIR contains a complete discussion of those projects. The cumulative impact analysis contained in the Draft PEIR is incorporated by reference and is summarized in the discussions under Section 2.4.2. Although all projects discussed in the Draft PEIR can be considered cumulatively relevant, only those that are in the closest geographic proximity to the Project vicinity are summarized below.

2.4.2.1 Tahoe City Public Utility District

The boundaries of the Tahoe City Public Utility District extend from Emerald Bay to Dollar Hill, and along the Truckee River to the Nevada County line. The following project is within the Project vicinity and has been approved and proposed by the district (California Department of Transportation 2007a).

- **2008 Water Meter Installation Program:** The Tahoe City Public Utility District is scheduled to install service boxes with meters along its water service lines to residential properties within the Meeks Bay, Tahoe Hills, and Rubicon subdivisions. All work would be done within or immediately outside the El Dorado County right-of-way, and would occur between May and October 2008 (Beckman pers. comm.).

2.4.2.2 TRPA EIP Projects

More than 50 projects are planned under TRPA's EIP Update (2001) under the categories of air quality/transportation, fisheries, recreation, scenic resources, soil conservation/SEZs, vegetation, water quality, and wildlife. Funded from multiple sources, the projects listed include bikeway, trail, and trolley enhancements; creek and stream restoration; campground facility improvements; scenic unit improvements; bank stabilization measures; habitat restoration and protection; and BMP retrofits. TRPA-designated EIP projects must contribute to the attainment of a given threshold for the affected resource and typically would be expected to result in an overall environmental benefit (California Department of Transportation 2007a).

2.4.2.3 Caltrans EIP Projects

In addition to TRPA's planned EIP projects, as well as the water quality improvements proposed for the eight segments of the program, Caltrans has several planned highway-related EIP projects scheduled between 2005 and 2012 in El Dorado County. These include:

- Echo Summit to 1.1 miles east of Echo Summit
- 0.2 miles east of Echo Summit to Meyers Road
- SR 89 North "Y" to Trout Creek
- Trout Creek to Ski Run Boulevard.

Furthermore, within Placer County, Caltrans has nine highway-related EIP projects scheduled during this period along SR 267 and SR 28, as well as other safety and operational projects (e.g., retaining walls and erosion control) on both U.S. Highway 50 and SR 89 (California Department of Transportation 2007a).

2.4.3 Assessment of Cumulative Impacts

As identified in the cumulative analysis in the Draft PEIR, the text below discusses the potential long-term cumulative effects resulting from the Project and other projects described in Section 2.4.2, which would be considered less than significant.

2.4.3.1 Vegetation

The Draft PEIR found that activities within the Lake Tahoe Basin will result in some level of vegetation removal for site preparation. However, the removal of woody vegetation (trees and shrubs), in conjunction with proposed improvements, would be the minimum required for construction and would occur only where trees or vegetation alongside the roadway or basin location cannot be avoided. Any proposed loss of trees would be in conformance with TRPA goals and policies (e.g., large trees may be removed for large public utility projects if TRPA finds there is no reasonable alternative). As such, the planned water quality improvements would not be expected to substantially alter the species richness, relative abundance, and pattern of vegetation along SR 89 or within the context of the larger south Lake Tahoe area.

The Project would be consistent with these requirements as well and was considered in the cumulative impact analysis in the Draft PEIR. Therefore, the Project would not make a considerable contribution to a cumulative impact (California Department of Transportation 2007a).

2.4.3.2 Wildlife

As identified in the Draft PEIR, the proposed improvements would not cause an increase in urban growth, result in additional habitat fragmentation, alter existing connectivity between wildlife habitats along the highways, or cumulatively contribute to these types of impacts from other developments. The highways within the area already exist and act as a barrier to wildlife movement. The proposed improvements do not include additional permanent structures that may adversely affect wildlife movement along or across the highways (e.g., new roadways or highway access, right-of-way fencing, guardrails, and median barriers). Infrequent, temporary noise will occur because of construction activities. However, noise-reducing construction practices will be implemented as part of the Project (Impact N-1, Section 2.2.6.3). Therefore, noise from construction is not expected to result in noise impacts that would disturb nesting birds or other wildlife species.

The contribution of the proposed improvements to the cumulative loss of woody vegetation, in combination with the losses incurred from other past, present, and potential future projects, is unlikely to result in the nonattainment of TRPA environmental threshold carrying capacities for managed wildlife species in the south Lake Tahoe area. Furthermore, these activities are not expected to permanently affect the movement of fish and other aquatic organisms adversely along or across the highways, and no new barriers to aquatic migration are expected to occur. Therefore, based on these conclusions about the natural environment and the analysis of the Project in the Draft PEIR, the Project is not expected to contribute to a significant adverse cumulative impact on wildlife (California Department of Transportation 2007a).

2.4.4 Resources Cumulatively Affected

Two resources were identified as having cumulative impacts: traffic, which has a temporary impact, and water quality, which has a beneficial impact. The following discussion explains the disposition of these impacts. In both cases, the Project will not make a considerable contribution to cumulative impacts.

Cumulative Impact: Contribution to Cumulative Construction Traffic–Related Impacts (Less than Cumulatively Considerable)

Construction of the Project will take place during the period of construction of other Caltrans, TRPA, Placer County, El Dorado County, and City of South Lake Tahoe projects. Cumulative community impacts related to the projects could include temporary road closures and traffic delays. These impacts may impair access to local businesses, commercial and tourist destinations, public recreation areas, and private residences. The cumulative effects of the various construction activities are not considered significant, and implementation of the Regional TMP, the Project-specific TMP, and a public involvement plan are components of managing temporary effects of the Project. These plans will help ensure the safe and orderly passage of traffic through the construction zone and advise adjoining residents and business owners of the construction schedule so that they can plan accordingly. No mitigation is necessary.

Cumulative Benefit: Contribution to Cumulative Water Quality Improvements

The Project is intended to result in an environmental benefit to water quality. The water quality control facilities that would be installed as part of the Project would reduce soil erosion rates and improve the quality of stormwater runoff in the Project vicinity. As a result, they would have a beneficial cumulative impact on soil conservation and water quality in the Lake Tahoe Basin. Temporary contributions to water quality impacts as a result of construction of the Project would be offset by the BMPs required during construction to control the release of contaminants from the work site and by the beneficial permanent cumulative impacts on water quality from the Project.

In addition, by implementing the Project's environmental commitments, the Project would result in a net gain in restored or improved naturally functioning SEZ coverage. The quality of waters entering SEZ and jurisdictional water systems in the south Lake Tahoe area would be improved as a result of the Project.

The Project would offset its minor contribution to less-than-significant adverse impacts on biological resources with beneficial cumulative impacts on biological resources from its water quality improvements (California Department of Transportation 2007a).

2.5 Climate Change

2.5.1 Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas⁵ (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board to develop and implement regulations to reduce automobile and light

⁵ Greenhouse gases related to human activity include: Carbon dioxide, Methane, Nitrous oxide, Tetrafluoromethane, Hexafluoroethane, Sulfur hexafluoride, HFC-23, HFC-134a*, and HFC-152a*.

truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010; 2) 1990 levels by 2020; and 3) 80% below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Climate change and GHG reduction are also concerns at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change.

2.5.2 Affected Environment

According to a recent white paper by the Association of Environmental Professionals⁶ "an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases."

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

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

2.5.3 Conclusion

Caltrans recognizes the concern that carbon dioxide emissions raise for climate change. However, modeling and gauging the impacts associated with an increase in GHG emissions levels, including carbon dioxide, at the project level is not currently possible. No federal, state or regional regulatory agency has provided methodology or criteria for GHG emissions and climate change impact analysis. Therefore, Caltrans is unable to provide a scientific or regulatory based

⁶ Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents (March 5, 2007), p. 2

conclusion regarding whether the Project's contribution to climate change is cumulatively considerable.

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

Chapter 3 Comments and Coordination

Coordination with the general public and appropriate public agencies is essential for determining the scope of environmental documentation, level of analysis, required permits, and potential impacts and mitigation measures. Agency consultation and public participation for the Project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings and public meetings. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve issues through early and continuing coordination.

3.1 Early Coordination

Because the Project is one of a program of eight water quality improvements projects proposed by Caltrans in El Dorado County, early coordination occurred at a program level. An initial planning review and development phase for the program was completed in 2003, resulting in the approval of Project Study Reports for SR 89 and U.S. Highway 50 (California Department of Transportation 2003b, 2003d). The steps in that phase included the following coordination with TRPA and the Lahontan RWQCB.

3.1.1 Field Reviews

In 2005 and 2006, following initial scoping, field reviews of the stormwater collection and treatment elements of the program were performed with TRPA and Lahontan RWQCB representatives. Input from these agencies was considered, and potential basins were added, eliminated, or relocated to better fit the existing field conditions.

3.1.2 Other Coordination

The 2003 Project Study Reports were circulated to TRPA and the Lahontan RWQCB for review and comment. The Caltrans *Lake Tahoe Basin Environmental Improvement Program Delivery Plan* (2005) was provided to stakeholders in the Lake Tahoe Basin, including TRPA and the Lahontan RWQCB. In addition, the Caltrans Tahoe Basin Team, which includes Caltrans, TRPA, and Lahontan RWQCB representatives, meets regularly about issues that are common to the planning, design, construction, and maintenance activities related to the Caltrans projects in the Lake Tahoe Basin (California Department of Transportation 2007a). Caltrans regularly attends monthly meetings with TRPA to provide input and answer questions on the EIP projects. Additionally, Caltrans conducts field reviews with TRPA and Lahontan RWQCB staff as needed on specific segments to illustrate and discuss proposed treatment options. Caltrans also may establish a focused working group, including key agency staff from TRPA and the Lahontan RWQCB, to address specific issues as the projects progress in the development process and to foster effective communication among stakeholders.

3.2 Public Participation and Coordination

Public participation and coordination for the Project included the following activities.

3.2.1 Mailing List

Caltrans developed a comprehensive mailing list that included the names and addresses of property owners whose property adjoins SR 89 within the Project boundaries. In addition, the mailing list included federal, State of California, State of Nevada, and local agencies; elected and appointed officials and staff; and potentially interested groups and organizations. This list was used for notification of the intent to adopt a Negative Declaration.

3.2.2 Availability of the Initial Study

The availability of the IS and proposed Negative Declaration and notification of the public review period were advertised (see the contact information page following the cover, titled “General Information About This Document”). Comments on the IS may be submitted via email or in writing. Following completion of the public review period, all comments received during the review period will be considered and responded to before a decision is made to finalize this environmental document. Copies of the IS and proposed Negative Declaration were made available for review and comment at the following locations:

Caltrans North Region Office of Environmental Management
2800 Gateway Oaks Drive
Sacramento, CA 95833

El Dorado County Public Library
South Lake Tahoe Branch
1000 Rufus Allen Boulevard
South Lake Tahoe, CA 96150

The IS is also available for review on the Caltrans website:
<http://www.dot.ca.gov/dist3/departments/envinternet/envdoc.htm>.

Chapter 4 List of Preparers

This IS and its supporting studies were prepared by a multidisciplinary team of environmental and engineering specialists.

4.1 California Department of Transportation

The following individuals were involved in management, oversight, and review of the IS and technical reports and were also responsible for preparation of the specific technical reports listed below:

- Jody Brown—Project management
- Brenda Powell-Jones—Project coordination
- David Watkins—Project engineering and design
- Gail St. John—Architectural history
- Julia Green—Archaeology
- Michele Lukkarila—Natural environment and wetlands
- Rajive Chadha—Initial Site Assessment for Hazardous Waste
- Christine Ottaway—Visual Impact Assessment

4.2 Consultant Team: Jones & Stokes

The following consultant team members were involved in compiling this IS and were responsible for preparation of the specific technical reports listed below:

- Chris Brungardt—Project direction
- Michele Del Duca—Project management
- Beth Eggerts—Project coordination
- Bill Kasson—Community Impact Assessment
- Sandra DeVoto—Community Impact Assessment
- Marina Pelosi—Air Quality Technical Memorandum, Noise Technical Memorandum
- Gabriel Roark—Archaeological Study Report, Historic Property Survey Report
- Mark Bowen—Historic Property Survey Report
- Kathryn Haley—Historic Property Survey Report
- Nate Martin—Water Quality Study

- Jennifer Haire—Natural Environment Study
- Joy Nishida—Natural Environment Study, Wetland Delineation
- Kristin Teddy—Microstation/impact calculations
- Alex Angier—Microstation/impact calculations
- Lily Douglas—Geographic Information Systems
- John Durnan—Graphic arts
- Tim Messick—Graphic arts
- Chris Small—Technical editing
- Sarah Sol—Technical editing
- Jody Job—Publications specialist
- Veronica Olaiola—Publications specialist

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5.2 Personal Communications

Beckman, Jack. Construction Project Manager, Tahoe City Public Utility District, Tahoe City, CA. January 2, 2008—conversation regarding planned projects within the district.

Gaytan, Steve. Tahoe Regional Planning Agency Coordinator, California Department of Transportation, Sacramento, CA. September 10, 2007—telephone conversation. October 1, 2007—telephone call with Joy Nishida, Jones & Stokes, Sacramento, CA. November 6, 2007—email with Claire Bromund, Jones & Stokes, regarding September 24, 2007, TRPA approval of a land capability study with SEZs identified.

Lehr, Stafford. District Fishery Biologist, California Department of Fish and Game, Rancho Cordova, CA. August 1, 2007—telephone conversation with Jeff Kozlowski, Jones & Stokes, regarding potential sensitive fish species found in the study area.

Zanetti, Shay. Wildlife Biologist. Lake Tahoe Basin Management Unit, U.S. Forest Service, South Lake Tahoe, CA. December 18, 2007—email to Jennifer Haire that provided additional information for the sensitive-wildlife-species table.

Appendix A Project Layout Sheets

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

NOTE:
 1. FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
 2. BASIS OF BEARING IS 2006 CCS ZONE 2, PLANE 34.

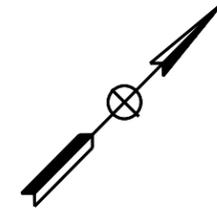
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 REVISION
 DATE

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 CHECKED BY
 CALCULATED-DESIGNED BY

CONSULTANT SUPERVISOR
 FUNCTIONAL SUPERVISOR
 MARK RAYBACK

LEGEND

- ROCK ENERGY DISSIPATION (R.E.D.)
- AC SHOULDER WITH DIKE
- VEGETATED SWALE
- SLOPE DIRECTION ARROWS
- SAND TRAP
- INFILTRATION BASIN
- GRADING LIMITS (CUT/FILL)
- SEZ LIMITS
- EXISTING R/W
- APN
- EXISTING ROADWAY
- EXISTING AC SHOULDER W/DIKE
- EXISTING CONTOUR
- WATERWAY
- CURVE TAG
- ESL BOUNDARY



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	89	18.00/24.91	0	27

REGISTERED CIVIL ENGINEER DATE _____
 MARK CASEY
 No. 047126
 Exp. 12/31/07
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE _____
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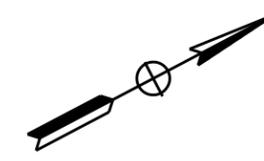
DRAFT PROJECT REPORT PLANS



ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-0**

NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



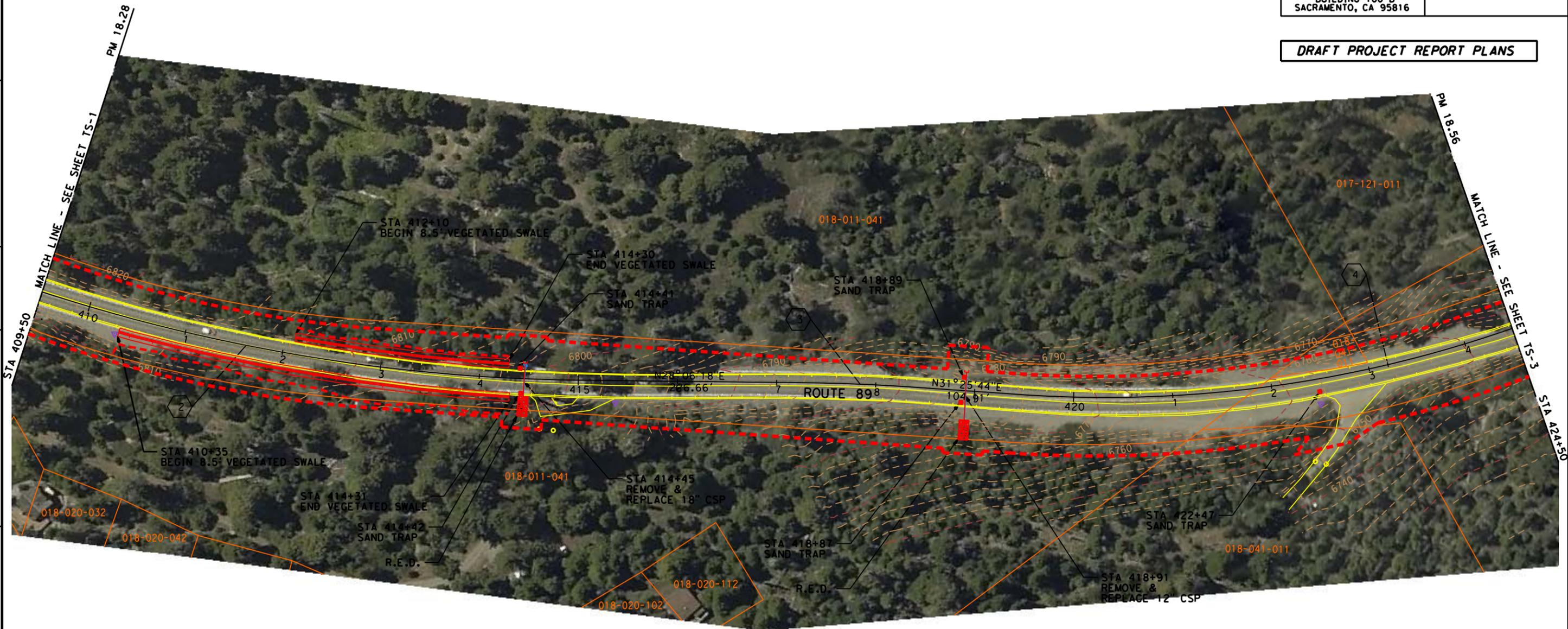
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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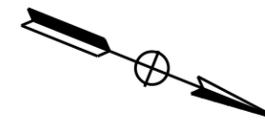
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ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

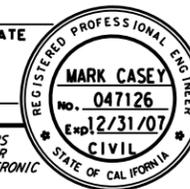
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NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Caltrans	MARK RAYBACK	MARK CASEY	BRIAN WACKER
		CHECKED BY	DATE REVISOR



11	RADIUS	508.53'
	DELTA	48°18'58"
	LENGTH	428.83'
	TANGENT	228.10'
	CHORD	416.24' @ N28°13'52"W

ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-6**

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EA 03-1A8440

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NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

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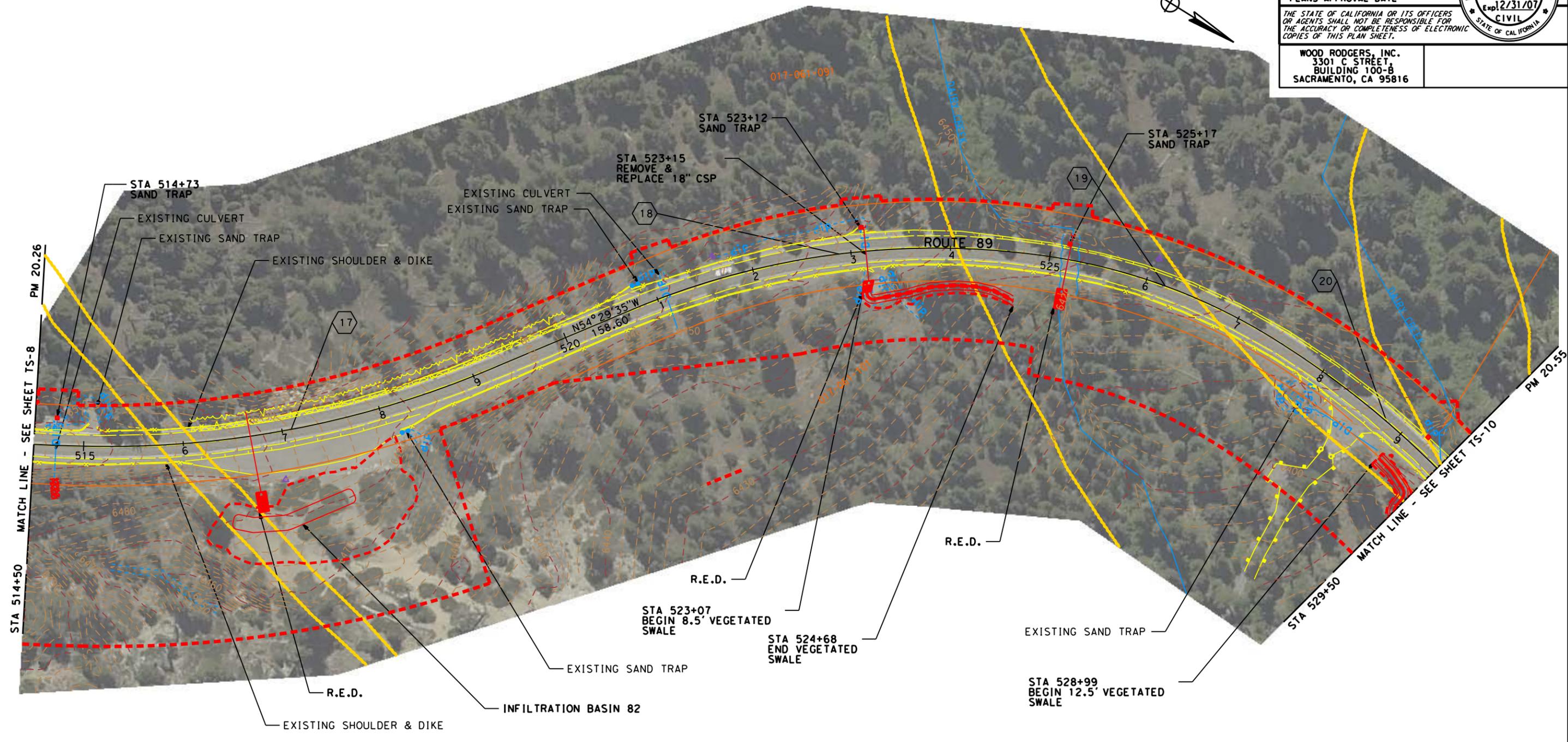
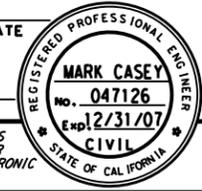
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REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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> CURVE DATA

<p>17 RADIUS 984.25' DELTA 24°04'52" LENGTH 413.68' TANGENT 209.94' CHORD 410.64' @ N42°27'09"W</p>	<p>18 RADIUS 780.43' DELTA 31°19'12" LENGTH 426.61' TANGENT 218.78' CHORD 421.32' @ N38°49'59"W</p>	<p>19 RADIUS 591.41' DELTA 22°56'33" LENGTH 236.81' TANGENT 120.01' CHORD 235.23' @ N11°42'06"W</p>	<p>20 RADIUS 899.92' DELTA 18°14'04" LENGTH 286.40' TANGENT 144.42' CHORD 285.19' @ N8°53'12"E</p>
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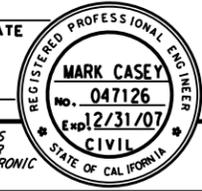
ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' ESL-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISOR	DATE
	MARK RAYBACK	MARK RAYBACK	MARK CASEY	BRIAN WACKER		
					REVISOR	DATE
					REVISOR	DATE
					REVISOR	DATE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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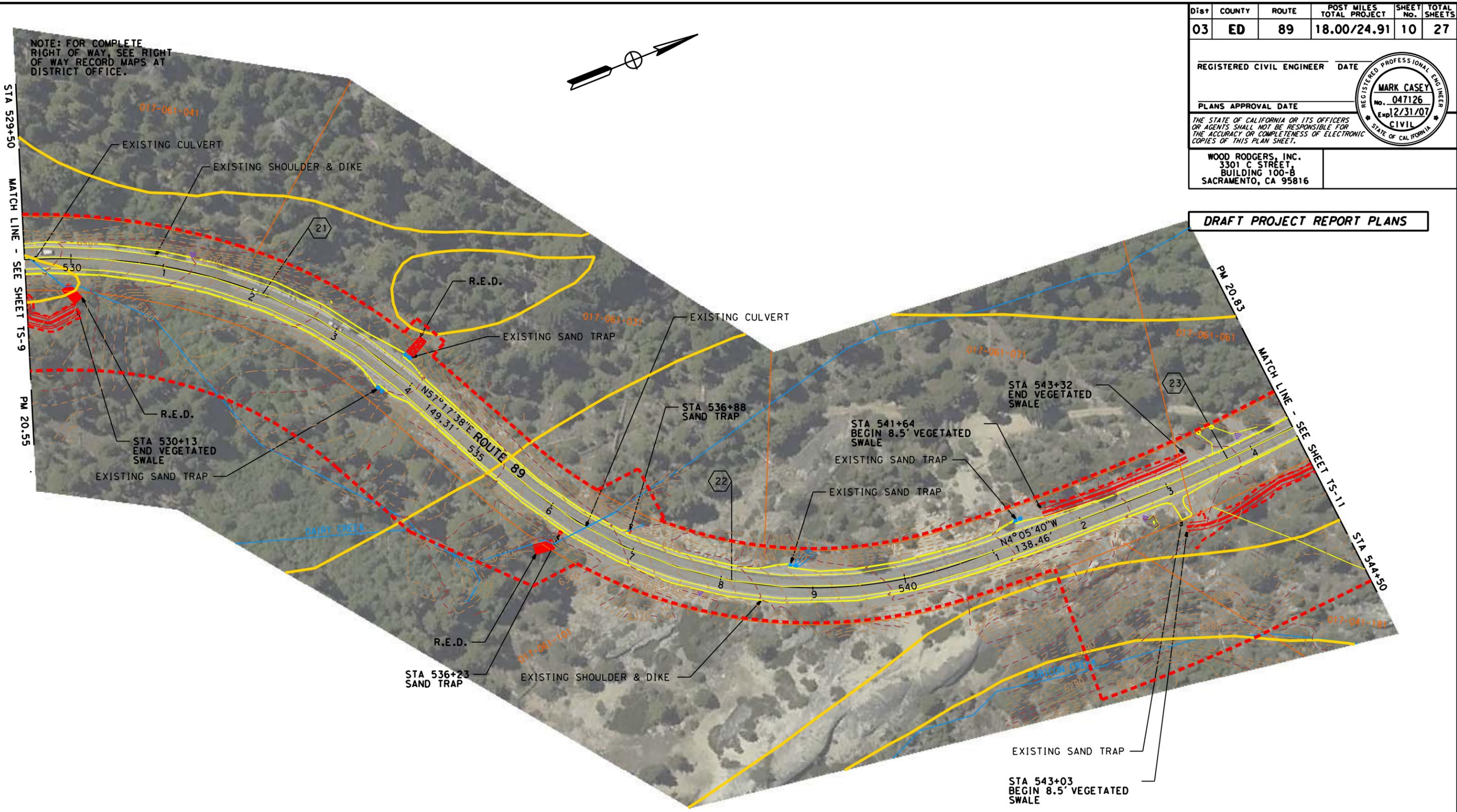
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		CHECKED BY	DATE REVISED
		MARK CASEY	



21	RADIUS 545.87' DELTA 39°17'23" LENGTH 374.32' TANGENT 194.86' CHORD 367.03' @ N37°38'56"E	22	RADIUS 492.12' DELTA 61°23'18" LENGTH 527.28' TANGENT 292.13' CHORD 502.42' @ N26°35'59"E	23	RADIUS 1968.50' DELTA 9°12'23" LENGTH 316.31' TANGENT 158.49' CHORD 315.97' @ N8°41'52"W
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ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-10**

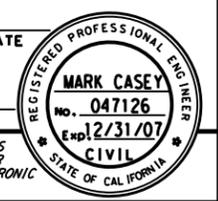


NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



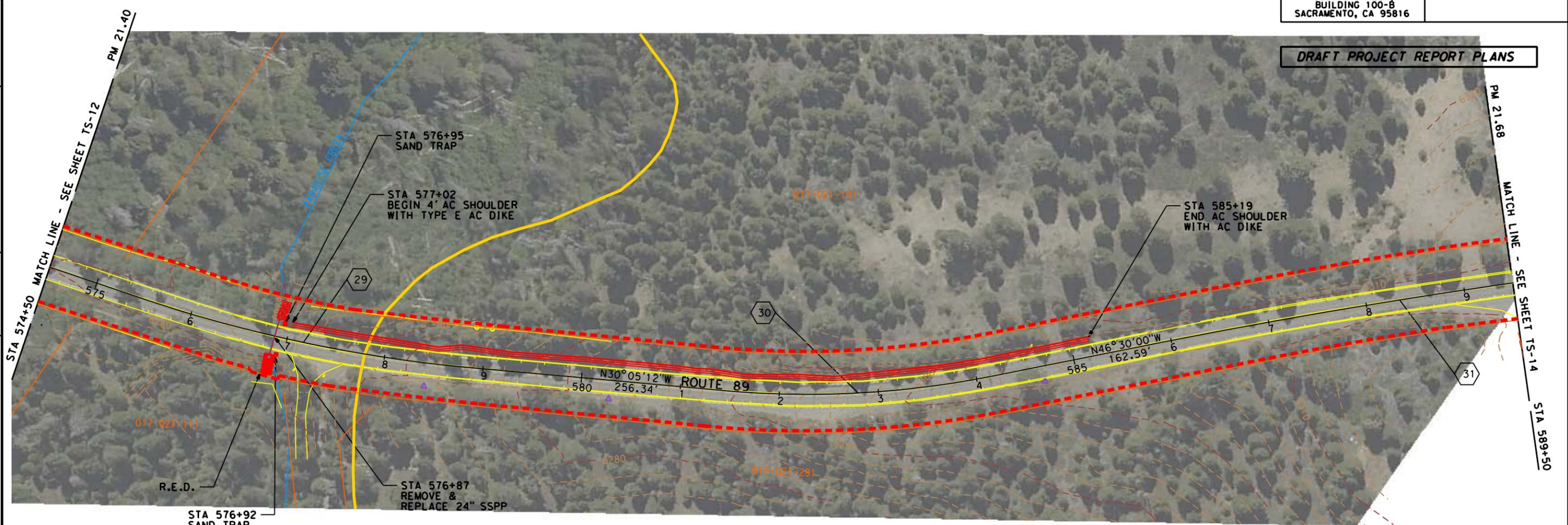
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REGISTERED CIVIL ENGINEER DATE _____
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<p>29 RADIUS 1443.57' DELTA 13°30'01" LENGTH 340.14' TANGENT 170.86' CHORD 339.36' @ N23°20'11"W</p>	<p>30 RADIUS 951.44' DELTA 16°24'48" LENGTH 272.56' TANGENT 137.22' CHORD 271.63' @ N38°17'36"W</p>	<p>31 RADIUS 6496.05' DELTA 4°30'30" LENGTH 511.14' TANGENT 255.70' CHORD 511.01' @ N44°14'45"W</p>
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ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-13**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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 MARK RAYBACK

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 CHECKED BY
 BRIAN WACKER
 MARK CASEY

REVISED BY
 DATE REVISED

NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

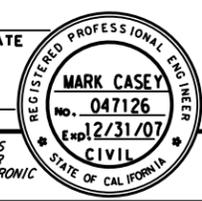
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REGISTERED CIVIL ENGINEER DATE

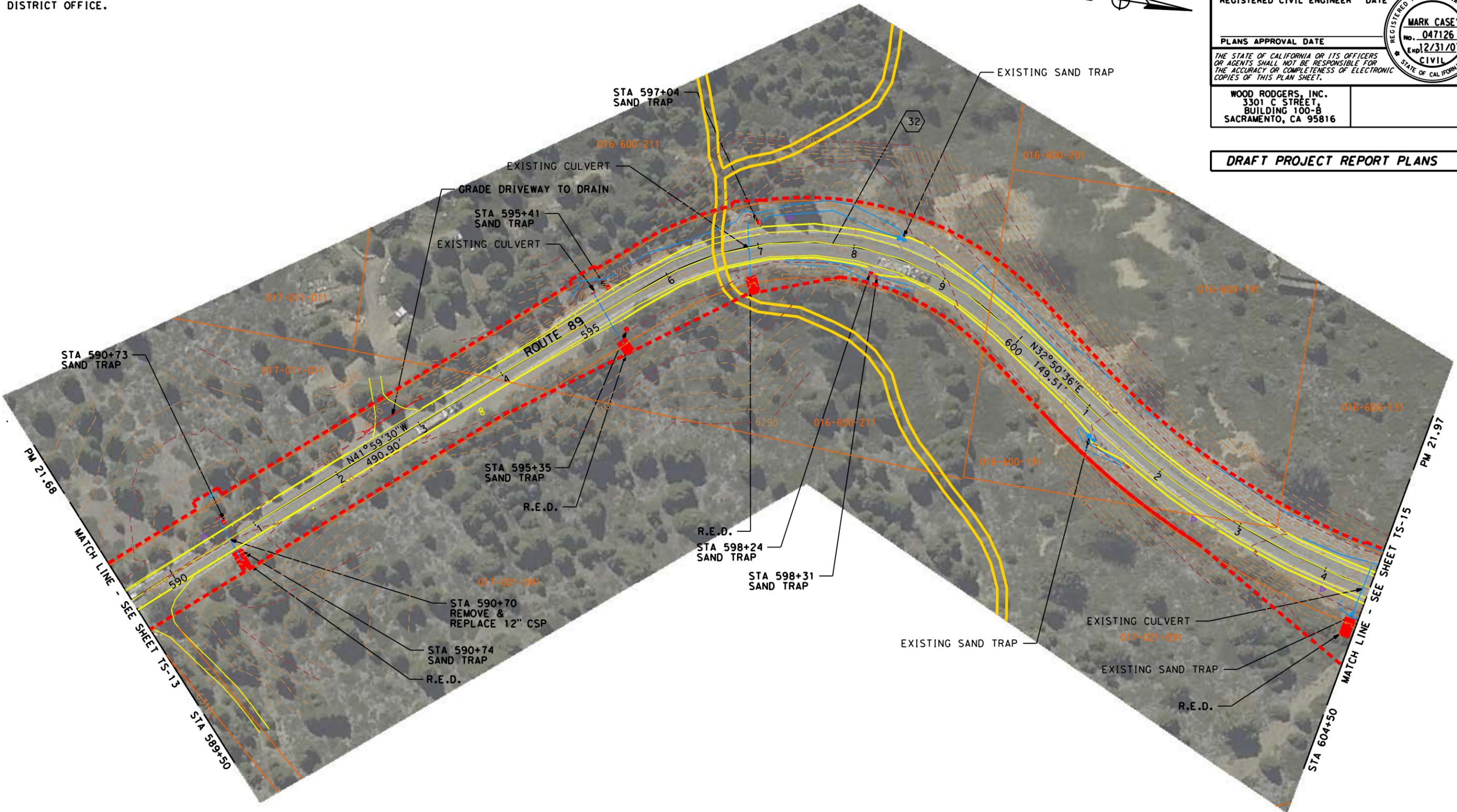
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32	RADIUS	301.84'
	DELTA	74°50'06"
	LENGTH	394.23'
	TANGENT	230.92'
	CHORD	366.80' @ N4°34'27\"W

ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-14**

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			CHECKED BY	DATE REVISOR	

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NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	89	18.00/24.91	16	27

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Mark RAYBACK	MARK CASEY	BRIAN WACKER	DATE
	CHECKED BY	DATE REVISOR	



> CURVE DATA

35	RADIUS	301.84'	36	RADIUS	541.34'
	DELTA	67°04'02"		DELTA	35°38'23"
	LENGTH	353.31'		LENGTH	336.73'
	TANGENT	200.04'		TANGENT	174.01'
	CHORD	333.49' @ N74°57'12"W		CHORD	331.33' @ S89°19'59"W

ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-16**

NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

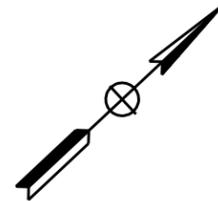
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	89	18.00/24.91	20	27

REGISTERED CIVIL ENGINEER DATE _____
 MARK CASEY
 No. 047126
 Exp. 2/31/07
 CIVIL
 STATE OF CALIFORNIA

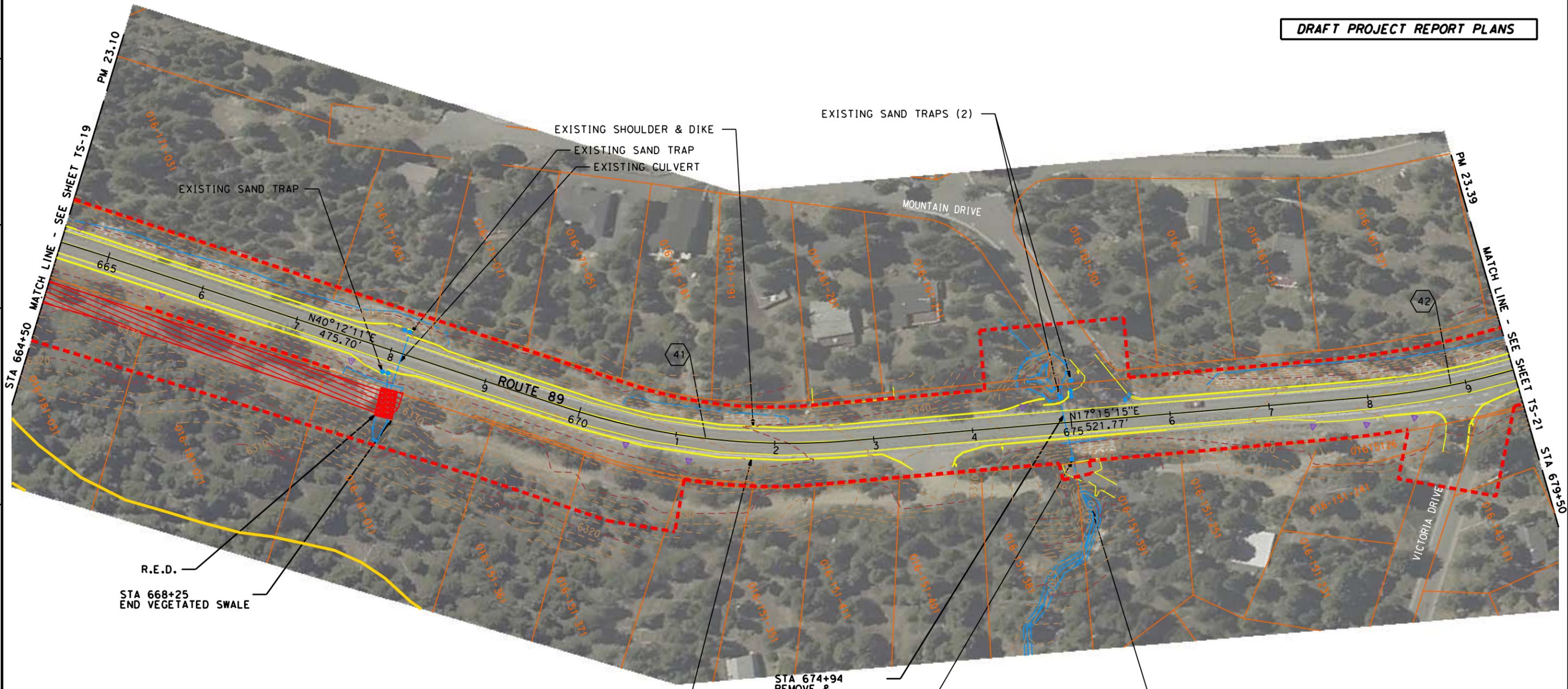
PLANS APPROVAL DATE _____
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

WOOD RODGERS, INC.
 3301 C STREET,
 BUILDING 100-B
 SACRAMENTO, CA 95816

DRAFT PROJECT REPORT PLANS



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
Caltrans	MARK RAYBACK	MARK CASEY	BRIAN WACKER	
		CHECKED BY	DATE REVISOR	
			MARK CASEY	



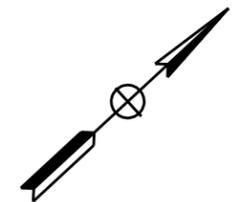
> CURVE DATA

41	RADIUS	721.78'	42	RADIUS	771.00'
	DELTA	22°56'56"		DELTA	13°08'38"
	LENGTH	289.10'		LENGTH	176.87'
	TANGENT	146.51'		TANGENT	88.83'
	CHORD	287.17' @ N28°43'43"E		CHORD	176.48' @ N10°40'56"E

ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-20**

NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	89	18.00/24.91	23	27

REGISTERED CIVIL ENGINEER DATE _____
 MARK CASEY
 No. 047126
 Exp. 12/31/07
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE _____
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WOOD RODGERS, INC.
 3301 C STREET,
 BUILDING 100-B
 SACRAMENTO, CA 95816

DRAFT PROJECT REPORT PLANS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
Caltrans	MARK RAYBACK	MARK CASEY	BRIAN WACKER
		CHECKED BY	DATE REVISOR
			DATE REVISOR



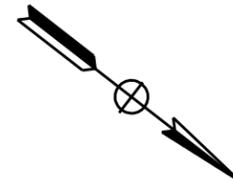
> CURVE DATA

⬡ 47	RADIUS	1115.48'	⬡ 48	RADIUS	204.07'
	DELTA	13°22'15"		DELTA	118°25'21"
	LENGTH	260.31'		LENGTH	421.78'
	TANGENT	130.75'		TANGENT	342.48'
	CHORD	259.72' @ N34°18'53"E		CHORD	350.61' @ N18°12'40"W

ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-23**

NOTE: FOR COMPLETE RIGHT OF WAY, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	89	18.00/24.91	24	27

REGISTERED CIVIL ENGINEER DATE
 MARK CASEY No. 047126 Exp. 12/31/07 CIVIL
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

WOOD RODGERS, INC.
 3301 C STREET, BUILDING 100-B
 SACRAMENTO, CA 95816

DRAFT PROJECT REPORT PLANS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
Caltrans	MARK RAYBACK	MARK CASEY	BRIAN WACKER
		CHECKED BY	DATE REVISOR



49	RADIUS	324.80'
	DELTA	76° 58' 25"
	LENGTH	436.35'
	TANGENT	258.24'
	CHORD	404.27' @ N38° 56' 08" W

ROUTE 89 EIP ENVIRONMENTAL STUDY LIMIT SITE PLANS

HORIZ. SCALE 1"=50' **ESL-24**

BORDER LAST REVISED 3/1/2007



USERNAME => \$USER
 DGN FILE => \$REQUEST

CU 00000

EA 03-1A8440

LAST REVISION DATE PLOTTED => \$DATE
 12-01-07 TIME PLOTTED => \$TIME

Appendix B CEQA Checklist

Appendix B CEQA Checklist

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
I. AESTHETICS — Would the Project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 on 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 Department 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 nonagricultural 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, because of their location or nature, could result in conversion of Farmland, to nonagricultural 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 checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IV. BIOLOGICAL RESOURCES — Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 Incorporated	Less-than-Significant Impact	No Impact
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
VI. GEOLOGY AND SOILS — Would the Project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles 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 2 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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"/>
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 checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 2 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"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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"/>
XIII. PUBLIC SERVICES —				
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<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 —				
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XV. 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 checked="" type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
XVI. 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 Incorporated	Less-than-Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers 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"/>
XVII. 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 that 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"/>

Appendix C TRPA Checklist



INITIAL ENVIRONMENTAL CHECKLIST FOR DETERMINATION OF ENVIRONMENTAL IMPACT

I. Assessor's Parcel Number (APN)/ Various APNs/State Route 89 between Eagle Falls
Project Location: Viaduct and Meeks Creek

Project Name ED-89 PM 18.0–24.9 Water Quality Improvements **County/City** El Dorado County

Brief Description of Project

The Project proposes to improve the quality of stormwater runoff by collecting and treating the stormwater runoff from State Route (SR) 89 by implementing the following improvements where feasible and warranted: rehabilitating existing drainage systems and installing new drainage systems, including infiltration basins and water conveyance systems; deploying treatment best management practices (BMPs); providing rock slope protection; constructing rock energy dissipaters for erosion control; regrading driveways; revegetating bare or erodible areas; where permitted by the Lahontan Regional Water Quality Control Board and Tahoe Regional Planning Agency (TRPA), allowing sheet flow off of roadways to allow the spreading and subsequent infiltration of runoff water prior to reaching any identified water of the United States or stream environment zone areas; placing asphalt-concrete overlay (1.8 inches); digging out failed pavement sections; and lining or replacing culverts in poor condition. To allow for construction, temporary access to or use of lands outside the Caltrans right-of-way would be required. This access or use is typical of most major roadway projects and would allow for the temporary staging of equipment and construction, and access to and from the construction areas. Construction easements would be defined during the preparation of plans, specifications, and estimates for the Project. Construction activities would require the clearing of vegetation where facilities would be installed. Tree removal would be necessary in some locations but would be minimized through further refinement of basin and facility design. State, regional, and local vegetation and tree removal requirements and permitting would be followed. During construction, the contractor would be required to develop and implement erosion control measures and plans and to follow seasonal restrictions applicable to projects in the Lake Tahoe Basin. The removal and replacement of existing pavement and the installation of new paved areas along the highways would occur during construction. New vehicle pullouts might require earthwork and disturbance of existing slopes. New cut slopes would be stabilized with rock-slope protection or vegetation. TRPA scenic threshold criteria would be considered in the design of slope protection systems. Excavation and earthwork would be necessary for the installation of pavement, runoff basins, water collection and control devices, and similar facilities. Excavated earth and materials not reused at the Project site or elsewhere would be disposed of by the contractors at appropriate disposal facilities. The contractors may need to use controlled blasting, involving a single blast with a small charge, at locations where existing rock prevents or substantially impairs excavation. Permanent, long-term BMPs, including asphalt dikes and new drainage systems, would be implemented for controlling potential impacts on existing waterways or storm drainage facilities.

The following questionnaire will be completed by the applicant based on evidence submitted with the application. All "Yes" and "No, With Mitigation" answers will require further written comments.

II. Environmental Impacts:

1. Land

Will the proposal result in:

- a. Compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)?
 Yes No
 No, With Mitigation Data Insufficient
- b. A change in the topography or ground surface relief features of site inconsistent with the natural surrounding conditions?
 Yes No
 No, With Mitigation Data Insufficient
- c. Unstable soil conditions during or after completion of the proposal?
 Yes No
 No, With Mitigation Data Insufficient
- d. Changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet?
 Yes No
 No, With Mitigation Data Insufficient
- e. The continuation of or increase in wind or water erosion of soils, either on or off the site?
 Yes No
 No, With Mitigation Data Insufficient
- f. Changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake?
 Yes No
 No, With Mitigation Data Insufficient
- g. Exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mud slides, ground failure, or similar hazards?
 Yes No
 No, With Mitigation Data Insufficient

2. Air Quality

Will the proposal result in:

- a. Substantial air pollutant emissions?
 Yes No
 No, With Mitigation Data Insufficient
- b. Deterioration of ambient (existing) air quality?
 Yes No
 No, With Mitigation Data Insufficient
- c. The creation of objectionable odors?
 Yes No
 No, With Mitigation Data Insufficient
- d. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?
 Yes No
 No, With Mitigation Data Insufficient

- e. Increased use of diesel fuel?
 Yes No
 No, With Mitigation Data Insufficient

Explanation:

- c. Pavement resurfacing would create temporary odors. This effect would be very limited in duration.
 e. The use of diesel fuel by construction equipment would be temporary.

3. Water Quality

Will the proposal result in:

- a. Changes in currents, or the course or direction of water movements?
 Yes No
 No, With Mitigation Data Insufficient
- b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site?
 Yes No
 No, With Mitigation Data Insufficient
- c. Alterations to the course or flow of 100-yearflood waters
 Yes No
 No, With Mitigation Data Insufficient
- d. Change in the amount of surface water in any water body?
 Yes No
 No, With Mitigation Data Insufficient
- e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?
 Yes No
 No, With Mitigation Data Insufficient
- f. Alteration of the direction or rate of flow of ground water
 Yes No
 No, With Mitigation Data Insufficient
- g. Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?
 Yes No
 No, With Mitigation Data Insufficient
- h. Substantial reduction in the amount of water otherwise available for public water supplies?
 Yes No
 No, With Mitigation Data Insufficient
- i. Exposure of people or property to water related hazards such as flooding?
 Yes No
 No, With Mitigation Data Insufficient
- j. The potential discharge of contaminants to the groundwater or any alteration of groundwater quality?
 Yes No
 No, With Mitigation Data Insufficient
- k. Is the project located within 600 feet of a drinking water source?
 Yes No
 No, With Mitigation Data Insufficient

Explanation:

- a. The Project would only slightly increase the amount of impervious surface resulting in concentrating and possibly redirecting flows to specified water quality treatment facilities. The flow rates associated

with the water quality improvements along the Project segment would not be altered substantially that would affect the quantity of surface runoff or groundwater downstream of the construction areas.

- e. Impacts on drainage patterns would be minor and consist only of directing runoff into new drainage facilities. The Project proposes to implement improvements, such as infiltration basins and culverts, along SR 89 that would collect and treat the surface water runoff to remove sediments and pollutants. These facilities would increase the amount of sediments and pollutants that would be filtered out of the surface water, thereby improving the surface water quality leaving the right-of-way.
- g. The Project would increase the infiltration of stormwater runoff into groundwater.

4. Vegetation

Will the proposal result in:

- a. Removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient
- b. Removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table?

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient
- c. Introduction of new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient
- d. Change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora and aquatic plants)?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient
- e. Reduction of the numbers of any unique, rare or endangered species of plants?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input checked="" type="checkbox"/> Data Insufficient
- f. Removal of stream bank and/or backshore vegetation, including woody vegetation such as willows?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient
- g. Removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications?

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient
- h. A change in the natural functioning of an old growth ecosystem

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> No, With Mitigation	<input type="checkbox"/> Data Insufficient

Explanation:

- b. Some removal of riparian vegetation may be required. Removal of riparian vegetation would be kept to a minimum. Efforts to restore previously disturbed areas would be attempted where possible. Some trees and vegetation may be removed where basin and other drainage facilities are proposed. Impacts on trees and existing vegetation would be minimized during the design of the drainage facilities.
- f. Construction at streambanks and creeks would be minimized, as would the removal of woody vegetation.
- g. The proper permits will be obtained before the removal of any native live, dead, or dying trees that measure 30 inches in dbh or more within land classified for conservation or recreation uses.

5. Wildlife

Will the proposal result in:

- a. Change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians or microfauna)?
- Yes No
 No, With Mitigation Data Insufficient
- b. Reduction of the number of any unique, rare or endangered species of animals?
- Yes No
 No, With Mitigation Data Insufficient
- c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?
- Yes No
 No, With Mitigation Data Insufficient
- d. Deterioration of existing fish or wildlife habitat quantity or quality?
- Yes No
 No, With Mitigation Data Insufficient

Explanation:

- a. Some common species of animals could be killed during tree removal and other construction activities. Because of the limited scope of the Project, the number of common animals lost is expected to be low. Environmental Commitments for the Project would reduce or avoid the loss of sensitive animal species.
- b. Environmental Commitments for the Project would reduce or avoid the loss of any sensitive animal species.
- d. Small amounts of habitat would be converted to infiltration basins and small areas of habitat would be temporarily affected during construction. Environmental commitments for the Project would minimize impacts on habitat and would restore habitat temporarily affected by the Project. In addition, because the Project components would collect, treat, and transport runoff from SR 89, the Project would reduce the potential for contaminants to enter water bodies in the Project area, potentially improving water quality and aquatic habitat.

6. Noise

Will the proposal result in:

- a. Increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan?
- Yes No
 No, With Mitigation Data Insufficient
- b. Exposure of people to severe noise levels
- Yes No
 No, With Mitigation Data Insufficient
- c. Single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold?
- Yes No
 No, With Mitigation Data Insufficient

Explanation:

- a. The Project would not contribute any new traffic and therefore would not change traffic-related noise levels with respect to the TRPA CNEL noise thresholds. The noise thresholds could be exceeded temporarily during heavy or sustained construction activities. TRPA-approved construction projects are exempt from the TRPA Noise Ordinance if the construction activities occur between 8:00 a.m. and 6:30 p.m.

7. Light and Glare

Will the proposal:

- a. Include new or modified sources of exterior lighting?
 Yes No
 No, With Mitigation Data Insufficient
- b. Create new illumination, which is more substantial than other lighting, if any, within the surrounding area?
 Yes No
 No, With Mitigation Data Insufficient
- c. Cause light from exterior sources to be cast off –site or onto public lands?
 Yes No
 No, With Mitigation Data Insufficient
- d. Create new sources of glare through the siting of the improvements or through the use of reflective materials?
 Yes No
 No, With Mitigation Data Insufficient

8. Land Use

Will the proposal:

- a. Include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan?
 Yes No
 No, With Mitigation Data Insufficient
- b. Expand or intensify an existing non-conforming use?
 Yes No
 No, With Mitigation Data Insufficient

9. Natural Resources

Will the proposal result in:

- a. A substantial increase in the rate of use of any natural resources?
 Yes No
 No, With Mitigation Data Insufficient
- b. Substantial depletion of any non-renewable natural resource?
 Yes No
 No, With Mitigation Data Insufficient

10. Risk of Upset

Will the proposal:

- a. Involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions?
 Yes No
 No, With Mitigation Data Insufficient
- b. Involve possible interference with an emergency evacuation plan?
 Yes No
 No, With Mitigation Data Insufficient

11. Population

Will the proposal:

- a. Alter the location, distribution, density, or growth rate of the human population planned for the Region?
 Yes No
 No, With Mitigation Data Insufficient
- b. Include or result in the temporary or permanent displacement of residents?
 Yes No
 No, With Mitigation Data Insufficient

12. Housing

Will the proposal:

- a. Affect existing housing, or create a demand for additional housing?

To determine if the proposal will affect existing housing or create a demand for additional housing, please answer the following questions:

- (1) Will the proposal decrease the amount of housing in the Tahoe Region?

Yes No
 No, With Mitigation Data Insufficient

- (2) Will the proposal decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households?

Yes No
 No, With Mitigation Data Insufficient

- b. Will the proposal result in the loss of housing for lower-income and very-low-income households?

Yes No
 No, With Mitigation Data Insufficient

Number of Existing Dwelling Units:

N/A

Number of Proposed Dwelling Units:

N/A

13. Transportation/Circulation

Will the proposal result in:

- a. Generation of 100 or more new Daily Vehicle Trip Ends (DVTE)?
 Yes No
 No, With Mitigation Data Insufficient
- b. Changes to existing parking facilities, or demand for new parking?
 Yes No
 No, With Mitigation Data Insufficient
- c. Substantial impact upon existing transportation systems, including highway, transit, bicycle or pedestrian facilities?
 Yes No
 No, With Mitigation Data Insufficient
- d. Alterations to present patterns of circulation or movement of people and/or goods?
 Yes No
 No, With Mitigation Data Insufficient
- e. Alterations to waterborne, rail or air traffic?
 Yes No
 No, With Mitigation Data Insufficient
- f. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?
-

- Yes No
 No, With Mitigation Data Insufficient

14. Public Services

Will the proposal have an unplanned effect upon, or result in a need for new or altered governmental services in any of the following areas?

- a. Fire protection?
 Yes No
 No, With Mitigation Data Insufficient
- b. Police protection?
 Yes No
 No, With Mitigation Data Insufficient
- c. Schools?
 Yes No
 No, With Mitigation Data Insufficient
- d. Parks or other recreational facilities?
 Yes No
 No, With Mitigation Data Insufficient
- e. Maintenance of public facilities, including roads?
 Yes No
 No, With Mitigation Data Insufficient
- f. Other governmental services?
 Yes No
 No, With Mitigation Data Insufficient

15. Energy

Will the proposal result in:

- a. Use of substantial amounts of fuel or energy?
 Yes No
 No, With Mitigation Data Insufficient
- b. Substantial increases in demand upon existing sources of energy, or require the development of new sources of energy?
 Yes No
 No, With Mitigation Data Insufficient

16. Utilities

Except for planned improvements, will the proposal result in a need for new systems, or substantial alterations to the following utilities:

- a. Power or natural gas?
 Yes No
 No, With Mitigation Data Insufficient
- b. Communication systems?
 Yes No
 No, With Mitigation Data Insufficient
- c. Utilize additional water which amount will exceed the maximum permitted capacity of the service provider?
 Yes No
 No, With Mitigation Data Insufficient

- d. Utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider?
- Yes No
 No, With Mitigation Data Insufficient
- e. Storm water drainage?
- Yes No
 No, With Mitigation Data Insufficient
- f. Solid waste and disposal?
- Yes No
 No, With Mitigation Data Insufficient

17. Human Health

Will the proposal result in:

- a. Creation of any health hazard or potential health hazard (excluding mental health)?
- Yes No
 No, With Mitigation Data Insufficient
- b. Exposure of people to potential health hazards?
- Yes No
 No, With Mitigation Data Insufficient

18. Scenic Resources/Community Design

Will the proposal:

- a. Be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe?
- Yes No
 No, With Mitigation Data Insufficient
- b. Be visible from any public recreation area or TRPA designated bicycle trail?
- Yes No
 No, With Mitigation Data Insufficient
- c. Block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area?
- Yes No
 No, With Mitigation Data Insufficient
- d. Be inconsistent with the height and design standards required by the applicable ordinance or Community Plan?
- Yes No
 No, With Mitigation Data Insufficient
- e. Be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines?
- Yes No
 No, With Mitigation Data Insufficient

Explanation:

- a. The Project is located on and immediately adjacent to SR 89.
- b. D. L. Bliss State Park and Meeks Bay Campground are adjacent to SR 89 and visible from the Project.

19. Recreation

Does the proposal:

- a. Create additional demand for recreation facilities?
- Yes No

- No, With Mitigation Data Insufficient
- b. Create additional recreation capacity?
 Yes No
 No, With Mitigation Data Insufficient
- c. Have the potential to create conflicts between recreation uses, either existing or proposed?
 Yes No
 No, With Mitigation Data Insufficient
- d. Result in a decrease or loss of public access to any lake, waterway, or public lands?
 Yes No
 No, With Mitigation Data Insufficient

20. Archaeological/Historical

- a. Will the proposal result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building?
 Yes No
 No, With Mitigation Data Insufficient
- b. Is the proposed project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records?
 Yes No
 No, With Mitigation Data Insufficient
- c. Is the property associated with any historically significant events and/or sites or persons?
 Yes No
 No, With Mitigation Data Insufficient
- d. Does the proposal have the potential to cause a physical change, which would affect unique ethnic cultural values?
 Yes No
 No, With Mitigation Data Insufficient
- e. Will the proposal restrict historic or pre-historic religious or sacred uses within the potential impact area?
 Yes No
 No, With Mitigation Data Insufficient

Explanation:

- b. A total of five cultural resources are located in the Project area. All are located on maps at the North Central Information Center of the California Historical Resources Information System and the Forest Service's Lake Tahoe Basin Management Unit. None of these resources were identified during the current cultural resources inventory and would not be affected by the Project.

21. Findings of Significance

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish 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 or Nevada history or prehistory?
 Yes No
 No, With Mitigation Data Insufficient
- b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one, which occurs, in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)
 Yes No
 No, With Mitigation Data Insufficient
- c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?)

- Yes No
 No, With Mitigation Data Insufficient

d. Does the project have environmental impacts which will cause substantial adverse effects on human being, either directly or indirectly?

- Yes No
 No, With Mitigation Data Insufficient

Declaration

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Signature **(Original signature required.)**

_____ At _____ Date _____
Person Preparing Application County

Applicant Written Comments: (Attach additional sheets if necessary)

FOR OFFICE USE ONLY

Date Received _____

By: _____

Determination:

On the basis of this evaluation

The proposed project could not have a significant effect on the environment and a finding of no significant effect shall be prepared in accordance with TRPA's Rules of Procedure.

Yes

No

The proposed project could have a significant effect on the environment, but due to the listed mitigation measures which have been added to the project, could have no significant effect on the environment and a mitigated finding of no significant effect shall be prepared in accordance with TRPA's Rules and Procedures.

Yes

No

The proposed project may have a significant effect on the environment and an environmental impact statement shall be prepared in accordance with this chapter and TRPA's Rules of Procedure

Yes

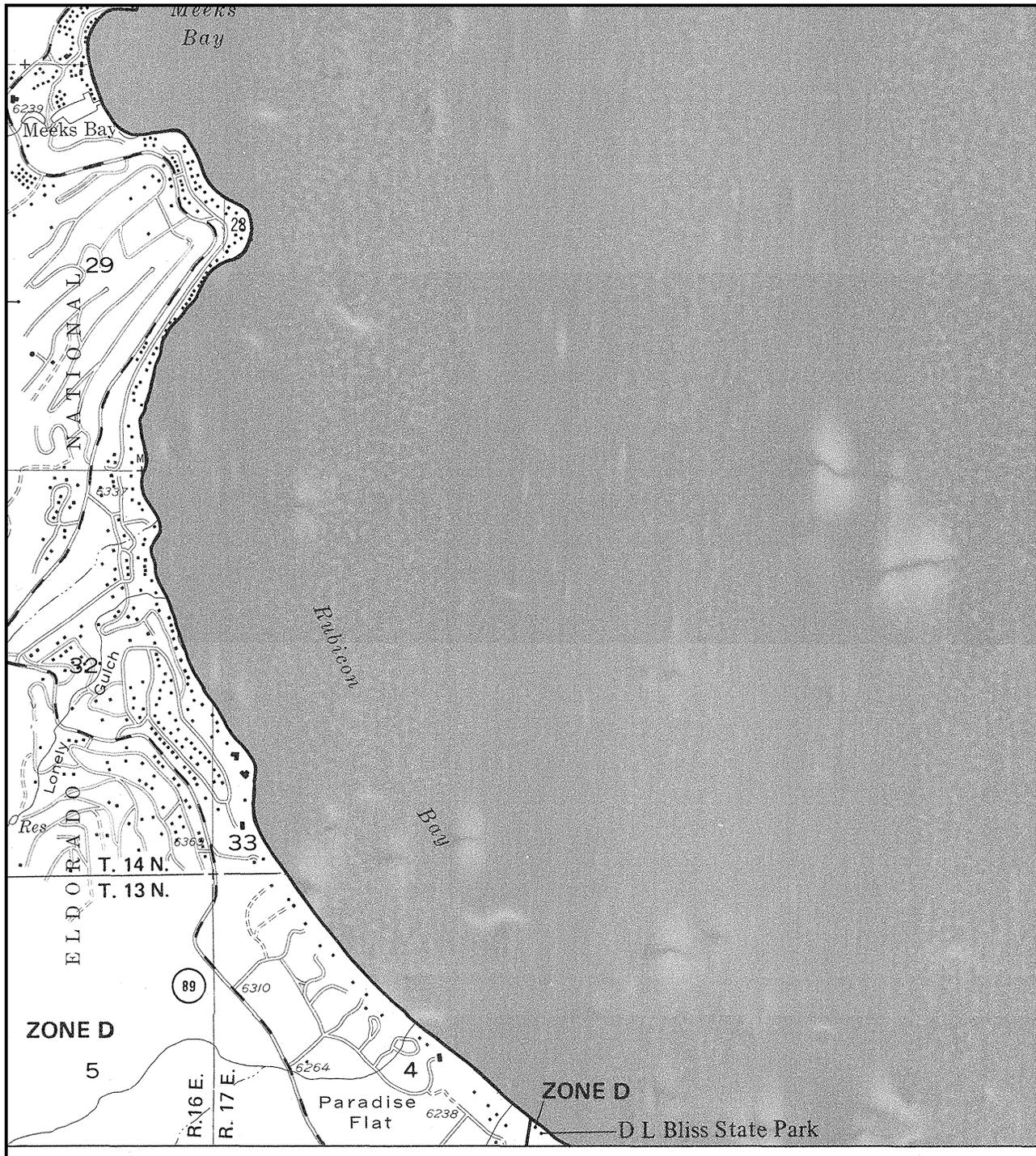
No

Signature of Evaluator

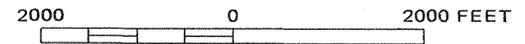
Date: _____

Title of Evaluator

Appendix D Flood Insurance Rate Map



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

EL DORADO COUNTY,
CALIFORNIA
(UNINCORPORATED AREAS)

PANEL 150 OF 1100
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
060040 0150 B

EFFECTIVE DATE:
OCTOBER 18, 1983



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix E Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR

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*Flex your power!
Be energy efficient!*

January 14, 2005

**TITLE VI
POLICY STATEMENT**

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

A handwritten signature in black ink that reads "Will Kempton".

WILL KEMPTON

Director