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

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project and potential impacts from each of the alternatives.

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.

- Growth—This is not a capacity-increasing or growth-producing project. Its purpose is to allow continuous travel on an existing route through an area that is rural in nature and primarily recreational. Opportunities for growth are limited, and would remain limited after construction of this project. The dominance of timberland zoning in this area precludes the use of this land for commercial or residential purposes.
- Paleontology—There are no known geologic formations within the project limits that would indicate the presence of paleontological resources.
- Cumulative Impacts—There are no past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project, that would result in cumulative impacts as defined under NEPA, 40 Code of Federal Regulations, Section 1508.7 of the Council on Environmental Quality regulations; and under CEQA in Section 15355 of the California Environmental Quality Act Guidelines. The types of land use activities (e.g., residential, commercial, industrial, and highway development, as well as agricultural development and the conversion to more intensive types of agricultural cultivation) that can result in cumulative impacts are largely absent in the project area. This project would be constructed after completion of adjoining shoulder widening projects to the north and south of

this one, thus meeting the District 2 Transportation Concept Report (2002)—a long range planning document that addresses project needs over the next 20 years.

2.1 Human Environment

2.1.1 Land Use and Planning

Affected Environment

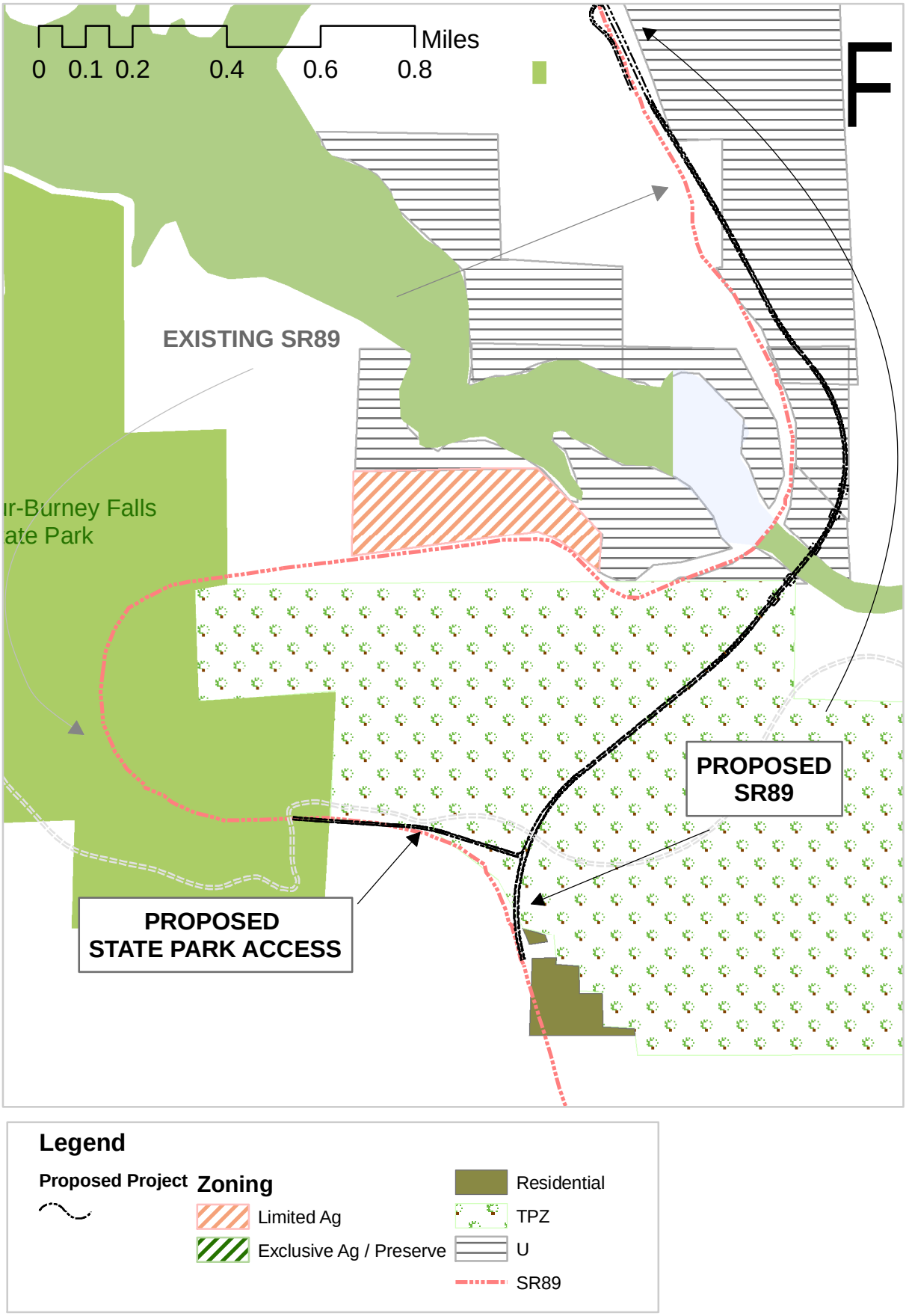
The project is located in unincorporated Shasta County, partially within the boundaries of the Shasta National Forest, which in this area is administered through the Lassen National Forest. It is also adjacent to McArthur-Burney Falls Memorial State Park at SR89 and the Pacific Crest National Scenic Trail. The current alignment of SR89 crosses onto State Park property. The centerpiece of the park is 129-foot Burney Falls. Lake Britton is a man-made lake created by Pacific Gas and Electric (PG&E) in order to generate hydroelectric power. PG&E owns much of the land surrounding the lake. The Forest Service manages publicly owned federal lands in the project area. There are two residences along SR89 on the southern end of the project, and a small neighborhood along Clark Creek Road. At the northern end of the project, three residences are located along a secondary road off SR89. The abandoned tracks of the McCloud Railway pass through the project area, crossing over SR89 near Lake Britton.

Zoning on the north side of the lake along the SR89 corridor is largely "Unclassified," as shown in Figure 2-1. Much of the land has historically been used for timber production. The Shasta County General Plan categorizes much of this area as timberland districts (TL), where development is limited. A single-family home or mobile home is allowed, as are uses related to forest management or agriculture. South of the bridge, much of the land to the east of existing SR89 is owned by Fruit Growers Supply Company, a private landowner. Additional details are available in Caltrans *Community Impact Assessment* (July 2005).

Impacts

The project is consistent with the Shasta County General Plan, the County's Regional Transportation Plan, and the Lassen National Forest Land and Resource Management Plan. The State Park would see a number of benefits as a result of the project, and has prepared a Core Area Development Plan that capitalizes on these benefits. The project

Figure 2-1 Project Area Zoning Map



would not affect the small neighborhood along Clark Creek Road. The project would require a new entrance to the State Park and realignment of the Pacific Crest Trail, which has the approval of the Lassen National Forest (see Appendix J). Construction of the proposed bridge and realignment of SR89 will require the acquisition of new highway right-of-way through a Federal Land Transfer, as appropriate, between Caltrans and the Forest Service. Caltrans will apply to the FS for a Federal Land Transfer, in accordance with the 1998 National Memorandum of Understanding between the FHWA and FS.

2.1.2 Timberlands

Regulatory Setting

Impacts to timberland are analyzed pursuant to the California Timberland Productivity Act of 1982 (Government Code Sections 51100 et seq.), which was enacted to preserve forest resources. Similar to the Williamson Act, this program gives landowners tax incentives to keep their land in timber production. Contracts involving Timber Production Zones are on 10-year cycles. Although state highways are exempt from provisions of the Act, the California Secretary of Resources and the local governing body are notified in writing in the event that new or additional right-of-way from a Timber Production Zone would be required for a transportation project.

Affected Environment

About half of Shasta County's acreage, 1.2 million acres, is made up of commercial forest. Of this, 600,000 acres are included in Timberland Production Zones (TPZs). In the project area, the acreage owned by Fruit Growers Supply Company is included in TPZs. This land is located immediately south of the Lake Britton bridge. Fruit Growers Supply Company was the third largest private holder of TPZ lands in Shasta County in the late 1990s, with over 80,000 acres.

Impacts

The project would mean the acquisition of 35 acres of privately owned timberland currently in Timberland Production Zones (TPZ). This is a relatively small amount of timberland within the context of Shasta County's total TPZ land, 600,000 acres, and Shasta County's total supply of timberland, over 1.2 million acres.

2.1.3 Community Impacts

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. The Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

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

Affected Environment

The study area encompasses 555 square miles and about 3,300 residents (2000 Census). The nearest community is Burney, an unincorporated city of 3,100 located on SR299 approximately ten miles southwest of the project location. Within the area immediately adjacent to the project, there is a small community of about 80 full-time residents along Clark Creek Road, which runs west of SR89. Together with Forest Route 37N05, Clark Creek Road provides a 7.5 mile alternative route to SR89 in the area, crossing Lake Britton by way of the dam at its extreme western end. Business activity in the area is limited to two recreational vehicle parks and various other small businesses. The city of Burney is the nearest center of commercial activity.

Impacts

There would be no permanent impacts to residents. The project would not alter community cohesion, circulation patterns, or access to services (other than to recreational facilities during construction). Project construction would mostly take place off the highway. Impacts to residents would be minimal during construction. While the temporary closure of Jamo Point on Lake Britton may mean some

reduction in the number of visitors to the area, the addition of construction crews and construction capital to the area would offset this loss. Project construction would affect access to five of the recreational resources in the area:

1. Jamo Point, a boat launch owned and operated by PG&E, would be periodically closed during construction. It would be used for construction staging.

2. Construction on the northern end of the replacement bridge would mean delays for campers driving to and from Dusty Campground, which is located on National Forest System lands and managed cooperatively by the Forest Service and PG&E.

3. The Pacific Crest Trail crosses SR89 in this area. Construction may mean minor delays for hikers on this trail during some portions of project construction.

4. Visitors to Pines Picnic Area and residents accessing the two homes off this road may encounter delays while driving to and from their destination because of heavy construction vehicle volumes.

5. Boating on Lake Britton may be restricted in the area under the new and existing SR89 bridges during construction in order to protect boaters from potential hazards of overhead construction.

Access to Jamo Point, Pines Picnic Area, and Dusty Campground would be permanently changed; access to all three would be by way of a single driveway connecting the new SR89 to existing SR89.

McArthur-Burney Falls State Park would benefit from the relocation of SR89. Visitors to Burney Falls would no longer hear traffic noise from the highway. The Park plans to take advantage of the highway's relocation to relocate its office and visitor contact center, and to create separate entrances for day users and campers.

Avoidance, Minimization, and/or Mitigation Measures

The measures below are recommended to minimize construction impacts to local recreational facilities.

1. Limit Jamo Point closure, lake access restrictions, and work adjacent to the Dusty Campground road to weekdays. Visitor use levels are highest on weekends, particularly holiday weekends. Implementing this measure would ensure that most visitors to the area are not affected by construction.

   Jamo Point's parking lot is about a half an acre in size, and accommodates 38 vehicles (including vehicles towing boat trailers). During an average weekend, the lot is half empty. On busy weekends, the lot begins to approach capacity. On an average summer weekend, half of the parking lot (0.25 acres) could be used for equipment and material storage without diminishing the supply of parking spaces relative to the demand for them. If the equipment and materials could be moved to another location on holiday weekends, the majority of Jamo Point users would not be affected by project construction. If this equipment cannot be relocated, allowing use of half of the parking lot would still provide a benefit to many users of this facility.

2. Advertise the use restrictions of Jamo Point and of water crossings under the SR89 bridge through the California Department of Boating and Waterways, press releases, media outlets, and by mailing information to fishing groups in northern California, southern Oregon, and western Nevada.

3. Discuss with PG&E and the U.S. Forest Service amenities that could be added to Jamo Point after the completion of construction to minimize any major project impacts.

Environmental Justice

This project has been developed in accordance with the Civil Rights Act of 1964, as amended, and Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." No minority or low-income populations have been identified that would be adversely impacted by the proposed project as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898. All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director of Caltrans, which can be found in Appendix C of this document.

2.1.4 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings [42 United States Code 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of the National Environmental Policy Act [23 United States Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

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

Affected Environment

The study area is on SR89, adjacent to Lake Britton. The highway is surrounded by rolling hills, with predominantly coniferous forests. The understory is fairly open, comprised primarily of squaw's carpet and manzanita. The ecosystem supports a mixture of conifers and hardwoods. Lake Britton is a popular recreational destination for boating, camping, fishing, hiking and wildlife viewing, with local recreation sites often full on summer weekends. The winter conditions support snowmobiling. This section of highway is part of the Volcanic Legacy Scenic Byway, and an All American Road, and is eligible for the California Scenic Highway System.

The National Scenic Byways (NSB) Program was established under the Intermodal Surface Transportation Efficiency Act of 1991, and reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Certain roads are recognized under this program as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. An All-American Road has two of the qualities listed above and is the highest designation a route can possess. See Appendix F for additional information about All American Roads.

In 2002, three stretches of north state highways already considered scenic byways by the state—including SR89—were added onto a federal scenic byway in Oregon to create the 500-mile Volcanic Legacy Scenic Byway. The bypass loops around Crater Lake, passes by three sides of Mt. Shasta, crosses Lake Britton, goes through Lassen Volcanic National Park, and encircles Lake Almanor. Having All American Road status helps in obtaining grants. In 2006, FHWA announced federal grants for the Volcanic Legacy Scenic Byway, to be spent on roadside kiosks, marketing and planning for the byway's stretch from the California-Oregon border to Lake Almanor.

Impacts

The project will have short term and long term visual impacts, including new roadway alignments for approaches to the new bridge and the new bridge itself. Utility lines on the existing bridge will need to be relocated, and aerial lines may be an option. A photo of the existing Lake Britton Bridge, as viewed from the approximate centerline of the proposed bridge, looking northwest, can be seen on the cover of this document. Figures 2 and 3 are computer-simulated photos of the Alternative 1 bridge as it might appear above the existing bridge.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation will be incorporated into the project to minimize impacts. It is important that the character of the existing mix of mature vegetation and meadow be restored as quickly as possible after the completion of construction. Appropriate temporary erosion and sediment control measures will be implemented to minimize adverse impacts to Lake Britton and adjacent properties at the completion of each construction season with a final permanent treatment upon completion of the project. Because of its nationally recognized uniqueness and eligibility for the California Scenic Highway System, all changes to the roadway must be compatible with the existing status as a Scenic Byway and All American Road.

Table 2.1 is a summary of Landscape Architecture's context-sensitive recommendations, as detailed in Caltrans *Visual Impact Assessment* (March 2006). These measures have the support of Caltrans Design team. Implementation of these measures will minimize visual and aesthetic impacts.

Figure 2 Computer-simulated photo of proposed bridge above existing bridge, from the vicinity of Jamo Point, looking southeast.

Figure 3 Computer-simulated photo of proposed bridge above existing bridge, with distant view of Jamo Point, looking southeast.

Table 2.1 Visual Quality Recommendations

Construction Feature or Activity	Recommendation
Rock Slope Protection (RSP)	Use native rock or rock stain as appropriate, if viewed by boaters or motorists
Vegetation removal	Replant slopes as appropriate
Soil stockpiles	Locate away from viewers as feasible
Access and abandoned roadbeds	Remove, obliterate and replant as appropriate
Pacific Crest Trail	Realign existing trail crossing and replant
Rock outcroppings	Protect in-place with Environmentally Sensitive Area (ESA) fence during construction
Cuts and slope length	Steepen slopes where feasible and round hinge points to blend into existing topography as appropriate
Bridge rail	Consider the aesthetics of the bridge rail and approaches to the bridge in selecting a bridge rail
Retaining walls	Provide a surface treatment if visible from any viewshed
Disturbed soils	Provide temporary and permanent erosion control measures
Relocate utility lines	Minimize visual impacts

2.1.5 Cultural Resources

Regulatory Setting

"Cultural resources" as used in this document refers to historic and archaeological resources. The primary federal laws dealing with historic and archaeological resources include:

The National Historic Preservation Act, 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. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2004, a Section 106 Programmatic Agreement among the Advisory Council, the Federal Highway Administration, the State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement takes the place of the

Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans.

The Archaeological Resources Protection Act applies when a project may involve archaeological resources located on federal or tribal land. This act requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B for specific information regarding Section 4(f).

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

Affected Environment

An Area of Potential Effects (APE) map was established to outline the project's potential to affect historic properties. The APE delineates the limits of any construction impacts and includes both the existing and proposed right of way and all staging and disposal areas. The APE was delineated in consultation with Caltrans Design staff.

To identify any cultural resources within the project limits, Caltrans sent written communication about the project to the Shasta County historical society. Extensive Native American consultation was conducted, including a request to the Native American Heritage Commission (NAHC) for information about any sacred Native American sites in the project area, as well as a request for Native American contacts. Caltrans sent letters or made phone calls to eight individual tribal members. Field reviews were conducted with Illmawi Band members. A record search was conducted at the Northeast Information Center (NEIC) on August 21,1999 and updated on March 14, 2005. Caltrans conducted historic property identification efforts in Fall 1999 through Spring 2005 and prepared a Historic Property Survey Report (HPSR), using information from their consultation efforts with local historical

societies, the Native American community, the NEIC, and previous archaeological investigations.

Impacts

The entire Area of Potential Effect (APE) for this undertaking was surveyed for cultural properties. Consistent with the Section 106 Programmatic Agreement, Stipulation VIII.C.1 and Attachment 4, the types of properties identified within the APE are included in the list of property types that are exempt from evaluation. As such, none of the identified properties required formal evaluation and are categorically ineligible for inclusion in the National Register of Historic Places.

Avoidance, Minimization, and/or Mitigation Measures

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area shall be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, who would then notify the Most Likely Descendent. At this time, the person who discovered the remains would contact the District Environmental Branch so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable.

2.2 Physical Environment

2.2.1 Hazardous Waste Materials

Regulatory Setting

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act 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.

Affected Environment

An Initial Site Assessment (November 2000) identified lead based paint on the existing bridge, exposed soil beneath the bridge contaminated by lead sand blast waste, and the possibility of lead in the existing double yellow stripe on SR89 throughout the project area. The report stated that railroad work might involve excavation and disposal of materials treated with creosote or wood preservatives, or other hazardous waste materials. The project area is not listed on the April 1998 List of Hazardous Waste Sites.

Impacts

A final hazardous waste investigation report (March 2006) revealed no asbestos on the Lake Britton Bridge, but did reveal the presence of lead paint. Because no asbestos was detected in the survey, the Cal/OSHA asbestos standard does not apply for planned demolition activities at the bridge. In addition, demolition debris from the bridge would not be considered as a California hazardous waste based on asbestos content. However, written notification to U.S. EPA Region IX and the California Air Resources Board is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not). Notification instructions are available at the following internet link: http://www.arb.ca.gov/enf/asbestosform.htm.

Avoidance, Minimization, and/or Mitigation Measures

All painted surfaces will be treated as lead-containing, subject to future soluble lead testing and disposal at an appropriate facility—a Class I or II landfill. Construction activities that disturb material containing lead are subject to the Cal/OSHA lead standard contained in Title 8, CCR Section 1532.1. Written notification to the nearest Cal/OSHA office is required at least 24 hours prior to certain lead-related work. A project-specific Lead Compliance Plan (CCR Title 8, Section 1532.1) will be prepared to prevent or minimize worker exposure to lead-impacted paint and soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

2.2.2 Air Quality

Regulatory Setting

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

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

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as Shasta County Regional Transportation Planning Agency and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of the project-level analysis.

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

Affected Environment

The project is located in an attainment/unclassified area for all current federal air quality standards. Therefore, conformity requirements do not apply.

This project is exempt from regional (40 Code Federal Regulations 93.127-128) conformity requirements. Separate listing of the project in the Regional Transportation Plan and Transportation Improvement Program, and their regional conformity analyses, is not necessary. The project would not interfere with timely implementation of Transportation Control Measures identified in the applicable State Implementation Plan and regional conformity analysis.

The proposed project is located in Shasta County, which is part of the Shasta County Air Quality Management District (SCAQMD). Shasta County is in attainment or unclassified for all Federal ambient air quality standards. The project is in a state PM_{10} non-attainment area.

Impacts

Construction of the project will result in the generation of suspended particulate matter. The amount of dust generated will be temporary, local, and limited to the areas of construction.

Avoidance, Minimization, and/or Mitigation Measures

To minimize the amount of construction dust generated, dust control practices shall be incorporated into the project in compliance with Caltrans' Standard Specifications and any SCAQMD rules. If asbestos is found, the SCAQMD – Rule 3.22 will be adhered to when handling this material.

Caltrans Standard Specifications pertaining to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1/OF "Air Pollution Control" and Section 10 "Dust Control" require the contractor to comply with the Central Valley Air Pollution Control District's rules, ordinances, and regulations.

2.2.3 Noise and Vibration

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating the effects of highway traffic noise. The intent of these laws is to promote the general welfare and to foster a healthy environment.

For highway transportation projects with Federal Highway Administration involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the criterion for residences (67 decibels) is lower than the criterion for commercial areas (72 decibels). Table 2.2 below lists the noise abatement criteria. Table 2.3 shows the noise levels of typical activities.

Table 2.2 Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, A-weighted Noise Level, Average Decibels Over One Hour	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 1998
A-weighted decibels are adjusted to approximate the way humans perceive sound

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, October 1998*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the criteria.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5-decibel reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and

Table 2.3 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 300m (1000 ft)		
	100	
Gas Lawn Mower at 1 m (3 ft)		
	90	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)		Food Blender at 1 m (3 ft)
	80	Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies' input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

The noise element of the Shasta County General Plan contains criteria for the planning and assessment of noise for long-term operations. No noise ordinances currently exist governing construction noise.

Affected Environment

The project area includes scattered residences, McArthur-Burney Falls Memorial State Park, a campground, boat launch, and timberland. The residential area is located near the south end of the project, where the primary noise source is SR89. Farther north, at the State Park, the primary noise sources are the Falls, local traffic in the park, and SR89. At the Dusty Campground approximately 2,300 feet from the existing bridge and around a bend in the lake, SR89 is not easily heard. The primary noise sources here are boating activities and wildlife (and the railroad if it were still operational). Jamo Point Boat Launch is approximately 980 feet, and the Pines Picnic Area approximately 2,065 feet, from the existing bridge. At both locations, the primary noise sources are boating activities, and trucks descending and ascending the existing bridge grade.

Impacts

Caltrans *Noise and Air Report* (April 2005) revealed that traffic noise levels are expected to remain the same with or without the project. Noise produced by construction equipment will occur with varying intensities and duration during the different phases of construction: mobilization, clearing and grubbing, earth work, foundations, base preparation, paving, demolition and clean-up. During Construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. No single location will experience a long-term period of construction noise. Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01I "Sound Control Requirements". Noise levels generated during construction shall comply with applicable local, state and federal regulations, and all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Avoidance, Minimization, and/or Noise Abatement

Construction would be temporary, intermittent, ceasing with completion of the construction activity, and conducted in accordance with Caltrans Standard Specifications Section 7-1.01I. No abatement or mitigation is required based on FHWA, NEPA and CEQA guidelines. Measures to minimize the effects of construction noise will be implemented, such as

- Limiting nighttime, holiday and weekend work
- Shielding and locating stationary construction equipment as far away from receptors as feasible, and turning off idling equipment

- Using equipment with sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an un-muffled exhaust
- Placing any maintenance yard, batch plant, haul roads, and other construction operations in locations that minimize noise disturbances
- Informing area residents about the construction work, time involved, and use of control measures to lessen construction impacts

2.3 Biological Environment

Although the scope of the project is large, overall impacts to biological resources are minimal. The new alignment proceeds through relatively common upland habitats. Compensatory mitigation for the loss of these upland habitats will occur through decommissioning of the existing highway and forest stand improvements for the bald eagle and the Northern spotted owl. Potential impacts to rough sculpin will be avoided. This section addresses Wetlands and other Waters, Threatened and Endangered Species, Invasive Species, and temporary construction impacts.

2.3.1 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 United States Code 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. For an area to be designated as a jurisdictional wetland under the Clean Water Act, hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation) must be present, under normal circumstances.

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

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this

executive order states that a federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the Regional Water Quality Control Boards. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. The California Department of Fish and Game's jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Boards also issue water quality certifications in compliance with Section 401 of the Clean Water Act.

Affected Environment

According to the Natural Environment Study (March 2006), the two main hydrologic features in the project area are Burney Creek (perennial) to the southwest and Lake Britton Reservoir. Burney Creek flows into Lake Britton. A third jurisdictional feature is a seasonal wet meadow/vernal pool within McArthur-Burney Falls Memorial State Park. The existing highway bisects the meadow.

Impacts

A comprehensive delineation of jurisdictional waters of the U.S. was conducted in 2005. A total of 0.33 acre of ephemeral stream channel will be impacted by project activities. There will be no impact to Burney Creek and no "fill" placed into the creek or within the ordinary high water. The only project activities that will occur in proximity to the creek will be the removal of the existing SR89. This highway removal will benefit Burney Creek by creating a greater riparian and upland buffer

along the creek. This will provide a net benefit to riparian function and will improve water quality.

The only other stream channel in the project area is an unnamed ephemeral channel network on the north side of the lake, just north of the intersection of SR89 and Dusty Campground Road. These channels carry water briefly only during the spring and are dry for most of the year. Riparian function is minimal as most of the vegetation along these channels consists of the predominant upland Oregon oak community. This ephemeral drainage will be buried beneath the fill slope of the new north alignment.

The third jurisdictional feature within the project area is a seasonal wet meadow/ vernal pool within McArthur-Burney Falls State Park. No work will occur on the highway within the wet meadow area. The existing road will be turned over to the state park for management and jurisdiction.

Avoidance, Minimization, and/or Mitigation Measures

Because of the presence of rough sculpin and other special-status aquatic species, water quality protection is an important environmental component. Caltrans will be submitting permit applications to the ACOE (404), DFG (1600), and the RWQCB (401) for all activities that have the potential to impact streams, wetlands, and other jurisdictional features in the project area. All permit requirements and mitigation will be implemented. The project will be constructed in compliance with the following regulations:

- Clean Water Act 404 Permit (ACOE)
- DFG 1600 Permit
- RWQCB 401 Permit
- Porter-Cologne Water Quality Act
- Caltrans Statewide National Pollution Discharge Elimination System (NPDES) Storm Water Permit
- Caltrans Statewide Storm Water Management Plan (SWMP)
- California State Endangered Species Act

2.3.2 Threatened and Endangered Species

Regulatory Setting

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

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

Affected Environment

Biological studies for the project began in 1999 and continued until the spring of 2006. Caltrans biologists, university biologists, and private consultants conducted

biological studies. Caltrans staff conducted all Federal Endangered Species Act (Section 7) consultations.

A review of potential *special-status* species and habitats in, or nearby, the project area was conducted utilizing the California Natural Diversity Database (CNDDB), the U.S. Fish and Wildlife Service Species List (see Appendix F), the CNPS Inventory, the McArthur-Burney Falls Memorial State Park resource inventory, and the Lassen National Forest sensitive species list. These source lists can be found in the appendices of the Natural Environment Study (March 2006), and are summarized in Appendix F of this document.

Of all the potential *special-status* species identified in the above lists, four species—bald eagle, Northern spotted owl, rough sculpin, and osprey—potentially would be affected by project activities. Details about each species can be found below.

Lake Britton is well known for its year-round population of bald eagles. There are eight known eagle nest territories, though not all are used each year. There is only one nest site (South Shore nest site) that is within one mile of the bridge. In addition to the nesting eagles, approximately 5 to 10 migratory eagles utilize the lake during the winter.

The Lake Britton area is considered the extreme southeast range of the Northern spotted owl (*Strix occidentalis caurina*). There is no roosting or nesting habitat within or near the project. Approximately 14 acres of potential Northern spotted owl foraging habitat could be lost with the construction of the new alignment.

The rough sculpin is a Federal Species of Concern and a State Threatened, "Fully Protected" species of fish. California State University, Sacramento staff visually observed "sculpin" in the area of the bridge and presumed these were rough sculpin. The McArthur-Burney Falls Memorial State Park General Plan (1997) states that rough sculpin occurs "upstream of Lake Britton."

Osprey is a State Species of Special Concern. There are two osprey nest sites in close proximity to the project south of the lake.

Impacts

The main biological resources with the potential to incur project impacts are the bald eagle, rough sculpin, and osprey. These resources will be protected primarily through

avoidance measures. Potential indirect Bald eagle and Northern spotted owl impacts will be mitigated by improving nearby habitat.

Caltrans conducted Federal Endangered Species Act (Section 7) informal consultation with the Sacramento Fish and Wildlife Service regarding potential impacts to eagles. The project *may effect* but is *not likely to adversely affect* bald eagles. On December 2, 2005 Caltrans received a concurrence letter from the USFWS regarding the bald eagle. In addition, the bald eagle is protected under the California State Endangered Species Act, or CESA (Threatened), and is a "Fully Protected Species" under state law. By implementing measures agreed to with DFG, the project is not likely to result in *take* (per CESA).

A biological assessment (BA) for the Northern spotted owl was written (April 2005) and Federal Endangered Species Act (Section 7) consultation was conducted with the Sacramento USFWS office. Caltrans received a concurrence letter from the USFWS dated December 2, 2005. There is no roosting or nesting habitat within or near the project. Approximately 14 acres of potential NSO foraging habitat could be lost with the construction of the new alignment.

Rough sculpin fish potentially could be impacted by the installation of the work trestle piers, pile driving, and general water quality issues. Assuming rough sculpin presence, Caltrans has conducted in-depth consultation with DFG to avoid impacts to rough sculpin. The use of avoidance measures to protect rough sculpin will protect fish in general. Information about other aquatic species can be found in the Natural Environment Study (2006).

Both osprey nest sites are outside of the environmental study limits of the new alignment and neither nest tree will be cut down.

Avoidance, Minimization, and/or Mitigation Measures

The two trees with existing osprey nests will be protected with Environmentally Sensitive Area (ESA) designations and on-the-ground fencing. In addition, all tree removal inside the project area will occur after September 1 and before December 31. This will help avoid disturbance to any nearby nesting osprey.

To prevent any new disturbance to ospreys after they begin nesting, construction activities within the south bank study limits will begin during December and proceed continuously through the osprey nest season. This initial construction presence prior

to the nesting season will allow local osprey to determine whether to nest near the project area or to select other sites away from the construction zone. This will allow osprey to choose sites with construction in progress, rather than have construction commence after they have begun nesting.

To help compensate for the loss of potential nest sites from the new alignment, most of the existing SR89 to the north and west will be decommissioned and revegetated with native plants, including trees. Though the replacement trees will not contribute immediately to nesting habitat, it is anticipated that the highway removal along with the cessation of vehicular traffic will open up a larger forest area adjacent to the lake. The decommissioning will reduce edge effect and habitat fragmentation. Also, because the existing highway is on a steep grade, truck noise from braking, downshifting, and acceleration (uphill) will be greatly reduced. The noise effect to all wildlife, including osprey, is potentially significant and noise reduction will be one of the benefits of this project.

Assuming rough sculpin presence, Caltrans has conducted in-depth consultation with DFG to avoid impacts to rough sculpin, and to protect fish in general.

The following actions will be implemented:

- All aquatic pile driving (percussive) in water, and all pile driving at Piers 2 and 3 out of the water but in proximity to the lake, which could create sound waves harmful to aquatic life, will be incrementally "ramped-up" to full force to allow fish to flee.
- All aquatic pile driving (percussive) in water, and all pile driving at Piers 2 and 3 out of the water but in proximity to the lake, which could create sound waves harmful to aquatic life, will have an aquatic sound attenuation system (also known as a "bubble-curtain") in place and activated. For pile driving in water, the "bubble-curtain" will completely encircle or encompass the pile-driving operations in both the horizontal and vertical dimensions. For Piers 2 and 3, the "bubble-curtain" will be in place and activated in the water below each pier in a semi-circular fashion from shoreline to shoreline.
- Any drafting of water from the lake will comply with National Oceanic and Atmospheric Administration (NOAA) drafting standards and protocols.
- Because of the aquatic *special-status* species and to protect the beneficial uses of the lake, no construction water will be returned directly into the lake. All water returned to the lake shall comply with effluent requirements established by the Central Valley Regional Water Quality Control Board through issuance of a Waste Discharge Permit, and the conditions of the 1600 permit issued by the State Department of Fish and Game.

- A qualified fisheries biologist will monitor for fish mortality during pile-driving operations. All in-water (and Pier 2 and 3) pile driving will cease if any rough sculpin are killed, injured, or observed floating on the surface. If observations confirm that each type of pile ("H", sheet, round) driven with each size of "hammer," conducted in conjunction with the bubble curtain, does not cause fish kill, then further monitoring may be discontinued. The Caltrans D2 biologist responsible for the project must approve any discontinuation in coordination with the Construction Resident Engineer, after review of the monitoring results.

With the implementation of protection measures for the rough sculpin, it is anticipated that there will be negligible impacts and mortality to non-special status fish in Lake Britton (bass, crappie, trout, sunfish, etc.). Nevertheless, it is possible that differences in physiology and habitat use (e.g., bottom dweller –v. full water column use) may cause differential response to pile-driving. Therefore, it has been determined per DFG consultation that incidental mortality of non-special status fish (e.g., bass, crappie) cannot exceed 50 individuals per day. If this threshold is exceeded, then pile-driving will cease and alternative protocols will be developed through consultation with DFG.

The following avoidance, minimization, and mitigation measures listed below have been agreed to with DFG and the USFWS:

- All tree removal will occur after September 1 and prior to December 30.
- General construction will begin after September 1 and prior to December 30 during the first construction year and continue year-around to preclude potential "post-nesting" impacts to eagles and osprey.
- All percussive pile-driving in-water will occur within a "bubble curtain" and will be "ramped-up" to full force. This will protect fisheries resources and by default eagle food sources.
- Multiple layers of water quality protection measures will be incorporated to all phases of the project to protect fisheries resources and by extension, potential eagle prey.
- To enhance the habitat for bald eagles, Caltrans will provide funding to the Lassen National Forest to implement forest stand thinning at three nearby locations. This thinning will be located in stands that could be used by eagles. The thinning will help prevent catastrophic loss by fire and to accelerate tree structure toward characteristics preferred by eagles for nesting and roosting. Approximately 10 acres at each site will be "improved" for eagles (30 acres total).

- To enhance the foraging habitat for Northern spotted owl, Caltrans will provide funding to the Lassen National Forest to conduct thinning and improve other forest stand characteristics in designated Northern spotted owl critical habitat. Between 324 to 571 acres of owl habitat will have improvements implemented.

2.3.3 Invasive Species

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." Federal Highway Administration 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 National Environmental Policy Act analysis for a proposed project.

Under the Executive Order, federal agencies cannot authorize, fund, or carry out actions that it believe are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk or harm have been analyzed and considered. This means that Federal-aid and Federal Highway Program funds cannot be used for construction, revegetation, or landscaping activities that purposely include the use of known invasive species.

Determinations of the likelihood of introducing or spreading invasive species and a description of measures being taken to minimize their potential harm should be part of any process conducted to fulfill agency responsibilities under NEPA. Considerations of invasive species should occur during all phases of the environmental process to fulfill the requirements of NEPA. Until the National Vegetation Management Plan specified in the E.O. is completed, NEPA analyses should rely on each State's noxious weed list to define the invasive plants that must be addressed and the measures to be implemented to minimize their harm.

Affected Environment

The vegetation of the south bank and alignment consists of Ponderosa pine and mixed conifer series forests, depending on slope and aspect. In general, the forests here consist of mature trees and are relatively open in nature with a sparse under story of shrubs. There appears to be a relatively high density of mature snags south of the lake. Caltrans staff conducted multiple botanical surveys including one specific survey for noxious weeds on June 13, 2005. Particular emphasis was placed on weeds shown on the LNF Noxious Weed and on the State of California Department of Food and Agriculture lists.

Caltrans surveys detected four "C" rated weeds. There were no "A" or "B" rated weeds found during these surveys within the project area. The four noxious weeds found are Klamath weed (*Hypericum perforatum*), yellow star-thistle (*Centaurea solstitialis*), medusahead (*Taeniatherum caput-medusae*), and Scotch broom (*Cytisus scoparius*). Of these four weed species, Klamathweed and yellow star-thistle are widespread throughout northern California and have become "naturalized," with no eradication within the foreseeable future. Medusahead and Scotch broom, while also relatively common, are not as generally widespread and appear more localized.

Subsequent communication with the Shasta County Department of Food and Agriculture (SCDFA) revealed detection of one tiny isolated population of Squarrose knapweed (*Centaurea squarrosa* [A-rated]) along the Dusty Campground Road and a population of Purple starthistle (*C. calcitrapa* [B-rated]) along SR89 at post mile 28.2. It appears that the SCDFA staff may have already eradicated the knapweed. Locations for both weeds are regularly monitored and treated by the SCDFA.

Almost all weed locations were associated with some type of existing disturbance factor, including the existing highway shoulder or because of the close proximity to local forest or campground dirt roads. This distribution pattern is expected, as the daily movement of hay trucks, horse/livestock trailers, and other vehicles provides the primary source of weed seed. Also, the very nature of roadside maintenance (Caltrans and USFS) creates a perfect environment of bare disturbed soil that is easily and rapidly colonized by weeds.

Impacts

One standard method of weed control is "avoidance" of known sites. Because all the existing weed locations for this project are found along the existing, or on the new alignment, there is no way to avoid these locations. Treatment (pre-construction,

during, and post-construction) of these known locations will be implemented (see mitigation measures below).

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented as part of the total noxious weed control and containment program:

1) *Noxious weed surveys will be conducted beginning the year prior to construction and continuing every year during construction, plus one year past construction.*
2) *These surveys will cover the entire project impact area, which is larger than the actual project footprint (roughly corresponds to the project Environmental Study Limits).*
3) *All weed surveys will be conducted during the late spring and early summer, by qualified botanists.*
4) *Prior to the first-year construction, all weed locations within the environmental study limits will be treated.*
5) *All populations of weeds will be treated as appropriate.*
6) *Each year (including one year post-construction), treatment of any weed areas will be implemented.*
7) *All construction equipment will be cleaned of mud, dirt, and plant parts to be free of weed seeds prior to being brought onsite.*
8) *Minimize the area used for construction and for staging. This will help keep bare sites as small as possible and lessen weed infestation opportunities.*
9) *Mulch (weed-free sources) temporary bare areas if not to be used for several months (e.g., bare "over-wintering" sites).*
10) *All erosion control and landscaping/revegetation materials (including mulches) will be certified to be "weed free."*
11) *All gravel and "fill" material shall come from weed-free sources. Because this project will be exporting large amounts of cut material this is not expected to be an issue.*
12) *After construction, establish vigorous (and if possible native) desirable plants and mulches to prevent sites available to weed species and to compete with any weeds.*