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ENVIRONMENTAL ASSESSMENT

CAMP RICHARDSON CAMPGROUND AND VEHICLE CIRCULATION BMP RETROFIT

Lake Tahoe Basin Management Unit, Region 5—USDA Forest Service

Legal Description: Southeast Quarter, Section 12 and Northeast Quarter, Section 13, Township 12 North, Range 18 East, Mount Diablo Baseline and Meridian (South Lake Tahoe Quadrangle Map).



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Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
ABA	Architectural Barriers Act
BA/BE	Biological Assessment/Biological Evaluation
BMPs	best management practices
BMPEP	Best Management Practice Evaluation Program
Caltrans	California Department of Transportation
CAR	critical aquatic refuge
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CO	carbon monoxide
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationship System
dbh	diameter at breast height
DOE	Determination of Eligibility
EA	environmental assessment
EIP	Environmental Improvement Program
ERA	equivalent roaded acres
ESA	Endangered Species Act of 1973 as amended
FONSI	Finding of No Significant Impact
Forest Plan	Lake Tahoe Basin Management Unit Land and Resource Management Plan
Forest Service	USDA Forest Service
FSORAG	Forest Service Outdoor Recreation Accessibility Guideline
GHGs	greenhouse gasses
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LOP	limited operating period
LRMP	Land Resource Management Plan
LTBMU	Lake Tahoe Basin Management Unit
MIS	Management Indicator Species

Acronym/ Abbreviation	Definition
MIS Report	Management Indicator Species for the Lake Tahoe Basin Management Unit
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NO _x	nitrous oxides
NRHP	National Register of Historic Places
PAOT	Persons At One Time
PM10	particulate matter less than 10 microns in diameter
RCA	riparian conservation area
RCOs	riparian conservation objectives
ROS	Recreation Opportunity Spectrum
SEZ	stream environment zone
SHPO	State Historic Preservation Officer
SNF MIS	2007 Sierra Nevada Forests Management Indicator Species
SO ₂	sulfur dioxide
South Shore Project	South Shore Fuel Reduction and Healthy Forest Restoration Project
TRPA	Tahoe Regional Planning Agency
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled

Summary

The Lake Tahoe Basin Management Unit (LTBMU) proposes to:

1. Reduce the environmental impacts and improve the recreational opportunities and associated infrastructure in the Camp Richardson campground and the resort area by retrofitting the three existing campground areas with water quality protection Best Management Practices (BMPs) and facilities that are responsive to current and projected recreational demands and are compliant with legal requirements for accessibility and by improving vehicular and pedestrian traffic patterns. The proposed BMP retrofit activities fall into four categories:
 - a. Install water quality protection BMPs.
 - b. Retrofit the campground facilities (circulation routes, improved utilities, upgraded camping facilities, improved emergency access).
 - c. Reduce congestion along Highway 89 and within Camp Richardson Resort (improved intersections, improved parking).
 - d. Upgrade resort parking (reconfigured and improved day use parking).
2. Amend the Land Resource Management Plan (LRMP) to modify the Persons At One Time (PAOT) day use levels for the Camp Richardson Resort campground area.

The project area is approximately 79 acres in size and is located approximately 2 miles northwest of South Lake Tahoe, California, on Highway 89. The project area is within the LTBMU, Region 5 of the U.S. Department of Agriculture (USDA) Forest Service (see Figure 1-1 in Chapter 1 for a location map).

These actions are needed because 1) the existing environmental conditions and trends in the area are resulting in environmental effects and the recreational opportunities are not responsive to current and likely future demands; 2) the current Forest Plan PAOT figures do not accurately reflect the existing use levels, maintenance needs, and long-term management.

The proposed Forest Plan amendment is expected to improve consistency between the development and management of the Camp Richardson project area and current management direction. The infrastructure actions are expected to lead to improved recreational opportunities and experiences for the public, improve safety conditions for pedestrians and vehicles by reducing congestion, and reduce existing environmental effects by reducing sedimentation associated with impervious surfaces and user impacts.

In addition to the Proposed Action (Alternative 2), the Forest Service also evaluated the following alternatives:

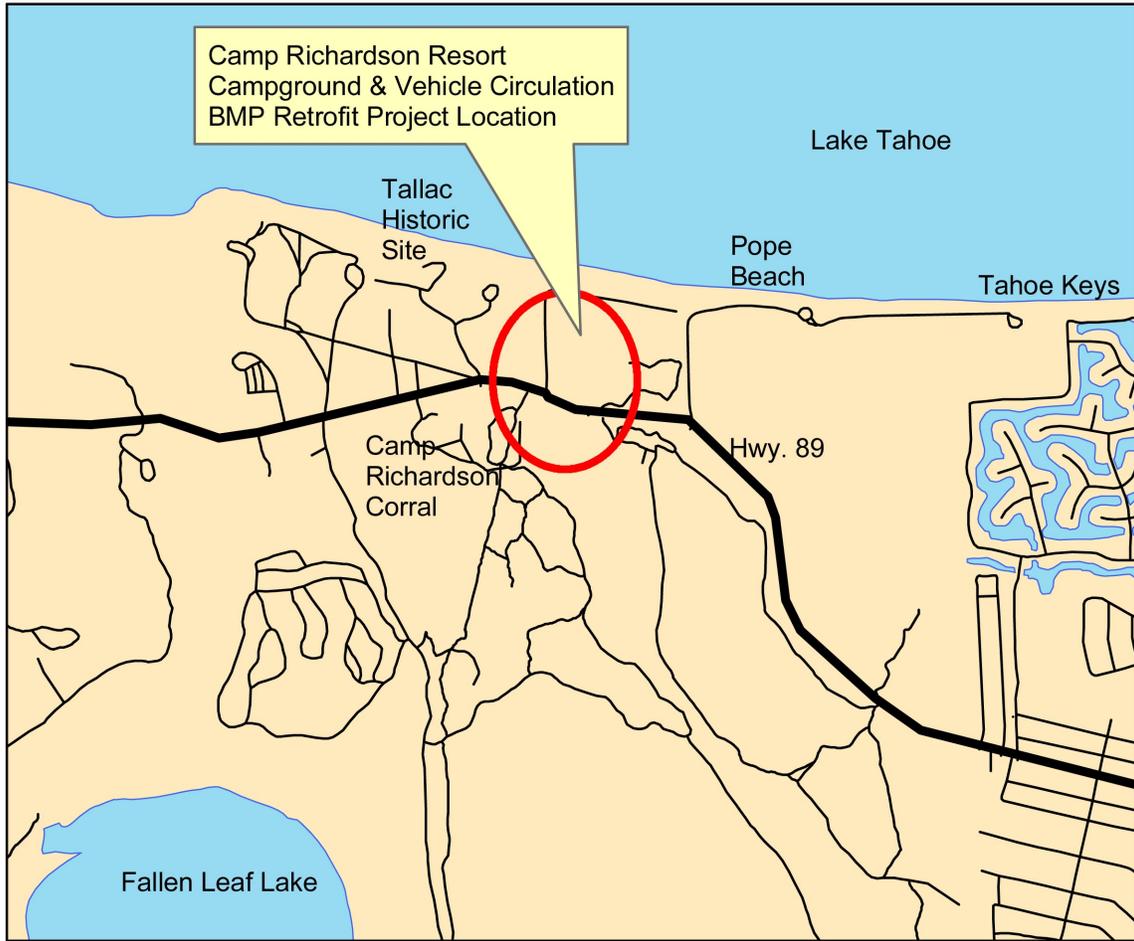
- **Alternative 1—No Action.** Under this alternative, no improvements would be made and the existing campground and day use levels would remain unchanged.
- **Alternative 3—** This alternative is designed to respond to public concerns about the removal of trees larger than 30 inches in diameter, and the continued safety concerns related to congested traffic and pedestrian traffic, particularly along Jameson Beach Road. Under this alternative, day use parking and pedestrian walkways would be improved as compared to the Proposed Action, and approximately 9 trees over 30 inches in diameter at breast height would be removed as

compared to 40 trees in the Proposed Action. The project design features and BMPs that are prescribed for the Proposed Action would apply to this alternative as well. The proposal to amend the Forest Plan is also included.

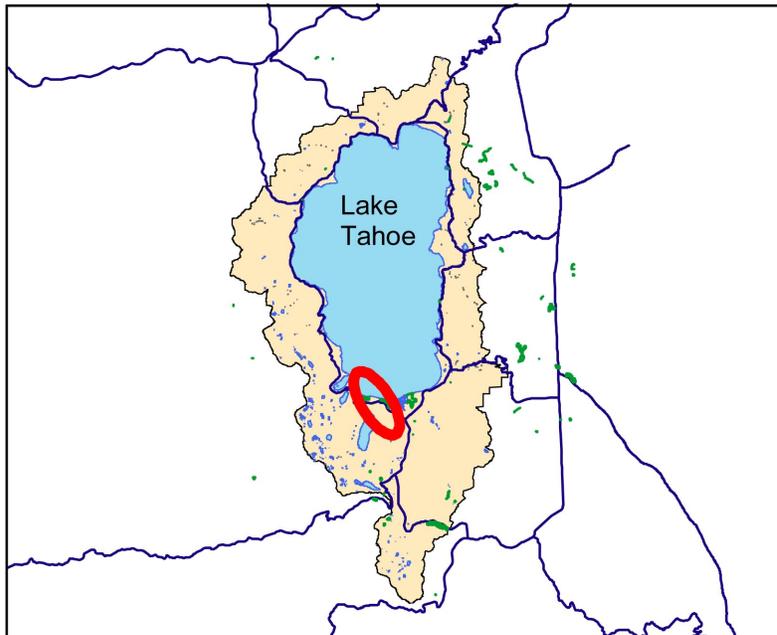
- **Alternative 4** – This alternative is designed to respond to a recommended alternative submitted in the scoping period. This alternative reduced the removal of large trees (approximately 4 trees over 30 inches in diameter at breast height). This alternative also includes a reduced number of campsites proposed for year-round operation and reduces the development footprint in the area between the RV camp and the Eagle's Nest camp. The project design features and best management practices that are prescribed for the Proposed Action would apply to this alternative as well. The proposal to amend the Forest Plan is also included.

Based upon the effects of the alternatives, the responsible official will decide:

- Whether or not to amend the LTBMU LRMP to increase the day use PAOT levels for the project area.
- Whether or not to implement the project activities as described in the Proposed Action or select an alternative to the Proposed Action.
- Whether or not a Finding of No Significant Impact (FONSI) can be supported by the environmental analysis contained in this Environmental Assessment (EA).



Project Area



Vicinity Map



1.1 Document Structure

The U.S. Department of Agriculture (USDA) Forest Service (Forest Service) has prepared this environmental assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EA discloses the direct, indirect, and cumulative environmental effects that would result from the Proposed Action and Alternative Actions as well as the No Action Alternative. The document is organized as follows:

- **Chapter 1, “Introduction,”** includes information on the structure of the EA, background of the project, overview of the existing condition, the desired conditions, the purpose of and need for action, summary of the Proposed Action, applicable management direction, and the decision framework. This chapter also details how the Forest Service informed the public of the proposal through public involvement, describes the issues identified by the public, and summarizes laws, regulations, and policies that are applicable to the project.
- **Chapter 2, “Alternatives, Including the Proposed Action,”** provides descriptions of alternatives considered but dismissed from detailed analysis, the No Action Alternative, the Forest Service’s Proposed Action, and two action alternatives to the Proposed Action. It also summarizes the effects of the No Action Alternative and the action alternatives.
- **Chapter 3, “Affected Environment and Environmental Consequences,”** presents an overview of the analysis, the existing conditions, and the environmental effects of implementing the alternatives. The effects of the No Action Alternative are described first to provide a baseline for evaluation and comparison of the action alternatives.
- **Chapter 4, “Consultation and Coordination,”** provides a list of preparers and agencies consulted during the development of this document.
- The **appendices** provide best management practices and detailed site maps of the existing project site and alternatives.

Additional documentation may be found in the project record located at the Forest Supervisor’s office in South Lake Tahoe, CA.

1.2 Background

Camp Richardson Resort is a publicly owned recreation facility that is managed by the Forest Service, Lake Tahoe Basin Management Unit (LTBMU) and operated under a special use permit. The resort dates back to the 1930s but was purchased by the Forest Service in 1965.

All facilities proposed for rehabilitation are Forest Service properties located on National Forest System (NFS) lands. Rehabilitation of this facility is an identified need on the Tahoe Regional Planning Agency (TRPA) Environmental Improvement Program (EIP) list.

The project is located on approximately 79 acres of NFS lands within the Camp Richardson Resort special use permit area. Camp Richardson Resort is located on Highway 89, approximately 2 miles west of the City of South Lake Tahoe. The resort is bounded by Pope Beach Road to the east, the Tallac Historic site to the west, Lake Tahoe to the north, and general forest area to the south. Refer to Figure 1-1 for the project area location. The Camp Richardson Corral is located outside of the resort special use permit and Proposed Action project area.

A Vision Plan for Camp Richardson Resort (Project Record Documents E-13, E-14, and E-15) was recently completed and is available on the LTBMU's website under "Land and Resources Management", "Projects", "Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit" heading. The Vision Plan provides a framework for improvements to environmental resources and facilities at the resort and is consistent with the LTBMU Land and Resource Management Plan (Forest Plan) as well as TRPA environmental thresholds and Plan Area Statement direction. It identifies issues facing the resort and strategies for resolving them. The Vision Plan itself is not a proposal, but provides the foundation for proposals such as the one described in this EA.

1.3 Overview of the Existing Condition

The Forest Plan identifies a day use "Persons At One Time" (PAOT) level for recreational facilities. For Camp Richardson Resort, the current PAOT is 350. This number is not intended to reflect actual use. PAOT is an estimate of capacity to allow for comparison of developed infrastructure from one Forest to another. The current PAOT of 350 does not accurately reflect current use and therefore does not adequately support the comparison of recreational sites within the LTBMU for both short-term and long-term management and planning. The PAOT figure does not include use associated with the Beacon restaurant, village activities such as the general store or ice cream parlor, or visitor use originating from outside of the developed resort.

The three Camp Richardson Resort campground areas and the highway corridor that connects them comprise one of the most popular use areas within the Lake Tahoe Basin, located in the concentrated south shore recreation complex. These campground areas do not comply with Forest Service standards, which include the need to have water quality protection best management practices (BMPs) in place. Some camp sites and user-created trails are also located within the identified stream environment zone (SEZ) associated with Pope Marsh.

Vehicle circulation and campsite locations are poorly defined, consisting mainly of unpaved surfaces with extensive soil compaction. The existing conditions have the potential to create water-borne and air-borne sediment, which can negatively affect the water clarity and quality of Lake Tahoe. In addition, the campground facility does not provide universal access to amenities and does not meet Forest Service standards for providing opportunities to persons with disabilities. Furthermore, the campground's poorly defined vehicle circulation routes pose a challenge to medical and fire response vehicles in the event of an emergency and could potentially pose a safety risk to recreationists.

Despite the facility's poor condition, the resort campground remains very popular with recreation visitors and is often occupied to full capacity during summer months. The 325 site campground offers a range of amenities including various degrees of campsite utility services from which campers can choose. Campers are not restricted by the type of vehicle they arrive in, and sites are

open to all campers. Resort day use and overnight hotel use are also very popular. Existing parking amenities that support these uses do not meet LTBMU standards for resource protection and are in need of improvement. Traffic congestion along Highway 89 and within the resort is also of concern, especially during peak use periods. Measures to address these and other concerns are addressed in this project. Figure B-1 of Appendix B shows existing conditions and compacted and impervious coverage.

The project area is immediately adjacent to Pope Marsh, which is a riparian and meadow environment also adjacent to Lake Tahoe. Currently, there are numerous campground sites that have been developed within the SEZ associated with Pope Marsh, and there are also user-created trails through the area which are affecting the sensitive soils and vegetation within this SEZ.

1.4 Desired Conditions

The desired conditions for the project area are as follows:

1. The developed recreation amenities would comply with established water quality protection BMPs while providing high-quality, year-round, family-oriented recreation opportunities.
2. All developed amenities would meet current construction standards and provide universal access for persons with disabilities, consistent with Forest Service Outdoor Recreation Accessibility Guidelines and the Architectural Barriers Act/Americans with Disabilities Act.
3. There would be a reduction in traffic congestion within the portion of Highway 89 passing through the resort core.
4. There would be adequate and safe emergency vehicle access to the developed recreation amenities.
5. There would be access for the public via the existing public transit system.
6. The Forest Plan day use PAOT for Camp Richardson would accurately reflect current use levels associated with the facilities to support forest-wide recreational planning.

1.5 Purpose and Need for Action

The purposes of this project are as follows:

1. Reduce the potential for adverse environmental impacts to soil and water.
2. Better serve the public's recreational demands and reduce safety hazards.
3. Provide facilities that meet the requirements for accessibility to all users.
4. More accurately reflect the current use levels.

The following specific needs are identified:

1. Comply with the LTBMU Forest Plan, which includes guidance requiring that Forest Service facilities in the Lake Tahoe Basin be upgraded with BMPs in order to minimize the amount of sediment and other pollution associated with storm water runoff.

2. Provide public recreation facilities that meet universal access requirements as well as health and safety and local building codes.
3. Provide high-quality camping opportunities within the Camp Richardson Resort permit area. Improved quality would be indicated by updated facilities and roadways with minimal deferred maintenance, animal-proof food storage lockers and trash containers, and accessible campsite amenities.
4. Respond to visitor use trends for multiple-use and utility hook-up camping, single family camping, and small group camping.
5. Provide year-round camping opportunities.
6. Reduce vehicle, bicycle, and pedestrian traffic congestion on Highway 89 associated with the Resort by reducing the need for campground traffic to enter the resort village core. There is also a need to reduce vehicle, bicycle, and pedestrian traffic congestion along Jameson Beach Road during peak use periods.
7. Provide for controlled traffic circulation within the campground that allows emergency and other large vehicles to access the developed facilities and keeps vehicles on improved road surfaces. There is also a need to provide for a limited number of campsites with additional vehicle parking use.
8. Provide for South Tahoe Public Utility District compliant sanitary sewer disposal for RVs and trailers that do not camp at sites with provided utility service, or that camp at nearby campgrounds that lack RV sanitary sewer services.
9. Reduce soil compaction in SEZ and non-SEZ soil areas, and restore previously compacted areas where feasible.
10. Provide controlled pedestrian access from the northern campground to Lake Tahoe, via Jameson Beach Road and/or Pope Beach Road, in order to re-route use from user-created trails within the SEZ.
11. Reduce vehicle/pedestrian conflicts and congestion, and increase pedestrian safety within the resort's village core.
12. Provide regulated and BMP compliant parking for short-term resort guests, hotel guests, resort day users, overnight camping, and employees.
13. Maintain the resort's development footprint within its permit boundary.

1.6 Proposed Action

See Section 2.2 for a complete description of the Proposed Action.

1.7 Decision Framework

The LTBMU Forest Supervisor would decide:

1. Whether or not to amend the LTBMU LRMP to increase the day use PAOT levels for the project area.

2. Whether or not to implement the project activities as described in the Proposed Action or select an alternative to the Proposed Action.
3. Whether or not a Finding of No Significant Impact (FONSI) can be supported by the environmental analysis contained in this Environmental Assessment (EA).

This decision would only affect NFS lands. Coordination and permitting through the California Department of Transportation (Caltrans) would be required to implement changes within the Highway 89 right-of-way. Implementation of parking BMPs and other work could begin as early as May 2012. Campground area retrofit activities could begin in 2012 and would be phased over several years so that only portions of the three campground areas would be under construction at any time. Depending on construction funding, implementation is anticipated to be completed by 2017.

1.8 Public Involvement and Results of Scoping

During preliminary review of the project with Forest Service personnel and with other interested agencies, several concerns were identified and were addressed in the final Proposed Action that was part of the formal scoping process. These preliminary concerns included:

- **The presence of noxious weeds within the project area.** Design features will be implemented to prevent the spread of these plants during project construction.
- **Known locations of heritage resource sites should be protected.** These sites will be avoided during project implementation.
- **TRPA has expressed concern regarding the proposed reduction in campsite capacity and its potentially negative effect on their Recreation Environmental Threshold.** The preliminary proposal reduces peak-season capacity, and increases capacity during nonpeak-season periods. Additionally, implementation of the Proposed Action would result in higher quality recreation opportunities compared to existing conditions. Therefore, while there would be a decrease in the number of sites, campsites would be of higher quality with better amenities than previously provided and would be consistent with TRPA's recreation threshold.
- **The need for water quality protection BMPs to address fine particles that could affect Lake Tahoe's water clarity, especially as these BMPs relate to proposed opportunities for year-round camping.** The final Proposed Action provides extensive BMPs that apply to the design, implementation, and operational phases of the project in order to ensure that benefits to water quality continue to accrue over time.

The project was listed on the LTBMU's quarterly "Schedule of Proposed Actions" on April 1, 2005. A scoping letter was mailed to interested parties on March 13, 2009. A press release was submitted to the Tahoe Tribune, Tahoe Mountain News, and Sacramento Bee regarding the scoping of this project and identifying how the public could learn more about the proposal. The press release was published in the Sacramento Bee on April 5, 2009. A total of 19 written or electronic comment letters were submitted (Project Record Documents D-1 through D-19) and a total of 125 comments were identified and evaluated for significance. These comments and their disposition are summarized in Project Record Document C-3.

1.9 Issues

The Forest Service separated the issues into three groups: 1) non-significant issues, 2) significant issues considered but eliminated from detailed study, and 3) significant issues leading to an alternative to the Proposed Action. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review..." (Sec. 1506.3). Project Record Document C3 documents the comments and their categories and includes a list of non-significant issues and reasons regarding their categorization as non-significant.

- **Non-significant issues** (Category 1) do not meet the purpose and need for the project; are outside the scope of the Proposed Action; are already decided by law, regulation, or Forest Plan; are not supported by scientific evidence; are addressed by project design features; or are addressed by additional information or clarification of the Proposed Action. Non-significant issues also represent opinions and statements that do not present problems or alternatives. None of these comments necessitated development of an alternative to the Proposed Action.
- **Significant issues considered but eliminated from detailed study** (Category 2) meet the purpose and need for the project but were considered in alternatives already studied and eliminated, or additional project design features were developed that reduced or eliminated the effects. The public comments revealed concerns in the following areas: wildlife, public safety, parking and traffic, recreational user conflicts, hydrology, year-round use, and riparian habitat. These areas of concern did not lead to the development of an alternative considered in detail (see below) because they were addressed in the development of the Proposed Action.
- **Significant issues** (Category 3) meet the purpose and need for the project and are significant in the extent of the geographic distribution, the duration of effects, or the intensity of interest or resource conflict and therefore merit consideration for the development of an alternative to the Proposed Action. The following significant issues were identified by the Forest Supervisor:
 1. Removal of large diameter trees (trees with a diameter at breast height [dbh] of 30 inches or more).
 2. Safety related to congestion along Jameson Beach Road.

1.10 Applicable Laws, Regulations, and Policies

All resource management activities described and proposed in this document would be consistent with applicable federal law and regulations, Forest Service policies, and applicable provisions of state law. The major applicable laws are as follows.

1.10.1 National Forest Management Act

The National Forest Management Act (NFMA) requires the development of long-range land and resource management plans. The LTBMU Forest Plan was approved in 1988 as required by this act. It has been amended several times, including in the Sierra Nevada Forest Plan Amendment (SNFPA) (USDA Forest Service 2004). The Forest Plan provides guidance for all natural resource management activities. The NFMA requires that all projects and activities be consistent with the Forest Plan. The Forest Plan has been reviewed in consideration of this project, and the design of the

project is consistent with the Forest Plan. A Forest Plan consistency matrix and review for this project was completed (Project Record Document B-1).

1.10.2 Endangered Species Act

In accordance with Section 7(c) of the Endangered Species Act, the U.S. Fish and Wildlife Service (USFWS) list of endangered and threatened species that may be affected by projects in the Lake Tahoe Basin Management Area (updated on April 29, 2010) was reviewed (USFWS 2010).

1.10.3 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effect of a project on any district, site, building, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places. Section 106 of the NHPA (Public Law 89.665, as amended) also requires federal agencies to afford the State Historic Preservation Officer a reasonable opportunity to comment. The State Historic Preservation Officer has concurred with the determination that there would be no adverse effect on the Camp Richardson Historic District from the project (Project Record Document E-12). No other cultural sites or archaeological sites would be affected.

1.10.4 Clean Water Act (Public Law 92–500)

All federal agencies must comply with the provisions of the Clean Water Act (CWA), which regulates forest management activities near federal waters and riparian areas. The design features associated with the Proposed Action ensure that the terms of the CWA are met, primarily prevention of pollution caused by erosion and sedimentation.

1.10.5 Clean Air Act (Public Law 84-159)

The project area lies within the Lake Tahoe Air Basin and the El Dorado Air Quality Management District. The Traffic Study (Project Record Document E-11) identifies a net reduction in vehicle trips of approximately 11% from the improvements associated with the project. Chapter 93.3.B of the TRPA Code of Ordinances (TRPA 1987) requires that a project provide an air quality impact analysis only if the project is expected to significantly increase vehicle trips. This project is predicted to reduce vehicle trips and is compliant with the TRPA ordinances.

1.10.6 California Environmental Quality Act [CEQA] (Public Resources Code, § 21080)

The California Environmental Quality Act (CEQA) applies to discretionary projects to be carried out or approved by public agencies in California. The LRWQCB's process to grant a conditional waiver of waste discharge requirements on NFS lands is a discretionary act subject to CEQA. Prior to approving a project, the LRWQCB must certify that: 1) the environmental document has been completed in compliance with CEQA; 2) that the Lahontan Water Board has reviewed and considered the information contained in the environmental document; and 3) that the environmental document reflects the Lahontan Water Board's independent judgment and analysis (Cal. Code Regs., tit. 14, § 15090.) For water quality improvement projects (i.e., projects with the primary purpose of reducing, controlling, or mitigating existing sources of erosion or water

pollution), project-specific CEQA documents are not required. The project qualifies as a water quality improvement project due to implementation of BMPs to reduce sedimentation and runoff, improve SEZ conditions, and improve road and campground infrastructure to ensure that water quality standards are met.

1.10.7 Environmental Justice (Executive Order 12898)

Executive Order 12898 requires that all federal actions consider potentially disproportionate effects on minority and low-income communities, especially if adverse effects on environmental or human health conditions are identified. Adverse environmental or human health conditions created by any of the alternatives considered would not affect any minority or low-income neighborhood disproportionately.

The activities proposed in alternatives 2, 3, and 4 were based solely on the existing and desired condition of the campground facilities and surrounding vegetation, sensitivity of the natural environment adjacent to Lake Tahoe, the recreational needs of Forest users, and access in response to the purpose and need. In no case were the campground and infrastructure/access designs based on the demographic makeup, occupancy, property value, income level, or any other criteria reflecting the status of adjacent non-federal land. Reviewing the location, scope, and nature of the proposed alternatives in relationship to non-federal land, there is no evidence to suggest that any minority or low-income neighborhood would be affected disproportionately. Conversely, there is no evidence that any individual, group, or portion of the community would benefit unequally from any of the actions in the proposed alternatives.

1.10.8 Invasive Species, Executive Order 13112 of February 3, 1999

This EA covers botanical resources and noxious weeds. A Noxious Weed Report has been prepared (Project Record Document E-4). The project's design features are designed to minimize risk of new weed introductions.

1.10.9 Migratory Bird Treaty Act of 1918 as amended (16 USC 703-712)

The original 1918 statute implemented the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds. Later amendments implemented treaties between the United States and Mexico, Japan, and the Soviet Union (now Russia). Specific provisions in the statute include the establishment of a federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention . . . for the protection of migratory birds . . . or any part, nest, or egg of any such bird." Because forest lands provide a substantial portion of breeding habitat, land management activities within the LTBMU can have an impact on local populations.

A Migratory Bird Report (Project Record Document E-7) has been prepared for this project which fulfills the requirements of this act and Executive Order 13186. Trees are being removed for the

proposed project. However, the project would not adversely impact any populations or habitat of migratory birds.

1.10.10 Recreational Fisheries, Executive Order 12962 of June 6, 1995

The effects on fish habitat from the project are expected to be extremely limited. Direct effects on fish productivity and the quality of the recreational fishery would be negligible.

1.10.11 Architectural Barriers Act

The Architectural Barriers Act (ABA) requires that facilities designed, built, altered, or leased with funds supplied by the United States federal government be accessible to the public. The ABA provides uniform standards for the design, construction, and alteration of buildings so that persons with disabilities will have ready access to and use of them. These standards will be incorporated into the design of this facility in order to meet the ABA.

1.10.12 Special Area Designations

There are no specially designated areas that would be affected by the project (i.e., Research Natural Areas, Inventoried Roadless Areas, Wilderness Areas, and Wild and Scenic Rivers).

1.10.13 Tahoe Regional Planning Agency

This project will be reviewed by TRPA consistent with the terms of the 1989 MOU between TRPA and the Forest Service. Depending on the extent of implementation phases, project permits may be required.

1.10.14 Local Agency Permitting Requirements and Coordination

Any ground-disturbing project activities that occur between October 15 and May 1 will require a grading exemption from TRPA and Lahontan Water Board. In addition, any required permits will be obtained from TRPA and / or the Lahontan Water Board prior to project implementation. Appropriate permits will be obtained with Caltrans prior to implementation affecting the right-of-way along Highway 89.

Chapter 2

Alternatives, Including the Proposed Action

This chapter describes the No Action Alternative, the Proposed Action, and two Action Alternatives. It also includes a description of alternatives not considered in detail. It includes detailed descriptions of the specific activities, an overview of project design features, and a summary comparison of the alternatives. Chapter 2 is intended to present the alternatives in comparative form, defining the issues and providing a clear basis for choice among options by the responsible official

2.1 Alternatives Considered in Detail

The range of alternatives the Forest Service considered for this analysis was bound by the purpose and need underlying the Proposed Action, as well as by the issues that arose from internal discourse and external scoping (detailed in Chapter 1). NEPA requires that an environmental analysis examine a range of alternatives that are “reasonably related to the purpose of the project.” Furthermore, Forest Service Handbook 1909.15 directs the ID Team to “consider a full range of reasonable alternatives to the Proposed Action that address the significant issues and meet the Purpose and Need for the Proposed Action.”

2.1.1 Alternative 1 – No Action

The No Action Alternative provides a baseline for comparing the effects of the action alternatives. The No Action Alternative reflects a continuation of existing recreational and traffic activities. No improvements to recreational or traffic facilities would be made, beyond those considered to be routine maintenance.

2.1.2 Alternative 2 – Proposed Action

The Proposed Action includes two components: a proposed amendment to the LTBMU Forest Plan and improvements to the infrastructure associated with the Camp Richardson Resort campgrounds and day use areas (Campground and Vehicle Circulation BMP Retrofit).

2.1.2.1 Forest Plan Amendment

The Forest Plan identifies a day use PAOT level for Camp Richardson Resort of 350. This number does not reflect actual current use. This number does not include use associated with The Beacon Bar & Grill restaurant, resort village activities such as the general store or ice cream parlor, or visitor use originating from outside of the developed resort (i.e., hikers, bicyclists, or mass transit users). The Proposed Action would amend the Forest Plan to increase the identified day use PAOT number to accurately reflect current use levels associated with the resort for comparative purposes in the future. This plan amendment is not intended to increase use levels, but rather to be more reflective of existing conditions and use levels.

The day use PAOT number is proposed to be amended from 350 to 825. This number is based on the number of day use parking spaces currently at the resort (see Table 2-1) (258 x 3.2 persons per vehicle = 825 PAOT), some of which are currently proposed for reconfiguration to achieve water quality protection and traffic congestion reduction objectives. The number of day use parking spaces is not proposed to change with this project. This number does not include parking associated with the private marina.

Table 2-1. Existing Day Use Parking Capacity

Parking Spaces	Location
16	General Store
90	Highway Shoulder
75	Jameson Beach Road
77	The Beacon Bar & Grill Beacon Restaurant
258	Total Parking Spaces

2.1.2.2 Campground and Vehicle Circulation BMP Retrofit

Please see Figure 2-1 for locations of specific areas of the Camp Richardson Resort area. The reader is also encouraged to reference Figures B-2 and B-3 of Appendix B in conjunction with the following project description. This section describes the Proposed Action in detail. In addition, where specific details are common to the Action Alternative, those are described here as well.

Each of the three campground areas at Camp Richardson Resort is planned for rehabilitation, which would include installation of water quality BMPs, control of vehicle circulation by redefining and paving travel routes and camping spurs, and removal of inadequate restroom buildings and construction of new toilet/shower buildings. In addition, new underground water, sewer, and electricity utility systems are proposed. Areas of existing soil compaction that are not planned for campground use would be decompacted (to the extent feasible) and mulched, and may be planted with native/adapted vegetation such as grasses and shrubs. Overall project area impervious coverage would be reduced from 1,146,737 to 912,885 square feet. SEZ coverage from current recreation use is proposed to be reduced from 11,959 to 5,971 square feet. BMP measures would be designed to meet the demands of a 1 inch / 1-hour storm, as well as a 2 inches / 24-hours storm event.

Camping capacity and the overall number of campsites are also proposed for reduction. The Proposed Action includes a capacity reduction from 1,950 to 1,788 people, and campsite numbers are proposed to reduce from 325 to between 230 and 255, depending on final design limitations. The campground retrofit would consist of a maximum of 170 full utility hookup sites, 50 single family sites, 27 extended family/small group sites, and six sites with a 24-person capacity per site. Year-round operation of utility hookup sites is proposed. Snow removal would occur on paved surfaces only and no traction material would be applied to assist vehicle circulation.

This project includes the removal of some existing trees in order to meet the requirements of the Proposed Action. Up to 40 trees with a 30-inch dbh or greater and up to 910 trees with a dbh less than 30 inches are proposed for removal. Cut trees may be removed as sawlogs, or used as fuelwood. Any slash material generated from tree removal (e.g., smaller trees and limbs and tops) would be removed in whole, chipped, and removed, or chipped for use on site. Tree removal may require the use of ground-based mechanical equipment, chainsaws, or chippers, and a staging



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Figure 2-1
Major Features
Camp Richardson Resort Area

area(s) in order to process materials. The stumps of cut trees would also be removed as part of this action. The exact number of trees to be removed would not be known until final engineering design is complete, which would occur following NEPA analysis and prior to construction; however, the final amount is expected to be less than the estimates listed above. Removal of the abandoned/dilapidated campground host cabin is proposed.

Existing highway intersections (driveways) are proposed to be reconfigured, resulting in a net decrease in the number of intersections. A new campground entry is proposed south of Highway 89, as well as an interior road system that would provide vehicle access to the campground areas. Campsite overflow parking spaces are proposed along this interior road as well as in a dedicated parking area near proposed sewer dump facilities. Paved parking areas for resort village guests are proposed west of the existing bike/ski rental facility and east of the existing ice cream shop. Transit stops are proposed for north- and south-bound highway travel.

New sections of paved bike path are proposed. One new section would carry nonmotorized users from the existing Class I bike path north of the resort village. A second section would carry nonmotorized users northward toward the beach and would terminate at a proposed new day use restroom building located beyond the shorezone of Lake Tahoe. This new restroom would tie into existing water and sewer utilities nearby. Safety lighting and associated utility trenching is proposed along this route as well as along Jameson Beach Road. User-created trails within Pope Marsh would be decommissioned/restored or upgraded to facilitate existing nonmotorized/pedestrian use from the Badger's Den campground area to Jameson Beach Road and Pope Beach Road.

Improvements to existing parking facilities are proposed. Approximately 75 existing unpaved parking spaces east of Jameson Beach Road would be paved and would include a paved walkway on high capability soils outside of the delineated Pope Marsh SEZ soils. Approximately 26 Additional paved parking spaces would be established along the western edge of Jameson Beach Road. Parking facilities surrounding the hotel are proposed for improvement with BMPs. In coordination with Caltrans, elimination of Highway 89 shoulder parking within the resort corridor is proposed. This might include placement of bollards or other barriers that comply with safety regulations. These areas would be treated to restore soil infiltration capacities and would be mulched and/or planted with native/adapted species.

This project would manage stormwater runoff to infiltrate it on site, as close to its point of origin as possible. Stormwater would be directed to shoulders, microbasins, and swales where appropriate for infiltration. Decompaction of existing compacted soils not planned for campground use would allow for dispersed infiltration and the reduction in sheet flow of water through the site.

The following section lists the details of the Campground and Vehicle Circulation BMP Retrofit Proposed Action, which is summarized above. Refer to both Figures B-2 and B-3 of Appendix B for specific project area boundary and the proposed actions.

A. Install Water Quality Protection Best Management Practices

Note: These are project-specific BMPs designed to be responsive to the purpose and need for action and are consistent with the standard BMPs in Appendix A that are intended to ensure compliance with the Clean Water Act.

1. Retrofit the three existing campground areas at Camp Richardson Resort within the existing special use permit area. Elements of the BMPs retrofit include:
 - A. Vehicle travel and parking surfaces would be paved to ensure sediment source control.
 - B. Sheet flow and infiltration of stormwater would occur within dispersed areas to avoid concentrated water volumes and reduce the erosive force of runoff.
 - C. To ensure infiltration of stormwater within the project area, stormwater would be conveyed to BMPs for treatment before leaving the permit area or entering the Caltrans highway right-of-way.
 - D. Temporary construction measures—including use of silt fences, fiber rolls, and / or covered stockpiles—would be employed.
 - E. Overall project area impervious coverage would be reduced approximately 20% from 1,146,737 to 912,885 square feet.
 - F. Project area SEZ impervious coverage would be reduced approximately 48% from 11,595 to 5,971 square feet.
2. Restore existing compacted soil areas within the campground that are not expected to receive concentrated use. This restoration activity would include soil decompaction; soil amendment with organic, weed-free materials; seeding with Forest Service-approved seed mixes; and mulching with pine needles and/or tub-ground mulch. Spreading of masticated slash may be considered within areas where pedestrian travel is discouraged.
3. Upgrade the existing service road between the north campground area and Jameson Beach Road, north of the Richardson House. This reconstruction would use appropriate BMPs and measures to improve hydrologic connectivity through the road base. Vehicle access to the road would continue to be limited to resort maintenance staff and emergency vehicles.
4. Construct an accessible trail with appropriate BMPs along the edge of the north campground and/or improve an existing trail from the campground to Jameson Beach Road and Pope Beach Road. This trail for nonmotorized use may include portions of boardwalk construction as appropriate to protect hydrologic connectivity and reduce soil compaction. Decompact and obscure user-created trails that create resource impacts. Construct accessible pedestrian trails from the southern campgrounds to the resort village core area.

B. Retrofit the Campground Facilities

5. Develop asphalt paved circulation roads and campsite parking spurs with appropriate water quality protection BMPs and universal accessibility features to replace existing unpaved roads and campsite spurs. Elements of the campground BMP retrofit include:
 - A. One-way roads would be approximately 12 feet wide.
 - B. Two-way roads would be approximately 22 feet wide.
 - C. Utility hookup spurs would be a minimum of 60 feet long by 16 feet wide and would meet Forest Service Outdoor Recreation Accessibility Guideline (FSORAG) direction (170 sites maximum, each with capacity for up to six people). To accommodate campers with special accessibility needs, up to eight of the proposed sites would be 60 feet long by 20 feet wide.

- D. Non-utility spurs would be a minimum of 40 feet long and 16 feet wide (50 sites maximum, each with capacity for up to six people). Three of these spurs would be 40 feet long and 20 feet wide to meet FSORAG direction.
 - E. Double occupancy group sites would be 40 feet long and 30 feet wide (27 sites maximum, each with 12-person capacity).
 - F. Quad occupancy group sites would consist of eight parking spaces, each 20 feet long and 10 feet wide (six sites maximum, each with 24-person capacity).
 - G. Seasonal closure gates would be installed within the campground to allow for phased opening/closing of campground areas.
 - H. Campsite parking spurs would be designed with 3% maximum cross-slope to provide for universal accessibility, consistent with FSORAG direction (FSORAG Section 2.2.2).
6. Replace water, sewer, and electricity utility systems within the campground to meet health and safety standards for service and capacity. New utility infrastructure would be underground and located within high-capability soil areas. Private overhead utilities along the highway corridor are not proposed for undergrounding. Water, sewer, and electricity would be provided to each utility hookup campsite (170 sites maximum), to each restroom building, and to a centralized campground check-in building. Fire hydrants would be installed at appropriate locations to protect building infrastructure and other resources.
7. Reduce the overall campground capacity from 325 campsites to between 230 and 255 campsites. There would be an increase in the overall number of utility hookup sites from 114 (35 with water/sewer/electricity, 65 with water/electricity, and 14 with electricity only) to a maximum of 170 (each with code-compliant water/sewer/electricity), and a decrease in the number of non-utility hookup campsites from 211 to a maximum of 85. This would include 27 group campsites (each with a capacity for 12 persons) and 6 group campsites (each with a capacity for 24 persons). Campers would not be restricted based on their vehicles—all sites would be open to all users. Overall campground capacity is proposed to change from 1,950 to 1,788 maximum. Final proposed campsite numbers, configuration, and capacity would be determined during engineering design, following NEPA analysis, based on specific site limitations and would be within the special use permit boundary.
8. Replace four existing restroom/shower buildings with six new universally accessible restroom and shower buildings. Restroom/shower buildings would be sized to provide approximately one toilet for every 35 persons in keeping with Forest Service Manual direction (USDA Forest Service 2006: Section 2333.51). Water supply for the campground comes from the recently upgraded Forest Service water system and tank located near Fallen Leaf Road. Sewer service would be coordinated with South Tahoe Public Utility District. Water conservation appliances would be included. Restroom buildings would be consistent with the Forest Service's Built Environment Image Guide to ensure an appearance in keeping with the forest setting. Restroom areas would include bear-proof trash dumpsters, regulatory and interpretive information, short-term parking opportunities, and accessible water spigots and walkways. The beach day use portable toilets would be replaced with a universally accessible flush-toilet restroom building located on high capability soils.
9. Allow for year-round camping opportunities at all of the utility hookup sites. The actual number of campsites operated for year-round use would be based on visitor demand and would likely be less than the total number. A snow removal, storage, and management plan (as part of the

resort's operations and maintenance plan) would be developed and implemented for this portion of the campground area. Snow removal would occur primarily with the use of snow blowing techniques. This plan would include measures to prohibit the use of traction grit, while providing for public safety. Snow melt would be infiltrated on site.

10. Provide small parking areas for limited campsite extra-vehicle parking (not for use as overnight camping sites) along the campground arterial roads and one centrally located parking area for larger vehicles/trailers. The landscape adjacent to the parking areas would be planted with vegetation to provide visual screening from the highway.
11. Remove up to approximately 950 trees from the 78.7-acre project area. (Tree removal data based on topographic and site survey from 1987. Sizes have been inflated from those indicated on survey to account for growth since the survey). Actual numbers of trees to be removed would vary as some trees identified in 1987 are no longer present. Additionally, road alignments and camp spur locations would be field adjusted to minimize disturbance to existing trees. The identified numbers of trees proposed for removal have been inflated by 10% to account for data gaps in tree survey information. All cut trees within this project area would have their stumps removed to facilitate paving BMP measures. Trees proposed for removal fall into the following size classes:
 - A. Up to 910 trees smaller than 30 inches dbh, representing an estimated 19% reduction of 4,852 trees in the project area.
 - B. Up to 40 trees 30 inches dbh or larger, representing an estimated 2–4% reduction of 1,035 trees in the project area.
12. Plant native conifer trees outside of the highway right of way to improve visual screening between the campground and Highway 89.
13. Construct emergency vehicle access routes from Pope Beach Road to the eastern edge of the north campground area, from Highway 89 to the western edge of the southwest camp area, and from Highway 89 to the southeast camp area. These routes would provide for emergency vehicle access or campground evacuation in the event that the main campground access point is blocked. Access to these routes would be controlled by locked gates. The route surfaces would not be paved. The existing fencing between Camp Richardson Resort and Pope Beach Road would be replaced.
14. Construct an RV sewer dump station that complies with South Tahoe Public Utility District requirements to isolate the facility from stormwater intake and to ensure adequate backflow prevention.
15. Install bear-proof food lockers at all campsites within the resort. Also install accessible fire rings, picnic tables, and BBQs at each campsite. Install bear-proof trash dumpsters and accessible water spigots (approximately one spigot per eight non-utility campsites) at appropriate locations within the resort campground.

C. Reduce Congestion along Highway 89 and within Camp Richardson Resort

16. Eliminate the intersections (driveways) with Highway 89 at the following locations:
 - A. At the existing RV campground area entry, south of the hotel (see Figure 2-1, Resort area).
 - B. At the existing driveway to the southeast campground area.

- C. At the existing driveway to the north campground area.
 - D. At the existing driveway to the Richardson House.
17. Construct new intersections (driveways) with Highway 89 at the following locations:
 - A. A primary campground check-in, south of Highway 89, east of the resort village core.
 - B. A primary access to the north campground and Richardson House.
 18. Construct a campground check-in facility (about 600 square feet) and associated check-in parking.
 19. Reconfigure the portion of Jameson Beach Road between the hotel and general store to reduce traffic congestion associated with day use fee collection. Improve turning radii and develop a paved traffic lane to bypass the fee collection kiosk and potential traffic backed up at this facility. Access to the bypass lane could be controlled by key-activated gates to provide access for resort maintenance staff, emergency vehicles, and private homeowners that access their property through an easement on Jameson Beach Road.
 20. Redevelop the existing parking area at the ski/bike rental facility south of Highway 89 in the resort village core to provide a transit stop for existing and potential future southbound transit service and allow for a transit stop off of the highway traffic lane. Develop a portion of the northbound highway shoulder west of the hotel to provide a transit stop for existing and potential future northbound transit service and allow for a transit stop off of the highway traffic lane to improve pedestrian safety and reduce highway traffic congestion.
 21. Construct a new paved, nonmotorized, multiuse trail that provides a bypass for existing trail through-traffic (bicycles, pedestrians, roller skaters, etc.) north of the resort's business core. This route would be constructed on high capability soils. The existing paved trail through the resort's business core would remain. A new paved nonmotorized multiuse trail would be constructed parallel to and west of Jameson Beach Road, and would include low safety lights that are consistent with the Resort's historic character and that minimize light pollution.
 22. Install parking barriers along the Highway 89 shoulder to eliminate off-pavement parking throughout the resort highway corridor, with the exception of the resort village area, which already restricts highway parking. Posting of regulatory signage prohibiting shoulder parking would also occur. This action would eliminate the capacity for approximately 90 vehicles to park within the resort portion of the highway corridor. This action requires coordination and permitting with Caltrans prior to implementation. Pedestrian controls within the resort village area would also be installed to help reduce congestion by directing visitors to identified crosswalks.

D. Upgrade Resort Parking

23. Upgrade Jameson Beach Road and existing day use parking areas with appropriate BMPs. This action includes resurfacing and regrading to manage and infiltrate stormwater runoff.
24. Construct a 50-car short-term parking area for resort village visitors. This parking lot would include basins to collect and infiltrate stormwater runoff. Free parking would be limited to a short-term duration and would be controlled by a mechanized fee gate. The parking area would include irrigated vegetative screening to reduce its visual impacts. Approximately 40 day use parking spaces would also be constructed. Some would be on the western side of Jameson Beach

Road and some would be on the south of Highway 89 behind the resort village shops. These day-use parking areas would comply with water quality protection BMP standards.

25. Upgrade the existing hotel parking with appropriate BMPs. Pave surfaces and install basins to collect and infiltrate stormwater runoff.
26. Upgrade existing employee parking and delivery access behind the resort's commercial buildings on the south side of Highway 89 with appropriate BMPs.
27. Install 11 light posts and fixtures along the west (cabin) side of Jameson Beach Road. These lights would meet the local light-emitting code and reflect the historic nature of the resort. Installation would include approximately 900 feet of utility trenching. The trench will be 24 inches wide and 36 inches deep and will be filled immediately after the electrical cable is placed in the trench. Alignment of the trench will meander where feasible to minimize disturbance to existing vegetation.

Note: The Proposed Action circulated during scoping included the proposal to install catch basins with oil-water separators in parking areas. This element of the Proposed Action has been changed to incorporate stormwater management principles articulated in the principles of Low Impact Design. The Proposed Action now includes measures to collect stormwater runoff from these areas and infiltrate it in a series of basins and/or bioswales.

2.1.2.3 Project Design Features and Best Management Practices

Activities associated with implementation of this project could have localized, short-term effects. The following design features have been incorporated into both Action Alternatives and are intended to minimize or avoid effects on soils, water, vegetation, wildlife, fisheries, heritage resources, recreational resources, and air quality. In addition to the following design features, applicable BMPs are identified in *Water Quality Management for Forest System Lands in California* (USDA Forest Service 2000a). Adherence to these BMPs ensures compliance with the Clean Water Act. These specific BMPs are listed in Appendix A. Detailed specification for these BMPs would be incorporated into the final design plans and SWPPP which will be approved by the Water Board prior to issuance of the General Permit.

Project Design Features

Air Quality

- | | |
|-------|---|
| AIR-1 | Require watering of exposed road surfaces to minimize fugitive dust during implementation. |
| AIR-2 | Water all exposed stockpiled materials (soils, mulch) during construction to avoid dry material conditions that may be prone to wind erosion during storage. Cover exposed stockpiled materials between periods of active construction to prevent wind and water erosion. |
| AIR-3 | Prohibit vegetative slash and construction burning. |

Botany

Species of Concern

BOT-1 No sensitive, threatened, or endangered plants were found during botany surveys for the proposed project. Prior to implementation, the project site will be surveyed for new populations that may have become established since the previous survey. If any sensitive, threatened, or endangered plants are found (either during surveys or during project implementation), they would be reported to the Forest Service botanist and standard management practices would be applied, including flagging, buffering, and avoiding populations to the extent practicable. New sensitive plant populations would also be documented, and there may be an amendment to the project file.

Noxious Weeds

BOT-2 Botany surveys for the proposed project were completed, and no noxious weed infestations were identified (as defined in the Sierra Nevada Forest Plan Amendment, part 3.6). Any additional noxious weed infestations found during implementation would be treated or flagged and avoided.

BOT-3 Wash all off-road equipment used before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds. *Off-road equipment* includes all tree removal and construction equipment and such brushing equipment as brush hogs, masticators, and chippers; it does not include materials transportation trucks, chip vans, service vehicles, water trucks, pickup trucks, and similar vehicles not intended for off-road use. Equipment would be considered clean when visual inspection by Contracting Officer's Representative does not reveal soil, seeds, plant material, or other such debris. When working in known noxious weed infested areas, equipment would be cleaned before moving to other NFS lands.

BOT-4 Ensure that all earth-moving equipment, gravel, fill, or other materials would be free of noxious weeds. Use onsite sand, gravel, rock, or organic matter when possible; otherwise, obtain materials free of noxious weeds from gravel pits and fill sources that have been surveyed and/or approved by a botanist or ecologist at the Lake Tahoe Basin Management Unit.

BOT-5 Minimize the amount of ground and vegetation disturbance in the construction areas. Reestablish vegetation on disturbed bare ground (such as staging areas and access road footprints) at the end of project implementation to minimize noxious weed establishment and infestation. Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw. In addition, areas denuded during construction will be actively revegetated with appropriate native plant species, using plant materials (i.e., seed, container stock, transplant plugs, pole cuttings) collected from local sources, see Appendix F: Re-vegetation Plan. Slash and logs from the site may also be distributed over the disturbed area to provide additional soil cover, retain sediment, provide a microclimate to speed up the soil development and re-vegetation process.

- BOT-6 Use noxious weed-free mulches and seed sources. Salvage topsoil from project area for use in onsite revegetation, unless contaminated with noxious weeds. All activities that require seeding or planting would use locally collected native seed sources when possible. Plant and seed material would be collected from or near the project area, from within the same watershed, and at a similar elevation when possible. Persistent nonnatives such as *Phleum pratense* (cultivated timothy), *Dactylis glomerata* (orchard grass), or *Lolium spp.* (ryegrass) would not be used. This requirement is consistent with the Forest Service Region 5 policy that directs the use of native plant material for revegetation and restoration for maintaining “the overall national goal of conserving the biodiversity, health, productivity, and sustainable use of forest, rangeland, and aquatic ecosystems.” Seed mixes must be approved by the Forest Service botanist.
- BOT-7 Do not site staging areas for equipment, materials, or crews in noxious weed infested areas.
- BOT-8 After the project is completed, monitor areas disturbed during implementation to ensure additional noxious weed species do not become established in the areas affected by the project and to ensure that known noxious weeds do not spread.

Heritage Resources

- HR-1 Flag and avoid any known Washoe heritage sites.
- HR-2 Provide advanced notice to Washoe Tribal site monitors to observe ground disturbing activities, including trenching and tree stump removal at specified locations.
- HR-3 In the event any historic or prehistoric properties are discovered during the implementation of this undertaking, stop all project-related work in the area of discovery immediately, notify the LTBMU Heritage Resources personnel immediately, and implement the procedures as set forth in Section 800.13 of the Advisory Council on Historic Preservation’s regulations in accordance with the guidance as stated in this subsection.

Recreation

- REC-1 Prepare a traffic safety and control plan prior to commencing project implementation. The plan will provide for public safety on Forest Service controlled roads and trails open to public travel.
- REC-2 Phase implementation over more than one year in order to minimize impacts to recreationists and recreational opportunities. Maintain a portion of the campground open to public camping throughout implementation. Initiate temporary forest closure only during the project activity period to ensure public safety. Closure should be as limited as possible to reduce restrictions to public access.
- REC-3 Provide advanced notice to the public to ensure that the public is aware of proposed project activity. Post signs in project areas near public access points to highlight the proposed action and impacts to public access.
- REC-4 Maintain recreational facilities in a usable condition to the extent possible as long as human health and safety is not compromised and project implementation is unimpeded.

Soil and Water

- SOI-1 Implement erosion control and prevention of sediment transport in accordance with: *USDA Water Quality Management for National Forest System Lands in California - Best Management Practices* (USDA Forest Service 2000a).
- SOI-2 Coordinate construction to occur between May 1 and October 15. If grading or movement of soil becomes necessary between October 16 and April 30, a standard grading exemption request will be submitted to TRPA and the Lahontan Water Board prior to October 15.
- SOI-3 During and after periods of inclement weather, consult with an LTBMU hydrologist to determine if soil conditions are sufficiently dry and stable to allow construction to continue without the threat of substantial erosion, sedimentation, or offsite sediment transport. Incorporate language in the construction contract to ensure the contractor is aware of this requirement and potential work limitation. Incorporate language in the construction contract and adjust the allowable time for construction if necessary to reduce the likelihood of construction after October 15.
- SOI-4 Include provision for hazardous materials (i.e., hydraulic fluids, oil, gas) spill kits in contract specifications.
- SOI-5 Restore areas disturbed during construction activities after construction has ended (such as staging areas and access road footprints). Restoration could include decompacting soil and/or mulching (BMP 2-2).
- SOI-6 Staging of materials and equipment will be limited to existing disturbed areas (where soils are already compacted and vegetation has been cleared). No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be removed.

Wildlife

- WILD-1 Limited operating periods (LOPs) restrict the type, spatial extent, and timing of project activities to minimize disturbance to breeding pairs. No LOPs currently apply to this project. If special-status wildlife species are detected in the project vicinity, LOPs would be implemented as determined by the project biologist (USDA Forest Service 2004: standards and guidelines 57, 62, 76, 77, 78, 79, 83, 85, 88; TRPA 1987: Chapter 78). See Table 2-2 for a list of current species and dates of LOPs on the LTBMU. LOPs would be posted in advance by forest order and would be as short as possible. LOPs would be implemented as necessary, based on the most current wildlife data from pre-project field surveys, or habitat suitability as determined by the project biologist (USDA Forest Service 2004; TRPA 1987).

Table 2-2. Limited Operating Periods on the LTBMU

Species	Date Range
Bald eagle nest area	March 1 through August 31
Bald eagle winter area	October 15 through March 15
Golden eagle	March 1 through July 31
Osprey	March 1 through August 15
Peregrine falcon	April 1 through July 31
Northern goshawk	February 15 through September 15
California spotted owl	March 1 through August 15
Great gray owl	March 1 through August 15
Willow flycatcher	June 1 through August 31
Waterfowl	March 1 through June 30

- WILD-2 Any sightings of threatened, endangered, candidate, sensitive, management indicator, or special-interest species would be reported to the project biologist. Nests, dens, and sensitive plants would be protected with flagging, fencing, or limited operating periods in accordance with management direction. Species identification, known locations, and protection procedures for both plants and animals would be brought up during a preconstruction tailgate meeting.
- WILD-3 Removal of larger trees, as required for an efficient road system and campground, would be minimized. Species retention preference would be given to large cedars, then pines, and finally to firs.
- WILD-4 Ground and vegetation disturbance would be minimized to avoid the loss of native vegetation and wildlife habitat.
- WILD-5 Bear-proof garbage dumpsters would be used or all trash associated with the project would be removed daily.

2.2 Alternative 3

The reader is encouraged to reference Figures B-4 and B-5 in Appendix B in conjunction with the following description. This alternative was developed to reduce the potential effects to the following significant issues: removal of conifer trees larger than 30 inches dbh and safety concerns from traffic and pedestrian congestion. The Forest Plan Amendment is the same as under the Proposed Action.

In this action alternative, the overall design of the campground facilities and vehicle traffic patterns was modified to reduce tree removal, and the location of day use parking along Jameson Beach Road was modified. This alternative proposes to reduce the area covered by impervious surfaces from the existing amount of 1,146,737 to approximately 800,000 square feet. This alternative reduces the number of developed campsites from 253 in the Proposed Action down to 229. It also includes a total camper capacity reduction from 1,950 to 1,752. Campsite numbers are proposed to reduce from the existing 325 to 229. The campground retrofit would include a maximum of 129 full utility

hookup sites, 50 single family sites, 45 extended family/small group sites, and six sites with a 24-person capacity per site. The amount of campground extra-vehicle parking is reduced to 45 as compared to 66 in the Proposed Action. The designs of the specific project activities described in Alternative 2 also apply to this alternative. The differences are in the numbers and kinds of campsites, the amount and location of day use parking, and the numbers of trees that would be removed. The specific activities where this alternative differs are listed below. Differences in specific details between the Proposed Action and this alternative are underlined to assist the reader.

B. Retrofit the Campground Facilities

5. Develop asphalt paved circulation roads and campsite parking spurs with appropriate water quality protection BMPs and universal accessibility features to replace existing unpaved roads and campsite spurs. Elements of the campground BMP retrofit include:
 - A. Utility hookup spurs would be a minimum of 60 feet long by 16 feet wide and would meet FSORAG direction (129 sites maximum, each with capacity for up to six people). To accommodate campers with special accessibility needs, seven of the proposed sites would be 60 feet long by 20 feet wide.
 - B. Non-utility spurs would be a minimum 40 feet long and 16 feet wide (50 sites maximum, each with capacity for up to six persons). Three or four of these spurs would be 40 feet long and 20 feet wide to meet FSORAG direction.
 - C. Double occupancy group sites would be 40 feet long and 30 feet wide (45 sites maximum, each with 12-person capacity).
7. Reduce the overall campground capacity from 325 campsites to 229 campsites. There would be an increase in the overall number of utility hookup sites from 114 (35 with water/sewer/electricity, 65 with water/electricity, and 14 with electricity only) to a maximum of 129 (each with code-compliant water/sewer/electricity), and a decrease in the number of non-utility hookup campsites from 211 to a maximum of 85. This would include 45 group campsites (each with a capacity for 12 persons) and six group campsites (each with a capacity for 24 persons). Campers would not be restricted based on their vehicles—all sites would be open to all users. Overall maximum campground capacity is proposed to change from 1,950 to 1,752. Final proposed campsite numbers, configuration, and capacity would be determined during engineering design based on specific site limitations and would be within the special use permit boundary.
11. Remove up to approximately 797 trees from the 78.7-acre project area (Tree removal data based on topographic and site survey from 1987.) All cut trees within this project area would have their stumps removed to facilitate paving BMP measures. Trees proposed for removal fall into the following size classes:
 - A. Up to 789 trees smaller than 30 inches dbh, representing an estimated 16% reduction of 4,852 trees in the project area)
 - B. Up to eight trees 30 inches dbh or larger, representing an estimated 2% reduction of 1,035 trees in the project area.

D. Upgrade Resort Parking

23. Upgrade Jameson Beach Road and existing day use parking areas with appropriate BMPs. This action includes resurfacing and regrading to manage and infiltrate stormwater runoff. Seventy-four parking spaces would be graded and paved on high capability soils east of the road. An accessible walkway would be provided between the parking spaces and Pope Marsh to facilitate pedestrian travel off of Jameson Beach Road.
24. Construct two short-term parking areas for resort village visitors, one with a 29-vehicle capacity and one with a 25-vehicle capacity. These parking lots would include basins to collect and infiltrate stormwater runoff. Free parking would be limited to a short-term duration and would be controlled by a mechanized fee gate. The parking areas would include irrigated vegetative screening to reduce visual impacts.

The proposed 40-car day use parking in the Proposed Action on the west side of Jameson Beach Road is not included in this alternative and a new day use parking area is proposed north of the hotel. The proposed day use parking areas would comply with water quality protection BMP standards.

2.3 Alternative 4

The reader is encouraged to reference Figures B-6 and B-7 in Appendix B in conjunction with the following description. This alternative was developed to reduce the potential effects to the following significant issues: removal of conifer trees larger than 30 inches dbh and safety concerns from traffic. The Forest Plan Amendment is the same as under the Proposed Action.

This alternative is very similar to Alternative 3. The overall design of the campground facilities and vehicle traffic patterns was modified to reduce tree removal, and the location of day use parking along Jameson Beach Road was modified. This alternative proposes to include the components of Alternative 3 but differs from Alternative 3 in the following specific ways:

- 16 utility sites and two utility-site road loops have been eliminated from the eastern edge of the southwest campground area, compared to the Proposed Action. This increases the retention of the open space between the two southern campground areas.
- One additional toilet/shower building is proposed, as compared to the Proposed Action, east of the campground centralized check-in facility.
- 20 non-utility sites (6 persons per site) have been added within the Badger's Den campground area, as compared to the Proposed Action, totaling 69 6-person sites, and 16 12-person sites. All sites are proposed for high capability soil areas. This change increases the density of campsites (as compared to Alternatives 2 and 3) within the Badger's Den area and expands the current footprint approximately 200 feet to the west. Current conditions at Badger's Den (Alt. #1) include 122 campsites (six persons/site).
- Year-round camping access is proposed for only 18 utility campsites located at the north-west portion of the campground area, south of Hwy 89. Winter access to this area would be via a new paved road leading from the proposed "day use village parking lot." In the summer this road would be blocked to vehicle traffic (with the exception of emergency vehicles as needed). Total

campground campsite numbers for Alternative 4 are greater than those for Alternatives 2 and 3, to respond to the reduced year-round camping opportunities in Alternative 4.

- A new bike rental facility is proposed on the north side of the highway in order to further reduce the crossing of Highway 89 by pedestrians and bike users.
- 72 campsite extra vehicle parking spaces would be provided to accommodate the overall increase in campsites as compared to Alternatives 2 and 3.
- Removal of up to 704 trees smaller than 30 inches dbh, representing an estimated 12% reduction of the trees in the project area) and removal of up to four trees 30 inches dbh or larger, representing less than a 1% reduction of the trees in the project area.
- This alternative proposes to reduce the area covered by impervious surfaces from the existing amount of 1,146,737 to approximately 851,054 square feet.

2.4 Monitoring

The purpose of project monitoring is to track the implementation of the project design features and the prescribed BMPs (Appendix A) and, in some cases, to measure their short-term effectiveness at protecting resources. The monitoring types are defined as follows:

- *Implementation monitoring* consists of inspections of project areas and roads to ensure that all management practices and design features are implemented as prescribed, including those designed to prevent sediment delivery and protect water quality.
- *Effectiveness monitoring* consists of inspections of the project to evaluate the effectiveness of the prescribed design features and management practices at meeting their objectives. It includes evaluating the effectiveness of management practices designed to prevent sediment delivery and protect water quality.

2.4.1 Required Monitoring

For all aspects of the project, the Best Management Practice Evaluation Program (BMPEP) protocols developed by the Forest Service and the California State Water Resources Control Board (USDA Forest Service and California State Water Resources Control Board 2002) will be followed to provide qualitative information about BMP implementation and effectiveness. The R-5 BMPEP onsite evaluation form will be used to rate the effectiveness of the BMPs. The monitoring will address the specific activities of the project and the following areas:

- Design implementation inspection and reporting.
- Soil and water BMP monitoring.
- Vegetation (tree removal) monitoring.
- Invasive weeds.
- Heritage resource monitoring.
- Soil moisture monitoring.

2.5 Comparison of Alternatives

Table 2-3 compares the components of each alternative, while Table 2-4 summarizes the environmental consequences of each alternative, by resource. Depending on the resource, impacts are measured either quantitatively or qualitatively.

Table 2-3. Comparison of Project Components by Alternative

	Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3	Alternative 4
Number of Utility Sites	114	170	129	117
Number of 6-PAOT sites	325	220	178	186
Number of 12-PAOT sites	0	27	45	45
Number of 24-PAOT sites	0	6	6	6
Total Number of Campsites	325	253	229	237
Total Number of PAOTs	1,950	1,788	1,752	1,800
Number of Campground Extra- Vehicle Parking	0	66	45	72
Number of Day Use Parking	157*	157	157	157
Coverage	1,146,737 sf	912,885 sf	800,000 sf	851,054 sf

* - Number varies based on highway parking.

Note: Numbers for Alternatives 2, 3, and 4 are for analysis and comparison only, based on conceptual design. During final engineering and design, actual numbers may be reduced.

Table 2-4. Summary of Direct and Indirect Environmental Consequences by Resource and Alternative

Resource	Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3	Alternative 4
Forest Plan Amendment	No direct, indirect, or cumulative effects on any resources.	No direct, indirect, or cumulative effects on any resources.	No direct, indirect, or cumulative effects on any resources.	No direct, indirect, or cumulative effects on any resources.
Camp Richardson Resort Circulation and BMP Retrofit Project				
1-Recreation	No direct or indirect effects.	Adverse effects during the construction phase from dust, demolition of facilities, construction debris, and site disturbances; afterwards, long-term effects would be positive, and the restored site conditions would show immediate and long-term benefits. The new facilities, such as restrooms, would be built in accordance with the Built Environment Image Guide, which integrates these facilities into the natural forest setting without modifying its visual character. Campground capacity would be reduced from 325 sites to between 230 and 255 campsites. There would be an increase in the number of campsites with utility services (170 maximum) and the provision of campsites designed to accommodate small groups (27 sites for up to 12 persons each and six sites for up to 24 persons each). Up to 170 campsites would be available for year-round use.	Very similar to Alternative 2, with a reduced total number of campground sites (from approximately 325 to 229) as compared to Alternative 2. 129 would be utility sites available for year-round camping. Provision for campsites designed to accommodate small groups (45 sites for up to 12 persons each, and six sites for up to 24 persons each).	Very similar to Alternative 2, with a slight decrease in the number of campsites from 325 to 267. 117 utility campsites, with 18 sites open for year-round camping opportunities, reduced substantially as compared to Alternative 2. Provision for campsites designed to accommodate small groups (45 sites for up to 12 persons each, and six sites for up to 24 persons each). User convenience is improved over other alternatives with regard to access to toilet and shower facilities with additional unit.

Resource	Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3	Alternative 4
2-Scenic Resources	No direct or indirect effects.	Short-term adverse effect from construction activities. Long-term improvement due to reduced impervious surfaces, more controlled traffic and parking, re-vegetation of barren areas, and upgraded buildings.	Same as for Alternative 2	Same as for Alternative 2
3-Cultural, Archaeological, and Heritage Resources	No direct or indirect effects.	No adverse effect or alteration of the integrity of the Camp Richardson Historic District. No other known resources are identified or affected.	Same as for Alternative 2.	Same as for Alternative 2.
4-Wildlife and Aquatic Species	<u>Threatened and Endangered:</u> No effect on any species. <u>Sensitive Species:</u> No impact to species, as none is present. Willow flycatcher habitat in Pope Marsh may continue to degrade with ongoing current use levels. No effects to any other species. <u>TRPA Special-Interest Species:</u> No effect on any species.	<u>Threatened and Endangered:</u> No effect on any threatened and endangered species. <u>Sensitive Species:</u> Possible short-term effect on willow flycatcher (if present) within 50 feet of Pope Marsh from disturbance during breeding season; long-term improvement to habitat from reduced impacts in Pope Marsh. No effects to any other sensitive species. <u>TRPA Special-Interest Species:</u> No known occurrences or nests of any species in the project area. Individuals of species may be disturbed during construction (if they do occur); however, disturbance will be short-term. Habitat for waterfowl will be improved in Pope Marsh.	Same as for Alternative 2.	Same as for Alternative 2.

Resource	Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3	Alternative 4
5-Vegetation	<p><u>Coniferous Forest:</u> No effect. <u>Threatened and Endangered:</u> No effect. <u>Sensitive Species:</u> No effect. <u>TRPA Special-Interest Species:</u> No effect. <u>Invasive Species:</u> No effect.</p>	<p><u>Coniferous Forest:</u> Short-term (less than 10 years) reduction in canopy cover; long-term improvement in tree health. <u>Threatened and Endangered:</u> No effect on any threatened and endangered species. Project may affect individual plants of Tahoe yellow cress (a special-interest species) but is not likely to result in a trend toward federal listing. <u>Sensitive Species:</u> May affect individuals but is not likely to result in a trend toward federal listing or loss of viability for branched collybia. <u>TRPA Special-Interest Species:</u> See discussion above for Tahoe yellow cress.</p>	<p><u>Coniferous Forest:</u> Effects very similar to those for Alternative 2, but slightly less due to fewer trees being removed. <u>Threatened and Endangered:</u> Same as for Alternative 2. <u>Sensitive Species:</u> Same as for Alternative 2. <u>TRPA Special-Interest Species:</u> Same as for Alternative 2.</p>	<p><u>Coniferous Forest:</u> Effects very similar to those for Alternative 2, but slightly less due to fewer trees being removed. <u>Threatened and Endangered:</u> Same as for Alternative 2. <u>Sensitive Species:</u> Same as for Alternative 2. <u>TRPA Special-Interest Species:</u> Same as for Alternative 2. <u>Invasive Species:</u> Same as for Alternative 2.</p>
6-Soils and Hydrology	<p>Degraded soil and hydrologic conditions would persist, with ongoing risks of sedimentation and continued impacts on 0.27 acres of Pope Marsh SEZ. 1,146,737 square feet of coverage would continue.</p>	<p>BMPs in place will reduce risk of sedimentation, runoff, and impacts to hydrology. Impervious surface coverage would be reduced from 1,146,737 to 912,885 square feet. Pope Marsh SEZ impacts from recreational use would be reduced from 0.27 acres to 0.14 acres. Beneficial uses would be protected, and there would be greater consistency with TRPA land use capability recommendations.</p>	<p>Effects are very similar to those for Alternative 2. Impervious surface coverage would be reduced from 1,146,737 to 800,000 square feet. Therefore, positive effects on soil and hydrology are slightly greater.</p>	<p>Effects are very similar to those for Alternative 3. Impervious surface coverage would be reduced from 1,146,737 to 851,054 square feet. Therefore, positive effects on soil and hydrology are slightly less than Alternative 3. .</p>

Resource	Alternative 1 (No Action)	Alternative 2 (Proposed Action)	Alternative 3	Alternative 4
7-Air Quality	No direct or indirect effects.	Short-term emissions and dust during construction; reduced vehicle trips would have a positive effect on air quality due to the improvements to the recreational and traffic infrastructure.	Same as for Alternative 2.	Same as for Alternative 2.
8-Transportation and Safety	No direct effects; indirect effects would be continued risk to public from high user levels and congested traffic patterns.	Reduced peak summer traffic (11% estimate reduction) and improved intersections, leading to improved public safety. Improved traffic flows and day-use parking. Circulation within developed campgrounds and campsites would also improve. Highway 89 traffic flow would improve, with fewer pedestrians and bicyclists potentially using the crosswalk on Jameson Beach Road. Pedestrian use of Jameson Beach Road would be greatly reduced due to new pedestrian walkway.	Same as for Alternative 2.	Similar to Alternative 2, however slightly increased safety for bicyclists utilizing the new rental facility (reduced pedestrian crossing of Highway 89 to access rental facility).
9-Riparian Conservation Areas	No change in effects on RCA resources.	All applicable riparian conservation objectives would be met. No adverse effect on riparian conservation area resources.	Same as for Alternative 2.	Same as for Alternative 2.

2.6 Alternatives Considered, But Not in Detail

Scoping respondents had several suggestions for an alternative to the Proposed Action. Several of these suggestions were considered but dropped from detailed consideration for the reasons presented below.

1. *Eliminate all parking along Jameson Beach Road and construct a parking lot northwest of the hotel.*

Forest Service Response: Elimination of day use parking along Jameson Beach Road would not meet the purpose and need of providing BMP compliant parking for visitors to the resort. Development of alternate parking northwest of the hotel is interconnected with actions in the cabin area and historic district because it would affect these resources and require relocation or removal of cabins. A preliminary design was developed that would have resulted in the removal of trees with a 30-inch dbh or greater and the relocation of five cabins. These actions could be considered in future proposals and analysis. Alternative 3 does include some reduction of day use parking along Jameson Beach Road (approximately 74 spaces vs. 101 in the Proposed Action) and relocates those spaces to a small parking area northwest of the hotel.

2. *Significantly reduce the number of RV utility hookup campsites allowed by not constructing RV sites in the area that is currently open space between the existing Eagle's Nest campground and the existing RV sites.*

Forest Service Response: Proposed campsites are not identified as "RV" or "non-RV" sites, but are described based on their spur length and availability of utility amenities. The suggested alternative would not necessarily reduce the number of RVs that could use the campground, but would limit the spur length in these areas to 40 feet rather than 60 feet. These sites would not be provided with utility hookups, but would still allow for camping with self-contained vehicles. In addition, reducing the number of utility hookup campsites below current numbers would not be consistent with, nor would it meet, the Purpose and Need (#4).

3. *Limit the overall allowed size of RVs that the campground will be able to accommodate (i.e., up to 26 feet in length). In addition, do not allow oversized RVs to park in the extra-vehicle parking area.*

Forest Service Response: Size of vehicles would only be limited by the pad provided at the campsite. Limiting campsite spurs to 26 feet long would not meet the project purpose and need because many visitors have vehicles longer than 26 feet and/or have tow vehicles. Campsite extra vehicle parking spaces have been reduced in size in Alternatives 3 and 4.

4. *Designate the non-utility hookup sites as tent-only camping sites.*

Forest Service Response: This is an operational issue. Analysis will assume that all sites are occupied by Class "A" RVs. Many tent sites are often occupied by campers choosing to sleep in their vehicle, regardless of vehicle length. The Proposed Action designates campsites by parking spur length, amenities, and availability of utility hookups, not by use. Campers would continue to have a choice regarding which amenities they wish at their campsite.

5. *Reduce the number of parking sites in the extra-vehicle campground parking area. Limit the size of the extra vehicle for the parking sites so as not to facilitate parking of large trailers.*

Forest Service Response: The project purpose and need calls for providing BMP-compliant parking for resort guests. Elimination of parking for guests does not meet the project purpose and need. Reducing the number of extra vehicle campground parking spaces would likely result in un-managed parking off of paved surfaces. This would not be consistent with the purpose and need of providing BMP compliant parking. Campsite extra vehicle parking spaces have been reduced in size in Alternatives 3 and 4.

6. *No year-round operations of the campground.*

Forest Service Response: The No Action Alternative would maintain the current operational season of the campground. The Forest Service considered not allowing year-round operations and determined that this would not meet the Purpose and Need (#5).

7. *Increase the number of highway parking sites that are to be removed from the Camp Richardson Resort/Tallac Historic area. Do not move the parking sites to other areas of the resort.*

Forest Service Response: The Proposed Action would remove all highway shoulder parking within the resort corridor and would require coordination and approval by Caltrans. Removal of highway shoulder parking beyond the resort area (including the Tallac Historic Site) is outside the scope of this project.

All of the highway parking spots are proposed to be removed from the project area in the Proposed Action, and relocated in BMP-compliant parking areas within the resort. The purpose and need calls for providing BMP-compliant parking for resort guests. Elimination of guest parking does not meet the project's purpose and need.

8. *Remove the emergency access and maintenance roads out of sensitive classes of land and restore those areas.*

Forest Service Response: The Proposed Action improves the condition of this existing road, bringing it into compliance with BMP standards. This road provides alternative access for emergency vehicles and resort maintenance vehicles. Rather than moving the road from its current location to a non-disturbed area, BMPs would be applied to the existing roadway in order to meet water quality standards.

9. *Increase the capacity of the stormwater BMPs to accommodate 100-year flood storm events.*

Forest Service Response: Proposed BMPs will be designed to prevent erosion during a 1 inch in one hour, and 2 inch in 24 hours storm event, meeting TRPA requirements. Forest Service regulations mandate that culverts be designed to pass a 100-year storm event, so any culvert replacement would be designed to the 100-year storm event standard.

10. *Use lighting standards recommended by the Dark Skies Initiative throughout the resort area.*

Forest Service Response: Proposed lighting would be designed to current standards and in keeping with the resort's historic character, not necessarily those recommended by the Dark Skies Initiative. This standard includes minimizing light pollution from light fixtures.

11. *Use Cabin Road as the main entrance to the resort.*

Forest Service Response: This would not meet the purpose and need of reducing traffic congestion on Hwy 89 because it would add an additional intersection.

12. *Develop an access road for private home owners that did not require shared use with public vehicles and pedestrians or controlled access through a parking kiosk.*

Forest Service Response: Providing a road on National Forest System lands that was dedicated for use by private individuals and not accessible to the general public would not be consistent with Forest Service policy. While it is possible that such a road could be designated for resort maintenance and operations staff, emergency vehicles, and private home owners it is not feasible to construct such a road. The road would need to be constructed parallel to and east of the existing Jameson Beach Road and day use parking. This area has been delineated as Stream Environment Zone (SEZ) associated with Pope Marsh.

The presence of a traffic control kiosk is needed to ensure safety and the smooth flow of traffic for resort guests and operators as well as private property owners. Development of a new highway intersection adjacent to the current Jameson Beach Road intersection at Hwy 89 would not be consistent with CalTrans safety standards for separation of intersections.

Chapter 3

Affected Environment and Environmental Consequences

3.0 Introduction

The Council on Environmental Quality (CEQ) regulations direct that agencies succinctly describe the environment that may be affected by the alternatives under consideration (40 CFR 1502.15). This chapter describes the existing physical, biological, social, and economic aspects of the project area that have the potential to be affected by implementing any of the alternatives (i.e., the existing conditions). Each description of the existing conditions is followed by a description of the environmental effects (direct, indirect, and cumulative) that would be expected to result from undertaking the proposed action or other alternatives. Together, these descriptions form the scientific and analytical basis for the comparison of effects table found at the end of Chapter 2, “Alternatives, Including the Proposed Action.”

3.0.1 Organization of Chapter 3

Chapter 3 combines information on the existing conditions and environmental effects of the alternatives for the various resources. The information is separated into these resource areas for ease in reading. The discussion of alternatives is organized by resource area, and each resource area is presented as follow:

- *Introduction.* The scope of the analysis briefly describes the geographic area(s) for the individual resource and its indicators potentially affected by implementation of the proposed action or alternative. The scope of the analysis varies according to individual resource area and may also vary for direct, indirect, and cumulative effects.
- *Existing Conditions.* The existing conditions section provides a description of the resource environment that is potentially affected based on current resource conditions, uses, and management decisions.
- *Direct, Indirect, and Cumulative Effects.* This section provides an analysis of direct, indirect, and cumulative environmental effects on the resource area by implementing each of the alternatives, according to the indicators and issues identified for that resource.

Direct effects are caused by the actions to implement an alternative, and occur at the same time and place. Indirect effects are caused by the implementation action and are later in time or removed in distance, but are still reasonably foreseeable (i.e., likely to occur within the duration of the project).

Cumulative effects are the result of the incremental direct and indirect effects of any action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects can result from individually minor, but collectively significant actions, taking place over a period of time.

3.0.2 Projects Considered for Cumulative Effects

3.0.2.1 Past Projects

In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior actions that have affected this campground and resort area and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been affected by innumerable actions within the resort area in development of the resort to its current state today. Trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions has the risk of ignoring the important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects. Third, public scoping for this project did not identify any public interest or need for detailed information on individual past actions. Finally, the CEQ issued an interpretive memorandum on June 24, 2005, regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.”

The cumulative effects analysis in this EA is also consistent with Forest Service NEPA Regulations (36 CFR 220.4(f)) (July 24, 2008), which state, in part:

“CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. Once the agency has identified those present effects of past actions that warrant consideration, the agency assesses the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects. The final analysis documents an agency assessment of the cumulative effects of the actions considered (including past, present, and reasonable foreseeable future actions) on the affected environment. With respect to past actions, during the scoping process and subsequent preparation of the analysis, the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects. Cataloging past actions and specific information about the direct and indirect effects of their design and implementation could in some contexts be useful to predict the cumulative effects of the proposal. The CEQ regulations, however, do not require agencies to catalogue or exhaustively list and analyze all individual past actions. Simply because information about past actions may be available or obtained with reasonable effort does not mean that it is relevant and necessary to inform decisionmaking. (40 CFR 1508.7)”

For these reasons, the analysis of past actions in this section is based on current environmental conditions.

3.0.2.2 Present Projects

Additional information on these projects and those in the planning stage listed below can be found at www.fs.fed.us/r5/lbmu, under "Land and Resources Management" and search "Projects."

There are two projects to be considered:

- **Angora Fire Restoration:** this project was approved in 2010. The closest treatment stands are 0.8 mile south of the project boundary and involve removal of dead trees and thinning of residual conifer stands from the Angora Fire and then treating the fuels created by the removal. These stands do not occur in the same 7th field subwatershed as the proposed project.
- **Taylor Creek Environmental Education Center replacement,** approximately 1 mile west of the proposed project. This project was approved by the LTBMU in 2010 but has not yet been implemented. The project involves replacement of the educational/visitor building at the 4.9-acre project site. This project does not occur in the same 7th field subwatershed as the proposed project.

3.0.2.3 Projects in the Planning Stage

There are four projects to be considered.

- **South Shore Fuel Reduction –** This project was proposed in 2009 and is currently under environmental review. It involves thinning and associated fuel reduction in conifer stands around South Lake Tahoe. There are several treatment stands adjacent to the project site, and one stand (Stand 35) is within the project site (between the Eagle's Nest and the Recreational Vehicle area on the south side of Highway 89).
- **The California Department of Transportation** is considering a proposal to address water quality concerns along the Highway 89 right-of-way to the east and west of the Camp Richardson Project. The improvements will likely be more restricted parking along the highway corridor and improvements of existing intersections to reduce both traffic and pedestrian traffic and reduce vehicle congestion.
- **Fallen Leaf Trail ATM.** The Fallen Leaf ATM project is intended to analyze the current and anticipate future non-motorized recreational trail needs in the Fallen Leaf Lake area, and then to design and implement a trail plan to meet those needs. New trails may be proposed to connect destinations to access points. Trailheads and trailhead parking would also be identified for upgrade with BMPs, existing unmanaged parking areas may be adopted and formalized, and new parking facilities may be proposed for construction.
- **Tallac Site Historic Facilities BMP Retrofit.** Improvements in Best Management Practices (BMPs) are planned to bring the Tallac Historic Site into compliance with water quality protection standards. This includes implementation of water quality protection BMPs where appropriate to reduce stormwater runoff volume, reduce peak flow levels, and reduce the amount of sediment and pollutants reaching Lake Tahoe. Additionally the project would provide for universal accessibility consistent with the FSORAG and ABA where appropriate.

3.1.1 Introduction and Affected Environment

This analysis relies on the LTBMU's Forest Plan, the Forest Service Outdoor Recreation Accessibility Guidelines, the Architectural Barriers Act/American Disabilities Act, the Forest Service Built Environment Image Guide, and Forest Service Manual direction (USDA Forest Service 2006:Section 2333–Site and Facility Planning and Design; USDA Forest Service 2003:Chapter 2380–Landscape Management). In addition, it relies on the proposed action and alternative action descriptions, an onsite visit, and personal discussions with LTBMU personnel associated with this project.

The 79-acre Camp Richardson Resort Campground and vehicle circulation BMP retrofit project is located at the south end of Lake Tahoe within the Pope-Baldwin Recreation Area and has historically been a key recreation component of the Lake Tahoe Basin. It is part of a larger recreation complex that includes Baldwin Beach, Pope Beach, Tallac Historic Site, Fallen Leaf Campground, and Taylor Creek Environmental Center. California State Scenic Highway 89 bisects this project and the Pope-Baldwin Recreation Area. The Pope-Baldwin (Class I) surfaced bicycle trail parallels Highway 89 and bisects this project.

The project recreation facilities and infrastructure are in poor condition. The interior road system in the three campground areas is unpaved and lacks traffic barriers to control vehicle traffic or to define camping units. This creates the potential for conflicts between camping units. This has resulted in an unmanaged control of vehicles, and this has created noticeable barren areas with heavily compacted soils. The existing public recreation facilities do not meet current universal access requirements and the existing ratio of the number of toilets to persons (1:54) does not meet existing Forest Service Manual direction (USDA Forest Service 2006: Section 2333.51) of 1 toilet to serve 35 persons. The outdated and overused condition of the recreation facilities are of lower quality than commonly found in federal and state recreation developments elsewhere. The deteriorated condition of the recreation facilities, poor site design, ineffective circulation patterns and barren site conditions all contribute to a less than desirable quality recreation experience. Recreation users prefer newer facilities with surfaced interior roads which provide back-in campsites and individual site separation for privacy. Well- maintained and managed facilities are key factors in providing a quality recreation experience, yet are lacking within the project.

Despite the deteriorated recreation facilities, the project area is very heavily used. While visitors travel to the project area from throughout the nation and world, the highest concentration of users come from the metropolitan areas of San Francisco, Sacramento, and Reno. Many local residents also enjoy this area and both groups hold a high interest in the wide range of recreation activities in and adjacent to this project. The typical peak use recreation season runs from June 15 through Labor Day weekend (approximately 80 days) where 2010 use data at the Jameson Beach Road kiosk shows approximately 920 visitors per day who pay for day use parking during the peak use season. In addition, bus walk-in, highway walk-in, and bike-in add an additional 732 visitors per day during the peak use season. During the off-peak season, it is assumed use levels would be 5% of the peak use period (6.609 visits per year or 83 visits per day). This accumulates an estimated 138,789 visits per year which illustrates the high levels of recreation use within the project area.

Existing campground use levels (2010) are estimated at 118,770 recreation visitor days with June through September being the heaviest used months. Feedback from Camp Richardson Resort indicates that over 50% of campground visitor's travel in groups larger than 6 persons, while the current maximum limit for individual campsites is 6 persons.

Anecdotal information suggests 60% of the summertime visitors participate in vehicle based camping while 40% are tent camp based. During the cooler months of September and October, approximately 80% of the campground use is vehicle based and 20% is tent based. The mix between vehicle based use and tent camping is a personal choice rather than a design or management choice because all sites are open to either type of use. Verbal feedback from the concessionaire at Camp Richardson, as well as from other resort and campground concessionaires, indicates an increasing public request for additional utility hookup campsites, despite a reported decrease in the number of people purchasing recreational vehicles with utility-based amenities.

The National Visitor Use Monitoring Results (USDA Forest Service 2010) provides additional data into the recreation use within the Lake Tahoe Basin Management Unit and estimates that 45% (above the national average) of visits are by females, over 10% of visits are by Asians, and over 5% of users are also Hispanic. While campground facilities are in various states of disrepair, the National Visitor Use Monitoring Results reveals that overall user satisfaction within the Lake Tahoe Basin Management Unit is extremely high. While this report cautions its use for individual sites, visitor use at Camp Richardson provides anecdotal insights into the importance it plays as one of the key recreation components within the LTBMU.

Numerous parking and circulation issues exist that adversely affect the soil and water resources (see Section 3.6) and lack suitable paved surfacing commonly found in heavily used recreation areas. These include the Jameson Beach Road and existing day use parking areas, resort short term parking, hotel parking, Highway 89, and the three campgrounds.

This area falls within the Fallen Leaf Management Unit, which is the heaviest developed and used recreation area within the LTBMU. The Forest Plan classifies this area to be managed with a Recreation Opportunity Spectrum (ROS) class of rural where this level of development is permitted. The existing campgrounds, campsites, and trails create physical barriers that do not accommodate access for persons with disabilities. These deficiencies include the lack of paved surfaces with appropriate grades, access to campsites, water spigots, information stations, and rest rooms. Paved trails to accommodate users with disabilities do not exist from Badgers Campground to Pope Beach. This combined effect results in use and enjoyment by this user group as being severely or prohibitively limited.

3.1.2 Alternative 1 – No Action

3.1.2.1 Direct and Indirect Effects

There would be no direct effects of this alternative on recreation resources, access, or the quality of the recreation experience within the project area. The indirect effect would result in the continuation of the existing facilities and environmental resource conditions within the project area. The existing recreation facilities are in poor condition and would gradually continue to further deteriorate, and certain user groups (persons with disabilities) would continue to be underrepresented. The poorly defined road and campsite locations would remain unchanged, and

the existing adverse environmental conditions such as barren soils with extensive soil compaction would also remain.

3.1.2.2 Cumulative Effects

Under this alternative, there would be no cumulative effects.

3.1.3 Alternative 2 – Proposed Action

3.1.3.1 Direct and Indirect Effects

The Proposed Action would replace the low-quality recreation facilities with high-quality recreation facilities that meet universal access requirements and local health and safety building codes. The existing unpaved campground and campsite parking spurs would be replaced with paved surfaces. These would replace the unconfined campground travel surfaces with well defined roads and parking spurs, which would eliminate dust on campground roads and reduce vehicle traffic off paved travel routes. The aging water, sewer, and electrical systems would be replaced and would meet health and safety standards. The overall campground capacity would be reduced from 325 campsites to between 230 and 255 campsites (depending upon final site design), which would reduce crowding. Additional high-quality amenities would include an overall increase in the number of utility hookups from 114 to a maximum of 170 campsites with full hookups. The number of non-utility hookups would decrease from 211 to a maximum of 85. Camping opportunities would be expanded to provide yearlong camping at all of the utility hook-up sites (170 sites), and snow removal would be provided to support winter camping opportunities that are currently not available at or nearby the project site. The expected mix of winter camping is likely 98% vehicle based and 2% tent camping. All camping sites would be available for vehicle and tent based camping opportunities without any management change of the existing policy, which allows campers to select their individual site. Based on anecdotal information from other concessionaires operating recreation campgrounds in the LTBMU, the percentage of visitors using vehicle based camping is anticipated to increase from 60% to 70% under this alternative.

The proposed retrofits would change the ratio of the number of toilets to persons from 1:54 to 1:35 and thus meet the FSM 2333.51 requirement. These facilities would meet Forest Service Outdoor Recreation Accessibility Guidelines, and their design would be consistent with the USFS Built Environment Image Guide to ensure a pleasing appearance within the forest setting. New amenities adjacent to the restroom areas would include bear-proof trash dumpsters, short-term parking, and accessible spigots and walkways. Additional special accessibility needs would be implemented for eleven sites where none currently exist. New sections of paved bike path are proposed. One new section would carry non-motorized users from the existing Class I bike path north of the resort village. A second section would carry non-motorized users northward toward the beach and would terminate at a proposed new day use restroom building located beyond the shore zone of Lake Tahoe.

Important changes are proposed to access Camp Richardson from Highway 89 and improved internal parking and circulatory improvements are planned which upgrade, construct, modify, or pave existing surfaces. Please see Section 3.8 for a discussion regarding traffic and parking.

Implementing this alternative would have the direct effect of enhancing the quality of recreation experiences within the project area. The most noticeable would be the replacement of the aged recreation facilities with new facilities, which would include numerous improvements and amenities not currently present. The number of campsites would be reduced by nearly 25%, which would improve the separation between campsites and reduce the level of social conflicts between campsites. During the construction phases, portions of the project area would temporarily be closed to public use and would result in reduced day use and camping opportunities; however, this effect would be short term (approximately 3 months/year for two years) and would be mitigated by implementation of design features to control the timing and location of construction.

Overall, maximum camping capacity would be reduced approximately 10% (the number of campsites would be reduced by 18%). Campsites would be provided to accommodate groups larger than 6 (not currently available) and would be substantially more responsive to this existing unmet demand. The current management practice would continue, which would leave campsite selection to individuals rather than a choice determined by design or management. Implementing this alternative would have no effect on existing visitor use patterns, and there would be no effect on the rural ROS class.

Executive Order 12898 requires that all federal actions consider potentially disproportionate effects on minority and low-income communities, especially if adverse effects on environmental or human health conditions are identified. Adverse environmental or human health conditions created by any of the alternatives considered would not affect any minority or low income neighborhood disproportionately.

The activities proposed in this alternative are based solely on the existing and desired condition of the Camp Richardson complex, sensitivity of the environment, and practical treatment access in response to the purpose and need. In no case was the project design based on the demographic makeup, occupancy, property value, income level, or any other criteria reflecting the status of adjacent non-federal land. Based on a review of the location of the proposed improvements in any of the alternatives in relation to non-federal land, there is no evidence to suggest that any minority or low income neighborhood would be affected disproportionately. Conversely, there is no evidence that any individual, group, or portion of the community will benefit unequally from any of the actions in the proposed alternatives.

3.1.3.2 Cumulative Effects

As discussed in section 3.0, there are two current projects and four reasonably foreseeable projects. Of these projects, the following projects have the potential to contribute to cumulative impacts due to their proximity to this project area. The Taylor Creek Environmental Center replacement project is approximately $\frac{3}{4}$ mile to the west and is often used for free day use parking. Should these two projects be implemented simultaneously, a temporary reduction in the number of day use parking spaces could be expected until phases of either project area are completed. The present projects (Angora Fire Restoration) and other projects in the planning stage (Fallen Leaf Trail ATM and Tallac Site Historic Facilities BMP Retrofit) would have no cumulative effects. There would be a short term cumulative effect as a result of machinery and chain saw noise from the South Shore Fuel Reduction project. Approximately 8 acres of the South Shore project overlap with this project of which approximately 4 acres would be treated. Therefore the cumulative effects of this project would be limited in duration and intensity. In considering projects that may contribute to cumulative effects, the cumulative effects analysis was bound in time to 15 years in the future for foreseeable future

actions. This approximates the time frame over which conditions due to the Proposed Action could be reasonably estimated. The area considered for the cumulative effects analysis is roughly a 2 mile area bounded by the Spring Creek Trail on the west.

3.1.4 Alternative 3

3.1.4.1 Direct and Indirect Effects

The direct and indirect effects of the Action Alternative would be similar to the Proposed Action with the following exceptions. The overall campground capacity would be reduced from 325 campsites to between 215 and 229 campsites (depending upon final site design), which would further reduce crowding and increase solitude as compared to the Proposed Action. The number of campsites would be a maximum of 229 instead of a maximum of 255 for the Proposed Action, and the camping capacity would be 1,752 persons instead of 1,788 persons in the Proposed Action (a 10% reduction). The number of campground extra vehicle parking spaces would be 45 instead of 66 in the Proposed Action. This would result in slightly less parking and camping opportunities during the peak use season when there is considerable competition for day and overnight use; however, this reduction is very slight. There would be 129 utility camping sites available for year-round (winter) camping sites, as compared to 170 sites under the Proposed Action. This would lead to a reduction in the recreational opportunities in the winter season,

3.1.4.2 Cumulative Effects

The cumulative effects of this alternative would be similar to those for the Proposed Action.

3.1.5 Alternative 4

The direct and indirect effects of this alternative are very similar to Alternative 3. There would be a slight difference in the camping capacity. The camping capacity would be 1,800 persons instead of the current capacity of 1,950 (an 8% reduction) and 1,752 for Alternative 3. This change would not be substantive, and the effects would be the same as under Alternative 3. There would be a reduction in the number of utility campsites from the south-west RV area; specifically eliminating two proposed loops which would encroach into the undeveloped area between the two campgrounds on the south side of Hwy 89. There is an increase in the number of non-utility campsites in the Badger's den campground on the north side of Hwy 89. The overall campsites would be increased from between 215 and 229 campsites (Alternative 3) to approximately 267 campsites. This would slightly increase the density of campsites in the Badger's Den area, and there would be a slight reduction in the users' sense of solitude (compared to Alternative 2). The overall density in the campground would be very similar to that for Alternative 3. The number of campground extra vehicle parking spaces would be 72 instead of 45 in Alternative 3. This would result in slightly more parking opportunities during the peak use season when there is considerable competition for day and overnight use. There is an additional shower/toilet facility proposed that would be to the east of the main camping check-in site. This additional facility will improve convenience for camping staff, reduce the amount of pedestrian traffic throughout the camping area,

and also improve the accessibility opportunities for persons with disabilities, as some of them would have a shorter distance to travel to use facilities of this nature.

The most noticeable difference from Alternative 3 is the substantial reduction in yearlong camping opportunities, as only 18 utility sites would be available for year-long camping as compared to 129 sites under Alternative 3 and 170 sites under the Proposed Action. This would reduce the potential recreation opportunities which would be provided in Alternatives 2 and 3. The increase in overall campsite numbers compared to Alternatives 2 and 3 offsets this reduction in yearlong camping opportunities.

This alternative adds a new bike rental facility on the north side of Hwy 89 to reduce the number of highway crossings by bikes and pedestrians. This places the bike rental facility on the same side of Hwy 89 as the bike path and reduces the congestion associated with bike use. More importantly, it substantially reduces the potential safety issues associated with bike use by eliminating the need for bike users to cross Hwy 89.

3.1.5.1 Cumulative Effects

The cumulative effects of this alternative would be similar to those for the Proposed Action.

3.1.6 Analytical Conclusions

Alternative 2 is superior to Alternatives 1, 3 and 4 as it provides the highest number and breadth of quality recreation opportunities. While Alternative 1 (No Action) provides 325 campsites, (as compared with 253 in Alternative 2) their deteriorated condition, inadequate design, deteriorated site conditions and ineffective barrier and circulatory systems do not provide a high quality recreation experience and the alternative does not meet the purpose and need. Alternative 2 clearly provides a new recreation presence in the project area and fully meets the purpose and need to provide facilities and amenities which reflect the unique recreational setting within the Lake Tahoe Basin Management Unit.

Alternatives 3 and 4 are superior to Alternative 1 as they replace the deteriorated facilities with new facility improvements which meet current construction and access standards and also expand the range of recreational opportunities (i.e. year-long camping). Similar to Alternative 2, they effectively address design, barrier, circulatory, and site conditions associated with the existing conditions. Alternative 3 is superior to Alternative 4 as it provides more developed campsites and permits yearlong camping while Alternative 4 provides very limited yearlong camping and also increases user densities, particularly in the Badger's Den area; however, Alternative 4 does provide more extra vehicle parking spaces than Alternative 3 and also provides two additional facilities that either increase pedestrian and bicyclist safety (the bike rental facility located south of Highway 89) or the additional toilet/shower facility, which increases the convenience for recreationists.

3.2.1 Introduction and Affected Environment

This analysis relies on the LTBMU's Forest Plan, the Forest Service Built Environment Image Guide, and Forest Service Manual direction (USDA Forest Service 2003:Chapter 2380–Landscape Management). In addition, it relies on the proposed action and alternative action descriptions, an onsite visit, and personal discussions with LTBMU personnel associated with this project.

The project is located on a relatively flat area that is dominated by a mixed mature second growth pine and fir overstory that provides a shaded tree canopy and creates a forest setting that contributes to a quality recreation experience. The forest canopy on the north side of Highway 89 is fairly open and has more development, while on the south side it is denser with a mosaic of tree sizes and classes. The backdrop landscape consists of the Sierra Nevada Crest and the Carson mountain ranges, and the clear blue waters of Lake Tahoe are within a short walking distance.

Existing facilities are noticeable but visually subordinate to this landscape. However, these facilities, including day use parking and interior campground road and parking spurs, are noticeably well-worn and aging due to long-term concentrated recreational use of this highly popular site. The presence of barren soils and the lack of well defined circulatory systems and parking areas tend to detract from the visual quality of this area.

All of the project components are considered key viewing points and are within the foreground view area, which is being managed in accordance with the visual quality objective of partial retention.

3.2.2 Alternative 1 – No Action

3.2.2.1 Direct and Indirect Effects

This alternative would have no direct effect or indirect effects on the existing scenery resources.

3.2.2.2 Cumulative Effects

Since there are no direct or indirect effects, there would be no cumulative effects associated with this alternative.

3.2.3 Alternative 2 – Proposed Action

3.2.3.1 Direct and Indirect Effects

This alternative proposes to remove up to 40 trees of 30 inches dbh or greater and up to 910 trees under 30 inches dbh to facilitate BMPs including campground road alignments and campsite spur construction. All cut trees would have their stumps removed. Tree removals would reduce the

existing tree densities and increase sunlight on the forest floor; however, this would mostly be unnoticed by the viewing public because they would be driving by or temporarily excluded from the project area during project implementation. The total number of campsites would be reduced from 325 to between 230 and 255, depending on the final design limitations.

Implementation of the Proposed Action would have temporary (1 year or less) and short-term adverse effects on the scenery resources during the construction phases. These would include dust, demolition of facilities, construction debris, and site disturbances such as site preparation and grading.

These disturbances would degrade scenery resources during the construction phases on a short-term basis; however, upon phased project completion, there would be substantial enhancements to these resources. These enhancements would include paved, well defined interior circulatory roads and campsite spurs, parking areas, and revegetated areas that would gradually replace the existing barren soils with native vegetation. The new facilities, such as restrooms, would meet the Built Environment Image Guide, which integrates these facilities into the natural forest setting without modifying its visual character.

Upon completion of each construction phase, the short- and long-term direct and indirect effects on scenic resources would be positive, and the restored site conditions would show immediate and long-term benefits. The degraded environmental and facility conditions found in the existing condition and during the construction phase of this alternative would be enhanced. The presence of facilities within developed sites would be reduced by approximately one third, thus creating more open undeveloped space, and a variety of vegetation would be planted in the existing barren soil. The visual quality objective of partial retention would remain unchanged; however, the scenery resource would be enhanced with the planting of native vegetation for screening, restoration of barren soils, and other similar improvements. The scenic impacts associated with winter use would be limited to snow plowing and the presence of recreation vehicles which are commonly found throughout the Lake Tahoe Basin during the winter months. These effects would have no effect on the visual resource.

3.2.3.2 Cumulative Effects

One stand from the South Shore Fuel Reduction and Healthy Forest Restoration Project (South Shore Project) includes a portion of the project area south of Highway 89. The South Shore Project proposes to reduce fuel loads by approximately 40% in this area and would focus on hand thinning and mechanical tree removals. The majority of tree removals would occur in the understory of this second growth tree stand and mostly remove trees under 14 inches dbh. Some trees up to 20 inches dbh (hand thinning) or 30 inches dbh (mechanical) would be removed. The cumulative effect of this project and the South Shore Project would be the removal of additional trees and the creation of a more open forest than planned in this project. The more open forest would closely mimic the historic visual character of this landscape; therefore, the visual quality objective of partial retention would remain unchanged. The present projects (Angora Fire Restoration and Taylor Creek Environmental Education Center) would not contribute to cumulative effects as they would be improving existing natural or man-made structures. The projects in the planning stage (Caltrans Highway, 89 improvements, Fallen Leaf Trail ATM and Tallac Site Historic Facilities BMP Retrofit) would also have no cumulative effects because these projects are also expected to improve existing recreational facilities or associated parking. In considering projects that may contribute to cumulative effects, the cumulative effects analysis was bound in time to 15 years in the future for

foreseeable future actions. This approximates the time frame over which conditions due to the Proposed Action could be reasonably estimated. The area considered for the cumulative effects analysis is roughly a two-mile area bounded by the Spring Creek Trail on the west.

3.2.4 Alternative 3

3.2.4.1 Direct and Indirect Effects

The effects on the scenery resource would be similar to those for the Proposed Action, except that the extent of site disturbances would be substantially less due to the reduction of campsites from a maximum of 325 to a maximum of 229. This alternative proposes to remove up to 8 trees that are 30 inches dbh or greater and up to 789 trees under 30 inches dbh to facilitate BMPs including campground road alignments and campsite spur construction. The most substantial change from the Proposed Action would be that the number of trees over 30 inches dbh that would be removed would be reduced from 40 to 8, however this reduction is not expected to be noticeable to recreationists, as the campground area will continue to be dominated by coniferous forest.

This alternative would have the short- and long-term visual benefits associated with the campground retrofit and reconstruction portions of the Proposed Action; however, fewer trees would be removed than with the Proposed Action. This alternative would meet the visual quality objective of partial retention.

3.2.4.2 Cumulative Effects

The cumulative effects of the Action Alternative would be similar to those for the Proposed Action.

3.2.5 Alternative 4

3.2.5.1 Direct and Indirect Effects

When compared with Alternative 3, this alternative removes 704 trees under 30 inches dbh instead of 789 and removes four trees larger than 30 inches dbh rather than eight. This very slight reduction in tree removal would have direct and indirect effects similar to Alternative 3.

3.2.5.2 Cumulative Effects

The cumulative effects of this alternative would be similar to those for the Proposed Action and Alternative 3.

3.2.6 Analytical Conclusions

All alternatives meet the visual quality objective of partial retention. All of the alternatives would have a positive effect on the scenic resources, as campground facilities would be improved in the long-term. The No Action Alternative removes no trees and is superior to Alternatives 2, 3, and 4 in

the short term. Alternative 2 removes 910 trees with 40 trees being over 30 inches dbh. Alternative 3 removes 789 trees with 8 trees being over 30 inches dbh, and Alternative 4 removes 704 trees with four trees being over 30 inches dbh. The exception to this conclusion is those areas within developed sites where barren soils currently exist. Within developed sites Alternatives 2, 3, and 4 propose to revegetate the barren soils and therefore are substantially superior to Alternative 1. These areas are within the immediate foreground most frequently viewed by the public. In the long term, Alternatives 2, 3, and 4 are superior to the No Action Alternative as the modified landscapes most closely mimics the more open visual character historically found in this area.

Cultural, Archaeological, and Heritage Resources

3.3.1 Introduction and Affected Environment

As a federal action, the undertaking of the proposed project must comply with NEPA and Section 106 (Codified as 36 CFR Part 800) of the National Historic Preservation Act (NHPA), and must consider effects on historic areas and properties. Section 106 of the NHPA prescribes specific criteria for determining whether a project would adversely affect a historic property, as defined in 36 CFR 800.5. An impact is considered significant when prehistoric or historic archaeological sites, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) are subjected to the following effects:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property that causes its deterioration.
- Transfer, lease, or sale of the property.

The cumulative effects analysis was bound in time to 15 years in the future for foreseeable future actions. This approximates the time frame over which conditions due to the action alternatives could be reasonably estimated. The area considered for the cumulative effects analysis is the Camp Richardson Historic District. A variety of reports that document the previous survey of the project area and four archaeological sites were identified (Project Record E-17). Design of the retrofitted campground, relocation of parking within the resort, and relocation of the bike trail will avoid all previously recorded archaeological sites.

In 2005, Camp Richardson was determined to be eligible as a historic district based on a Determination of Eligibility (DOE) for the Camp Richardson Historic District for inclusion to the NHRP. The DOE provides the historic context for determining the historic significance of the adjacent campground facilities. This DOE was updated by the Forest Service to include additional structures within the campground, such as campground spurs, campground pods, roads, restrooms, and other amenities. These additional structures would be affected by the proposed action. The DOE recommended to the California State Historic Preservation Officer (SHPO) that the architectural resources located in the Camp Richardson Resort Campground do not appear eligible for listing on the NRHP under any of the criteria. The SHPO has concurred with that recommendation (Project Record Document E-12).

The LTBMU evaluated a historic cabin in the Eagle's Nest Campground. This historic cabin was determined to be a contributor to the Camp Richardson Historic District. This cabin is in a severe

state of disrepair and is a human health and safety hazard to campground users. This cabin has been carefully evaluated, and SHPO has concurred that the cabin is unsalvageable due to severe structural deterioration (Project Record Document E-12).

3.3.2 Alternative 1 – No Action

3.3.2.1 Direct and Indirect Effects

This alternative would have no direct effect or indirect effects on the existing cultural resources.

3.3.2.2 Cumulative Effects

Since there are no direct or indirect effects, there would be no cumulative effects associated with this alternative.

3.3.3 Alternative 2 – Proposed Action

3.3.3.1 Direct and Indirect Effects

The only cultural site that would be affected would be the deteriorating historic cabin in the Eagle's Nest campground area, which would be removed. The SHPO has concurred with the determination that the project would not adversely affect or alter the integrity of the Camp Richardson Historic District.

3.3.3.2 Cumulative Effects

As discussed under direct and indirect environmental effects, there would be no adverse effects on cultural resources from implementation of the Proposed Action; therefore, no cumulative effects would occur.

3.3.4 Alternative 3 and Alternative 4

3.3.4.1 Direct and Indirect Effects

The only cultural site that would be affected would be the deteriorating historic cabin in the Eagle's Nest campground area, which would be removed. The SHPO has concurred with the determination that the project would not adversely affect or alter the integrity of the Camp Richardson Historic District.

3.3.4.2 Cumulative Effects

The cumulative effects of the Action Alternatives would be the same as those for the Proposed Action.

3.3.5 Analytical Conclusions

There would be no significant impacts on any cultural, heritage, or archaeological resources since there are no direct, indirect, or cumulative effects on the Camp Richardson Historic District and there are no other resources in the project site.

3.4.1 Introduction and Affected Environment

This section discloses the existing conditions and potential effects of the Proposed Action and alternatives on 1) species and their habitats listed as endangered, threatened, or proposed under the Endangered Species Act of 1973 as amended (ESA); 2) species designated as sensitive by the Regional Forester in Region 5; 3) habitats designated for Management Indicator Species (MIS) for the Lake Tahoe Basin Management Unit (MIS Report); and 4) wildlife and fisheries threshold standards as designated by the TRPA. This discussion is based on the Biological Assessment/Biological Evaluation (BA/BE) for Aquatic and Terrestrial Species Report (Project Record Document E-5), the MIS Report (Project Record Document E-9), and the TRPA Project Impact Analysis (Project Record Document E-6).

The BA/BE provides a process through which potential effects of the Proposed Action on sensitive species are evaluated and considered during the planning and review process. The analysis in the BA/BE is conducted to determine whether the Proposed Action would result in a trend toward sensitive species becoming federally listed or a loss of viability. Effects on threatened, endangered, and Forest Service sensitive species are summarized from the BA/BE in Table 3.4-3.

Species considered for inclusion in this document come from lists obtained from the USFWS and the Forest Service. For analysis of direct and indirect effects on individuals, the species' life history information, necessary habitat elements (e.g., snags), the spatial and temporal scale of potential impacts, and vegetation structure and composition important for various life history stages (e.g., suitable habitat), were considered. The limits of direct effects for the analysis were limited to the project footprint and the limits of indirect effects include the entire action area (project area plus a 0.5-mile radius around the project). Where appropriate, effects for Alternatives 2 and 3 are combined if there is no difference in the effects. The cumulative effects analysis was bound in time to 15 years in the future for foreseeable future actions. This approximates the time frame over which conditions due to the Proposed Action could be reasonably estimated. The area considered for the cumulative effects analysis is roughly the boundary of the Cascade Creek-Tallac Creek-Taylor Creek (HUC 6) watershed.

3.4.2 USFWS Threatened and Endangered Species

The USFWS list of federally threatened and endangered species potentially occurring in the LTBMU was last updated on April 29, 2010 (USFWS 2010). The American wolverine was listed as a candidate species in the federal register as of December 14, 2010. The Forest Service has not initiated any informal or formal consultation with the USFWS regarding the Proposed Action. The Proposed Action would not have any effects on federally listed species because there is either no habitat for these species in the project and/or the project area is outside of the known range of these species; therefore no federally listed species (threatened and endangered) are addressed any further in this document (see Project Record Document 3-5).

3.4.3 Forest Service Sensitive Species

The Forest Service, Pacific Southwest Region, 1998 list of sensitive animal species for the LBTMU was last appended on October 15, 2007 (USDA Forest Service 2007). Table 3.4-1 summarizes the Forest Service sensitive species that are considered in this analysis.

Table 3.4-1. Sensitive Species Considered

Species	Status	Suitable Habitat/Observed in/near action area? Included for further discussion?
BIRDS		
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Forest Service Sensitive Species	Yes. Species is known to nest and winter along the shore of Lake Tahoe. Known to nest at nearby Emerald Bay and has been documented perching within the project area along the shores of Lake Tahoe.
California spotted owl (<i>Strix occidentalis occidentalis</i>)	Forest Service Sensitive Species	Yes. Forested areas in the project area represent potential habitat for this species. Species is known to nest in the areas above Fallen Leaf Lake but have not been documented nesting or utilizing the project area. Surveys of the project area in 2009 failed to detect spotted owls.
Northern goshawk (<i>Accipiter gentilis</i>)	Forest Service Sensitive Species	Yes. Forested portions of the project site represent potential habitat for this species. Species has been documented immediately south of the project area during surveys conducted in 2006, but is not known to nest in this area. Nearest nest occurrences are approximately 2 miles southeast and southwest of the project area.
Willow flycatcher (<i>Empidonax traillii</i>)	Forest Service Sensitive Species	Yes. Areas of Pope Marsh project boundary appear to be suitable habitat for this species. Species has been documented nesting approximately 0.75 mile west of the project area.
MAMMALS		
American marten (<i>Martes americana</i>)	Forest Service Sensitive Species	Yes. Forested portions of project area may be used by martens. Species was observed approximately 1,000 feet southeast of the project area in 1993.

3.4.3.1 Vegetation Communities

Though the project area is heavily used for recreation and includes buildings associated with the resort, the action area is still dominated by coniferous forest. Using vegetation data obtained from the Forest Service's Calveg Geographic Information System program (GIS), the action area includes three vegetation communities: Jeffrey pine, lodgepole pine, and wet meadow. The vegetation structure (density and diameter class) in the action area has been defined using the California Wildlife Habitat Relationship System (CWHR v8.2). Table 3.4-2 below summarizes the density and size classes and approximate acreage of vegetation communities within the project area. These acreages overestimate the actual acreages of these habitats within the action area because the Calveg mapping data was conducted at a scale that doesn't exclude roads, buildings, and other manmade features. Also, the actual foot print of the Proposed Action covers 79 acres; however, the

general project area depicted covers approximately 96 acres. The additional 17 acres consists of paved areas, existing structures, and the area of Pope Marsh mapped as wet meadow, which is outside of the project footprint.

Table 3.4-2. CWHR Habitat Types and Classes within the Project Area

CWHR Habitat Type	CWHR Size Class (diameter at breast height)	CWHR Density Class (% Canopy Closure)	Acres*
Jeffrey pine	2 (0-6")	P (25-40%)	0.4
Jeffrey pine	4 (11-24")	S (10-25%)	5.8
Jeffrey pine	4 (11-24")	P (25-40%)	38.2
Jeffrey pine	4 (11-24")	M (40-60%)	27.3
Jeffrey pine	5 (> 24")	P (25-40%)	3.8
Jeffrey pine	5 (> 24")	M (40-60%)	5.4
Lodgepole pine	4 (11-24")	S (10-25%)	4.3
Wet meadow	-	-	10.9
TOTAL*			95.9

*As discussed above, these acreages and totals overestimate the actual area of these habitats because the data fails to exclude roads and buildings, and covers an area slightly larger than the actual project footprint.

2 = sapling	S = sparse cover
4 = small tree	P = open cover
5 = medium to large tree	M = moderate cover

3.4.3.2 Aquatic Resources

The action area is located within the Camp Richardson Frontal sub-watershed (HUC-7 #16050101040305), which is part of the larger Cascade Creek-Tallac Creek-Taylor Creek Frontal watershed (HUC-6 #160501010403). There is one ephemeral stream passing through the action area from south to north, flowing through Pope Marsh and then east toward Pope Beach. Pope Marsh is mapped as a wet meadow in the Calveg data layer, but is better described as a freshwater emergent marsh with areas of wet meadow and riparian woodland/scrub along its margins. The open water portions of Pope Marsh are outside of the action area.

The ephemeral stream passing through the action area doesn't provide aquatic breeding habitat for sensitive aquatic species because it doesn't sustain flows long enough and doesn't contain pools necessary for breeding, foraging, and cover for these species. Animals may use the stream as a water source during part of the year or as a dispersal corridor between habitats.

3.4.3.3 Bald Eagle

The nearest nesting occurrence for bald eagle is approximately 3 miles northwest of the project area (CNDDDB 2011). This nest has been occupied and successfully produced fledglings off and on since 1997. The Forest Service has identified bald eagle wintering habitat approximately 0.5 mile west of the project site and 1.75 miles east of the site (USDA Forest Service 2009a). Bald eagles have been documented perching within the project area along the Lake Tahoe shoreline (USDA Forest Service 2009a). Bald eagles could potentially nest, forage, and perch in suitable Jeffrey pine within 0.25 mile of open water. Therefore, the Jeffrey pine habitat roughly up to Highway 89 in Camp Richardson

(Classes 4S, 4P, and 4M) represents moderately suitable nesting, foraging, and perching habitat. The wet meadow habitat (Pope Marsh) represents moderate foraging habitat for bald eagle.

Alternative 1 – No Action

Direct and Indirect Effects

Alternative 1 would not result in direct or indirect effects on bald eagle.

Cumulative Effects

Since Alternative 1 would not result in direct or indirect effects on bald eagle, there would be no contribution to cumulative effects on this species.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Disturbance to bald eagles is most critical during nest building, courtship, egg laying, and incubation (Dietrich 1990). If bald eagles nest in or near the project area during implementation, project activities could disturb them and cause nest failure. The Proposed Action would involve the removal of 40 trees with a diameter at breast height (dbh) greater than 30 inches (representing an estimated 2–4% reduction of trees of this size), and up to 910 trees with a dbh less than 30 inches (representing an estimated 19% reduction of trees of this size). Those trees greater than 30 inches dbh represent the most suitable habitat for bald eagle. Though the loss of trees represents a direct effect on moderately suitable nesting, foraging, and perching habitat, this impact on bald eagle habitat would be minimal (2–4% loss of the most suitable habitat within the project area) and would not substantially alter the suitability of the remainder the habitat within the project area for bald eagle use. Furthermore, tree removal activities would not result in a change in the distribution and acreage of current CWHR habitat types within the project area.

No direct or indirect effects on potential nesting bald eagles are expected as there are no historic or recent records of bald eagles nesting in or within 0.5 mile of the project area. Due to the lack of documented nesting, breeding bald eagles are unlikely to experience these disturbance effects. However, individual bald eagles could experience temporary auditory and/or visual disturbance if they perch in or near the project area or fly over or near the project area during project activities. These impacts would persist as long as project actions are taking place at a given location. Once project actions are completed, bald eagles could return to using the action area.

Cumulative Effects

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, is not expected to have a cumulative effect on bald eagles because effects on survival are unlikely and no effects on reproduction are expected to occur because bald eagles are not known to nest within or near (within a ½-mile) the project area and any project related disturbances to roosting eagles within and adjacent to the project area would be temporary and not likely result in a substantial decrease in survivorship or reproductive success.

Alternative 3 – Action Alternative and Alternative 4

Direct and Indirect Effects

Alternative 3 would remove only 8 trees greater than 30 inches dbh (1% reduction) and approximately 789 trees less than 30 inches dbh (16% reduction). Alternative 4 would remove only 4 trees greater than 30 inches dbh (0.5% reduction) and approximately 704 trees less than 30 inches dbh (12% reduction). Though the loss of trees represents a direct effect on moderately suitable nesting, foraging, and perching habitat, this impact on bald eagle habitat would be minimal (on a few of the larger trees) and would not substantially alter the suitability of the remaining habitat within the project area for bald eagle use. Furthermore, tree removal activities would not result in a change in the distribution and acreage of current CWHR habitat types within the project area.

No direct or indirect effects on potential nesting bald eagles are expected as there are no historic or recent records of bald eagles nesting in or within 0.5 mile of the project area. Due to the lack of documented nesting, breeding bald eagles are unlikely to experience these disturbance effects. However, individual bald eagles could experience temporary auditory and/or visual disturbance if they perch in or near the project area or fly over or near the project area during project activities. These impacts would persist as long as project actions are taking place at a given location. Once project actions are completed, bald eagles could return to using the action area.

Cumulative Effects

These alternatives, when combined with past, present, and reasonably foreseeable future actions are not expected to have a cumulative effect on bald eagles because effects on survival are unlikely and no effects on reproduction are expected to occur because bald eagles are not known to nest within or near (within a ½-mile) the project area and any project related disturbances to roosting eagles within and adjacent to the project area would be temporary and not likely result in a substantial decrease in survivorship or reproductive success..

3.4.3.4 California Spotted Owl

California spotted owl has not been documented nesting or using the action area during surveys over the last 30 years (USDA Forest Service 2009a; CNDDDB 2011). The nearest reported detection of California spotted owl is approximately 1.5 miles south of the project area, and the nearest documented nesting is approximately 2 miles southwest of the project area (USDA Forest Service 2009a; CNDDDB 2011). The Protected Activity Center (PAC) and Home Range Core Area (HRCA) for this nest location are outside of the project area and action area. The portion of the project area south of Highway 89 has been surveyed by the Forest Service for spotted owls as recently as 2009 with no owls detected in this area. The CWHR classifies the Jeffrey pine and lodgepole pine communities within the project area as providing low quality habitat for spotted owl reproduction, cover, and foraging.

Alternative 1 – No Action

Direct and Indirect Effects

Alternative 1 would not result in direct or indirect effects on California spotted owl.

Cumulative Effects

Since Alternative 1 would not result in direct or indirect effects on California spotted owl, there would be no contribution to cumulative effects on this species.

Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are discussed together because the nature, scope, and extent of the activities associated with each of them are very similar with regard to potential effects on species of concern and their habitat.

Direct and Indirect Effects

Typically spotted owls may be directly affected in two areas of primary behavior: nesting and roosting, and foraging. Disturbance activities within 0.25 mile of nests or roosts during the breeding season (March 1 through August 15) could cause reproductive failure or increase mortality of young. Because California spotted owls have not been documented roosting, nesting, or foraging within the action area in the past and because the project area represents low quality habitat for these activities, the action alternatives are not likely to directly or indirectly affect spotted owls. The removal of trees within the project area would remove/affect some spotted owl habitat; however, this habitat is low quality and thus these impacts are considered to be minimal. Furthermore, tree removal activities would not result in a change in the distribution and acreage of current CWHR habitat types within the project area. Furthermore, documented nesting is more than 2 miles southwest of the project area. Because the PAC for this nest location is more than 0.5 mile from the project area, project activities are not anticipated to indirectly affect this nest territory.

In the long term, habitat suitability would be expected to increase as a result of the project in large part due to reducing the amount of paved and compacted soils areas and reducing the amount of public access, which would potentially increase the flying squirrel prey base and reduce the level of disturbance

Cumulative Effects

Neither alternative, when combined with past, present, and reasonably foreseeable future actions is expected to have a cumulative effect on California spotted owl because effects on survival are unlikely, and no effects on reproductive activities are expected to occur because California spotted owls have not been documented roosting, nesting, or foraging within the action area in the past and because the project area represents low quality habitat for these activities..

3.4.3.5 Northern Goshawk

According to Forest Service survey data from 1977 to 2009, northern goshawk has not been documented nesting in the action areas but has been detected in the action area, just south of the project area boundary, as recent as 2006. The nearest reported nesting occurrences are approximately 2 miles southeast and southwest of the project area. There are no northern goshawk PACs within the action area (the area within a 0.5 mile radius of project activities). The southwest corner of the project area was surveyed for goshawks in 2008 and 2009. No goshawks were detected during these surveys. According to CWHR (v 8.2) classifications and the Calveg data, most

of the project area represents moderate to highly suitable habitat for northern goshawk, with a little less than half of the project area representing highly suitable nesting habitat.

Alternative 1 – No Action

Direct and Indirect Effects

Alternative 1 would not result in direct or indirect effects on northern goshawk.

Cumulative Effects

Since Alternative 1 would not result in direct or indirect effects on northern goshawk, there would be no contribution to cumulative effects on this species.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Goshawks may be directly affected by project activities in two areas of primary behavior: nesting and foraging. Project-related activities within 0.5 mile of nests during the breeding season (February 15 through September 15) could cause reproductive failure or increase mortality of young. If goshawks are nesting within 0.5 mile of the project area during project implementation, project activities could disturb them and cause nest failure. However, no disturbance to goshawk breeding activities would occur because a 0.5 mile no-disturbance radius would be delineated around any active nest from February 15 through September 15.

The removal of 40 trees greater than 30 inches dbh would remove potential nest trees from the project area; however, heavy public use of the project area likely has and will continue to preclude goshawk from nesting there. Tree removal activities would not result in a change in the distribution and acreage of current CWHR habitat types within the project area.

The project area may be used by goshawk for non-breeding activities, such as foraging and dispersal. Project activities (e.g., tree removal) may preclude goshawks from using the action area; however, this effect would be temporary.

In the long term, habitat suitability would be expected to increase as a result of the project in large part due to reducing the amount of paved and compacted soils areas and reducing the amount of public access, which would potentially increase prey base and reduce the level of disturbance.

Cumulative Effects

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, is not expected to have a cumulative effect on goshawks because effects on survival are unlikely, and no effects on reproduction are expected to occur.

Alternative 3 and Alternative 4

Direct and Indirect Effects

Alternative 3 would remove 8 trees greater than 30 inches dbh and approximately 789 trees less than 30 inches dbh. Alternative 4 would remove only 4 trees greater than 30 inches dbh (0.5%

reduction) and approximately 704 trees less than 30 inches dbh (12% reduction). Though the loss of trees represents a direct effect on suitable nesting, foraging, and perching habitat, this impact on goshawk habitat would be minimal (on a few of the larger trees) and would not substantially alter the suitability of the remainder the habitat within the project area for goshawk use.

No disturbance to goshawk breeding activities would occur because a 0.5 mile no-disturbance radius would be delineated around any active nest from February 15 through September 15.

The project area may be used by goshawk for non-breeding activities, such as foraging and dispersal. Project activities (e.g., tree removal) may preclude goshawks from using the action area; however, this effect would be temporary.

In the long term, habitat suitability would be expected to increase as a result of the project in large part due to reducing the amount of paved and compacted soils areas and reducing the amount of public access, which would potentially increase prey base and reduce the level of disturbance.

Cumulative Effects

These alternatives, when combined with past, present, and reasonably foreseeable future actions, are not expected to have a cumulative effect on northern goshawk because effects on survival are unlikely, and no effects on reproduction are expected to occur.

3.4.3.6 Willow Flycatcher

Willow flycatchers have not been documented within the action area (CNDDDB 2011). Forest Service surveys for willow flycatcher from 2006 to 2008 did not detect willow flycatcher, and surveys in 2008 and 2009 conducted within an area of Truckee Marsh to the east of the project area and within the action area (approximately 0.4 mile from the project boundary) also failed to detect willow flycatchers. Willow flycatchers have been documented nesting approximately 0.75 mile west of the project area along Taylor Creek as recent as 2009. Pope Marsh represents potential habitat for willow flycatchers; however, the portion of the wetland within the project area is too dry to support nesting habitat for willow flycatcher because it lacks standing water into June.

Alternative 1 – No Action

Direct and Indirect Effects

Alternative 1 would not result in direct effects on willow flycatcher; however, continued operation of the campground adjacent to Pope Marsh in its current condition may degrade the habitat over time and cause disturbance to willow flycatchers that could potentially nest and forage in this area.

Cumulative Effects

Because continued levels and patterns of recreation use could degrade habitat in Pope Marsh overtime, Alternative 1, when combined with past, present, and reasonably foreseeable future actions, specifically indirect effects to willow flycatcher identified in the Taylor Creek Environmental Education Center replacement project EA, may contribute to cumulative effects on willow flycatcher but would not likely result in a trend toward federal listing or a loss of viability for willow flycatchers.

Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are discussed together because the nature, scope, and extent of the activities associated with each of them are very similar with regard to potential effects on the willow flycatcher.

Direct and Indirect Effects

Because willow flycatchers spend most of their time during the breeding season within the boundaries of wet meadow habitat, they are unlikely to be affected by actions beyond approximately 50 feet of the edge of wet meadow willow habitat. Therefore, this potential effect is confined to a relatively narrow area along the Pope Marsh SEZ and would be temporary. The action alternatives would not result in an overall change of the current CWHR types and acreages within the project area.

The Proposed Action would reduce the amount of permanently surfaced recreation area in Pope Marsh by approximately 50% and improve the overall hydrology within the project area, which would reduce the transport of sediment into the marsh and establish a more natural hydrologic regime within the watershed. These improvements would likely result in a beneficial effect on willow flycatcher habitat in Pope Marsh.

Cumulative Effects

These alternatives, when combined with past, present, and reasonably foreseeable future actions, are not expected to have a cumulative effect on willow flycatcher because as discussed above potential effects are confined to a relatively narrow area along the Pope Marsh SEZ and would be temporary there effects on survival are unlikely, and no effects on reproduction are expected to occur.

3.4.3.7 American Marten

American martens were documented in the action area in 1993 (CNDDDB 2011). Adults were observed foraging at two different locations within the action area, the nearest occurring within the southeast corner of the project area and the other approximately 0.4 mile south of the project boundary. The nearest record of denning is approximately 6 miles east of the project area at Heavenly Ski Area (CNDDDB 2011). According to the CWHR, habitat for martens in the project area ranges from low to moderate suitability for the forested areas and high suitability for foraging in the wet meadow habitat (Pope Marsh). However, the project area has very little shrub and downed log ground cover that could be used by martens for dispersal, foraging, and rest sites, and a very low density of snags that could provide denning sites. The level of disturbance within the action area likely precludes martens from denning in any available habitats. The most suitable areas are likely those areas along the southern boundary of the project area, where there is a connection to higher quality habitat.

Alternative 1 – No Action

Direct and Indirect Effects

Alternative 1 would not result in direct effects on marten; however, continued operation of the campground in its current condition limits the use of the project area for marten foraging, dispersal, and possibly denning.

Cumulative Effects

Alternative 1, when combined with past, present, and reasonably foreseeable future actions, may contribute to cumulative effects on marten because of the continued decline of potential dispersal and foraging habitat within the campgrounds but would not likely result in a trend toward federal listing or a loss of viability. Specifically, if the Angora Fire Restoration project and the South Shore Fuel Reduction project were to occur at the same time there could temporarily be displaced martens within the South Shore area.

Alternative 2 – Proposed Action

Direct and Indirect Effects

The removal of 40 trees greater than 30 inches dbh would remove trees that have potential to serve as den sites; however, martens have not been documented denning within the project area or the action area.

Project activities may temporarily preclude martens from using the project area for foraging, resting, and dispersal; however, because the project area provides low quality habitat this effect would be minimal. The Proposed Action would not result in an overall change of the current CWHR types and acreages within the project area. The Proposed Action would in the long term improve habitat condition for marten by reducing the footprint of the campground, improving vegetative ground cover, and retaining downed logs within the project area, all of which would improve resting, foraging, and dispersal habitat.

In the long term, habitat suitability would be expected to increase as a result of the project in large part due to reducing the amount of paved and compacted soils areas and reducing the amount of public access, which would potentially increase prey base and reduce the level of disturbance.

Cumulative Effects

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, is not expected to have a cumulative effect on marten because effects on survival are unlikely and no effects on reproductive activities are expected to occur.

Alternative 3 and Alternative 4

Direct and Indirect Effects

Alternative 3 would result in the removal of 8 trees greater than 30 inches dbh and Alternative 4 would result in the removal of 4 trees greater than 30 inches dbh that have potential to serve as den

sites; however, martens have not been documented denning within the project area or the action area.

Project activities may temporarily preclude martens from using the project area for foraging, resting, and dispersal; however, because the project area provides low quality habitat this effect would be minimal. The Proposed Action would not result in an overall change of the current CWHR types and acreages within the project area. Alternative 3 would in the long term improve habitat condition for marten by reducing the footprint of the campground, improving vegetative ground cover, and retaining downed logs within the project area, all of which would improve resting, foraging, and dispersal habitat.

In the long term, habitat suitability would be expected to increase as a result of the project in large part due to reducing the amount of paved and compacted soils areas and reducing the amount of public access, which would potentially increase prey base and reduce the level of disturbance.

Cumulative Effects

These alternatives, when combined with past, present, and reasonably foreseeable future actions, is not expected to have a cumulative effect on marten because effects on survival are unlikely and no effects on reproductive activities are expected to occur.

3.4.4 Determinations

The BA/BE (Project Record Document E-5) documents the determinations for all potential species considered in this analysis. The following table summarizes the determinations.

Table 3.4-3. Threatened, Endangered, and Sensitive Species for the Lake Tahoe Basin Management Unit, and Effect Determinations for Project-Level Analysis for the Camp Richardson Project

Species	Special Status	*Determination
Invertebrates		
Great Basin rams-horn	Forest Service Sensitive Species	NE
Fish		
Lahontan cutthroat trout	Federally Threatened	NA
Delta smelt	Federally Threatened	NA
Central Valley steelhead	Federally Threatened	NA
Lahontan Lake tui chub	Forest Sensitive Species	NE
Amphibians		
Yosemite Toad	Federal Candidate	NA
Sierra Nevada (mountain) yellow-legged frog	Forest Service Sensitive Species	NE
Northern leopard frog	Forest Service Sensitive Species	NE
Birds		
Bald Eagle	Forest Service Sensitive Species	MANL
California Spotted Owl	Forest Service Sensitive Species	MANL
Northern Goshawk	Forest Service Sensitive Species	MANL
Willow Flycatcher	Forest Service Sensitive Species	MANL

Species	Special Status	*Determination
Great Gray Owl	Forest Service Sensitive Species	NE
Mammals		
Pacific fisher	Federal Candidate	NA
Sierra Nevada red fox	Forest Service Sensitive Species	NE
American marten	Forest Service Sensitive Species	NE
California wolverine	Forest Service Sensitive Species	NE
Townsend's big-eared bat	Forest Service Sensitive Species	NE
*Federally Listed Species		
NA - Will not affect the species or its designated critical habitat.		
NLAA - May Affect Not Likely to Adversely Affect the species or its designated critical habitat.		
LAA - May affect and is likely to adversely affect the [name of species] or its designated critical habitat		
Sensitive Species		
NE - Will not affect the species.		
MANL - May affect individuals, but is not likely to result in a trend toward federal listing or loss of viability.		
MALT - May affect individuals, and is likely to result in a trend toward federal listing or loss of viability.		

3.4.5 Management Indicator Species

Management indicator species (MIS) for the LTBMU are identified in the 2007 Sierra Nevada Forests Management Indicator Species (SNF MIS) Amendment (USDA Forest Service 2008). The habitats and ecosystem components and associated MIS analyzed for the project were selected from this list of MIS. Three MIS habitats—wet meadow, riparian, and mid seral coniferous forest—would be affected by the Camp Richardson Project and are carried forward in this analysis, which will evaluate the direct, indirect, and cumulative effects of the Proposed Action and alternatives on these habitats. The MIS selected for project-level MIS analysis for the Camp Richardson Project are:

- Yellow warbler (*Dendroica petechia*) (riparian habitat)
- Pacific tree frog (*Pseudacris regilla*) (wet meadow habitat)
- Mountain quail (*Oreortyx pictus*) (mid seral coniferous forest habitat)

3.4.5.1 Riparian Habitat (Yellow Warbler)

This species is usually found in riparian deciduous habitats (cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland) in summer (CDFG 2008). Yellow warbler is dependent on both meadow and non-meadow riparian habitat in the Sierra Nevada (Siegel and DeSante 1999). There is no riparian habitat mapped within the project area; however, information obtained from surveys of the project area indicate that riparian habitat dominated by willows (*Salix* spp.) occur within the wet meadow Calveg data layer, which is predominantly the Pope Marsh SEZ. The exact acreage of this habitat, CWHR size classes, deciduous

canopy cover, and total canopy cover is unknown at this time because the Calveg vegetation mapping was not conducted at a scale small enough to differentiate the riparian habitat from the wet meadow habitat.

Alternative 1 – No Action

Direct and Indirect Effects

No direct or indirect impacts on riparian habitat would occur.

Cumulative Effects

No changes to riparian habitat would occur as a result of the No Action Alternative; therefore, there are no cumulative effects.

Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are discussed together because the nature, scope, and extent of the activities associated with each of them are very similar with regard to potential effects on riparian habitat and the associated yellow warbler.

Direct and Indirect Effects

The direct effects on riparian habitat would be minimal, consisting of the potential removal of a few willow trees to accommodate campground reconfiguration. Riparian habitat is anticipated to receive beneficial effects following the completion of the proposed or alternative action. Improvements to hydrology (increased onsite infiltration) and soils (decompaction) would improve conditions in the local water table, which would benefit riparian vegetation by having a prolonged delivery of subsurface water.

Acres of riparian habitat. The acreage of riparian habitat within the project area is not expected to change. A few willow trees might be removed during the campground reconfiguration; however, it is not anticipated that this would affect the overall acreage of this habitat. Campsites, campground roads, and user-created trails in the Pope Marsh SEZ would be closed, and riparian vegetation would be restored. Riparian vegetation adjacent to the campground includes coniferous riparian, moist meadow, and wet meadow. Impervious coverage in the SEZ would be reduced from 0.27 to 0.14 acre by the proposed or alternative action. Understory herbaceous and shrub cover would recover beyond existing conditions as native plants are reestablished after two growing seasons.

Acres of riparian habitat with changes in deciduous canopy cover. At this time, no projections in acres of riparian habitat with changes in deciduous canopy cover are available; however, a few willow trees might be removed during the campground reconfiguration that could slightly reduce deciduous canopy cover.

Acres of riparian habitat with changes in total canopy cover. At this time, no projections in acres of riparian habitat with changes in total canopy cover are available; however, a few willow trees might be removed during the campground reconfiguration, which could slightly reduce total canopy cover.

Acres of riparian habitat with changes in CWHR size class. At this time, no projections of changes in CWHR size classes are available. The potential removal of a few willow trees would not likely change the overall size class for this habitat type. The minor loss of a few willow trees would not result in a

change to the 29,000 acres of riparian habitat on national forest system (NFS) lands in the Sierra Nevada and, therefore, would not alter the existing trend in the habitat, nor would it lead to a change in the distribution of yellow warbler across the Sierra Nevada bioregion.

Cumulative Effects

The spatial scale of cumulative effects includes riparian habitat adjacent to or within ½ mile of the project area. The alternatives are anticipated to improve the quality of riparian habitat in Pope Marsh but not likely result in a change in the quantity of this habitat at the bio-regional scale. None of the projects considered for cumulative effects is expected to affect the quality and quantity of riparian habitat. These projects and the alternatives considered above would not substantially alter the amount of riparian habitat at the bio-regional scale and thus not result in a cumulative effect on riparian habitat.

3.4.5.2 Wet Meadow Habitat (Pacific Tree Frog)

The Calveg data indicates that there are 10.9 acres of wet meadow in the project area; however, this acreage appears to include areas of riparian vegetation and Jeffrey pine, so the actual amount of this habitat is unknown

Acres with changes in CWHR herbaceous height classes. This habitat factor is discussed in general qualitative and quantitative terms (i.e., increases and decreases). It is assumed that the wet meadow in the project area consists of a heterogeneous distribution of tall and short herb height classes.

Acres with changes in CWHR herbaceous ground cover classes. This habitat factor is discussed in general qualitative and quantitative terms (i.e., increases and decreases). It is assumed that the wet meadow in the analysis area consists of a heterogeneous distribution of ground cover classes.

Changes in meadow hydrology. Past land uses (e.g., fire suppression, campground development, and recreation) in the wet meadow and vicinity have likely altered the meadow's ecological function. These alterations might have caused the conversion of some wet meadows into drier meadows, which are susceptible to conifer encroachment.

Alternative 1 – No Action

Direct and Indirect Effects

No direct or indirect impacts on wet meadow habitat would occur.

Cumulative Effects

No changes to wet meadow habitat would occur as a result of the No Action Alternative; therefore, there are no cumulative effects.

Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are discussed together because the nature, scope, and extent of the activities associated with each of them are very similar with regard to potential effects on wet meadow habitat and associated species of concern.

Direct and Indirect Effects

The direct effects on wet meadow habitat would be minimal, consisting of temporary disturbance to accommodate campground reconfiguration. Wet meadow habitat is anticipated to receive beneficial effects following the completion of the proposed or alternative action. It is anticipated that improvements to hydrology (increase onsite infiltration) and soils (decompaction) would improve conditions in the local water table, which would benefit wet meadow vegetation by having a prolonged retention of subsurface water. Furthermore, the proposed or alternative action would reduce the amount of developed area (campgrounds, trails etc) within the Pope Marsh SEZ (much of which is mapped as wet meadow) from 11,959 square feet to 5,971 square feet.

Acres of wet meadow habitat. The acreage of mapped wet meadow habitat within the project area is expected to slightly increase (+ 5,971 sq. ft. or 0.14 acre) once the campground is reconfigured. This area would be revegetated with the appropriate meadow vegetation.

Acres with changes in CWHR herbaceous height classes. The proposed or alternative action is expected to improve meadow conditions by reducing the campground footprint within the Pope Marsh SEZ, improving soil conditions (decompaction) and hydrology (increased infiltration), and reducing user-created trails and access to Pope Marsh, all of which are anticipated to improve the quality of wet meadow habitat by creating a more natural distribution of tall and short herbaceous height classes.

Acres with changes in CWHR herbaceous ground cover classes. The proposed or alternative action is expected to improve meadow conditions by reducing the campground footprint within the Pope Marsh SEZ, improving soil conditions (decompaction) and hydrology (increased infiltration), and reducing user-created trails and access to Pope Marsh, all of which are anticipated to improve the ground cover in the wet meadow.

Changes in meadow hydrology. Hydrology in the wet meadow is anticipated to improve following the completion of the proposed or alternative action. Increased infiltration in areas upslope of the wet meadow would likely result in improved groundwater conditions (longer retention times, subsurface delivery of nutrients, etc.) that would improve meadow hydrology.

The improvements to wet meadow habitat (increased quality and increase in 0.14 acre of habitat) as a result of the proposed or alternative action, while positive and potentially beneficial to Pacific tree frog at the scale of the project, and possibly the Lake Tahoe Basin, would not alter the existing stable trend for wet meadow habitat. Therefore, the effects of the Camp Richardson Project would not alter the existing stable trend in the habitat for Pacific tree frog across the Sierra Nevada bioregion.

Cumulative Effects

The spatial scale of cumulative effects includes riparian habitat adjacent to or within ½ mile of the project area. Overall changes in wet meadow habitat due to cumulative effects of the proposed or alternative action and other past, present, and foreseeable future projects would be positive due to improvements in hydrology and soils, and the reduction in the campground footprint within the Pope Marsh SEZ. These alternatives would result in a beneficial contribution to wet meadow habitat at the bio-regional scale.

3.4.5.3 Mid Seral Coniferous Forest Habitat (Mountain Quail)

Mid seral coniferous forest habitat primarily consists of small trees (11"–23.9" dbh). The mountain quail is found particularly on steep slopes, in open, brushy stands of conifer and deciduous forest and woodland, and in chaparral; it may gather at water sources in the summer, and broods are seldom found more than 0.8 km (0.5 mi) from water.

Alternative 1 – No Action

Direct and Indirect Effects

No direct or indirect impacts on mid seral coniferous forest habitat would occur.

Cumulative Effects

No changes to mid seral coniferous forest habitat would occur as a result of the No Action Alternative; therefore, there are no cumulative effects.

Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are discussed together because the nature, scope, and extent of the activities associated with each of them are very similar with regard to potential effects on mid seral coniferous forest habitat and the associated mountain quail.

Direct and Indirect Effects

The Proposed Action would involve the removal of 40 trees with a dbh greater than 30 inches (representing an estimated 2-4% reduction of trees of this size), and up to 910 trees with a dbh less than 30 inches (representing an estimated 19% reduction of trees of this size). Alternative 3 would remove only 8 trees greater than 30 inches dbh (representing less than 1% of trees of this size) and approximately 789 trees less than 30 inches dbh (representing an estimated 16% reduction of trees of this size). Alternative 4 would remove only 4 trees greater than 30 inches dbh (0.5% reduction) and approximately 704 trees less than 30 inches dbh (12% reduction). Though the loss of trees represents a direct effect on mid seral coniferous forest, this impact would be minimal and would not substantially alter the remainder the habitat within the project area. Furthermore, tree removal activities would not result in a change in the distribution and acreage of current CWHR habitat types within the project area.

Changes to mid seral coniferous forest habitat. The acreage of mid seral coniferous forest habitat within the project area is not expected to change. The forest thinning actions are not predicted to change the CHWR size class and canopy cover within the project area. The thinning of mid seral coniferous forest would not result in an overall loss in the acreage of this habitat type; therefore, the loss of at most 950 trees in the Camp Richardson project area out of 2,766,000 acres of mid seral coniferous forest habitat in the Sierra Nevada would not alter the existing trend in the habitat, nor would it lead to a change in the distribution of mountain quail across the Sierra Nevada bioregion.

Cumulative Effects

The spatial scale of cumulative effects includes mid seral coniferous forest habitat adjacent to or within ½ mile of the project area. The alternatives are anticipated to improve the quality of mid

seral coniferous habitat but would not likely result in a change in the quantity of this habitat at the bio-regional scale (27 acres thinned out of 2,766,000 acres within the Sierra Nevada). Thus these alternatives would not result in a cumulative effect on this habitat.

3.4.6 Tahoe Regional Planning Agency Species and Habitat Analysis

The TRPA Regional Plan created and adopted environmental threshold carrying capacities to help maintain and protect natural resources in the Lake Tahoe Basin. The LTBMU LRMP directs that projects be guided by both the LRMP and the TRPA Regional Plan to support attainment of environmental thresholds. TRPA thresholds refer to both habitats and species of interest. This section responds to LRMP direction by summarizing the consistency of the project's effects with relevant thresholds and the nature of potential effects on TRPA species of interest. An impact analysis report was prepared for the project (Project Record Document E-6).

Table 3.4-4 shows TRPA special-interest species population site thresholds, disturbance zones, and the estimated potential of the project to have an impact on the threshold standard.

Table 3.4-4. TRPA Threshold Standards for Wildlife (Special-Interest Species)

Species	Population Sites in Action Area 1	Disturbance Zone (Miles)	Potential to Impact Threshold Standard?
Northern goshawk (<i>Accipiter gentiles</i>)	0	0.50	no
Osprey (<i>Pandion haliaeetus</i>)	0	0.25	no
Bald eagle, winter (<i>Haliaeetus leucocephalus</i>)	0	mapped	no
Bald eagle, nesting	0	0.50	no
Golden eagle (<i>Aquila chrysaetos</i>)	0	0.25	no
Peregrine falcon (<i>Falco peregrinus anatum</i>)	0	0.25	no
Waterfowl	1	mapped	yes
Mule deer (<i>Odocoileus hemionus</i>)	critical fawning habitat	modeled habitat	no

3.4.6.1 Wildlife Special-Interest Species

Standard: Provide a minimum number of population sites and disturbance zones for TRPA-listed species.

Indicator: The minimum number of population sites and disturbance zones maintained as determined by inspection by qualified experts.

Northern Goshawk

Direct, indirect, and cumulative effects on goshawks and their habitat are discussed for each project alternative in Section 3.4.3.5. The project would not have an impact on any goshawk disturbance zone. There is a minor potential for disturbance to foraging individuals during construction. Habitat

conditions would be improved in the long term because of an improved goshawk prey base. The minor amount of thinning from tree removal would allow more light to reach the forest floor, which would enhance the understory herbaceous and shrub cover once native plants are reestablished after two growing seasons. Compacted soils and public access would be reduced, all downed logs would be retained, and vegetative diversity would be improved. Snags would only be removed for public safety. These effects would minimize or avoid impacts on the prey base for goshawks. No limited operating periods currently apply, but would be implemented around active nests as determined by the project biologist. There may be a low potential for this project to have an impact on individuals, but there is no chance for this project to have an impact on the LTBMU metapopulation or the R5 population, or at the species level.

Osprey

There is suitable habitat consisting of dense forest with supercanopy trees within 1 mile of large lakes and streams with abundant fish prey. There are no historic nests in the action area, or current nests according to 2008 and 2009 surveys. Standing osprey nest trees are buffered by 0.25 mile to describe the osprey disturbance zone. Osprey nests often occur in clusters, because breeding pairs may attempt to nest in multiple adjacent trees over the years. There is an ample supply of snags across the landscape for wildlife habitat. LOPs would be implemented as necessary as described in Chapter 2. The project would not have an impact on any osprey disturbance zone. The removal of trees would improve osprey habitat by encouraging the growth of supercanopy trees. There may be a low potential for this project to have an impact on individuals, but there is no chance for this project to have an impact on the LTBMU metapopulation or the R5 population, or at the species level.

Bald Eagle

Direct, indirect, and cumulative effects on bald eagles and their habitat are discussed for each project alternative in Section 3.4.3.3. The project would not affect bald eagle wintering habitat because there is no wintering habitat in the project action area. The impact on bald eagle habitat would be minimal because large trees greater than 30 inches dbh would only be reduced by 2-4% at the most. Tree removal would improve bald eagle habitat in the long run by encouraging the growth of supercanopy trees. There would be no change in the distribution or acreage of CWHR types. No known bald eagle nest occurs within the action area because of the high levels of human disturbance, and no direct or indirect effects on potential nesting bald eagles are expected. No limited operating periods currently apply, but would be implemented around active nests as determined by the project biologist. Individual bald eagles could be disturbed during project activities but bald eagles could return once the project is completed. There may be a low potential for this project to have an impact on individuals, but there is no chance for this project to have an impact on the LTBMU metapopulation or R5 population, or at the species level. The Proposed Action is consistent with the Recovery Plan for the Pacific Bald Eagle.

Golden Eagle

The project area has no suitable golden eagle habitat, which consists of open coniferous forest especially in mountainous regions, with abundant medium-sized small mammal prey. No known golden eagle nest or disturbance zone occurs within the action area of the gently sloping campground. LOPs would be implemented as described in Chapter 2. No impacts on golden eagle

nests or disturbance zones are expected because there is no suitable habitat in the action area. The project would not affect disturbance zones or attainment of population thresholds.

Peregrine Falcon

The project area has no suitable peregrine falcon habitat, which consists of cliffs near meadows or wetlands with abundant avian prey. No known peregrine falcon nest or disturbance zone occurs within the action area of the gently sloping campground. No impacts on peregrine falcon nests or disturbance zones are expected, because there is no suitable habitat in the action area. Design features (LOPs) would minimize adverse impacts on individual peregrine falcons (if discovered). The project would not affect disturbance zones or the attainment of population thresholds.

Waterfowl

There is suitable waterfowl habitat where portions of the project area occur in the Pope Marsh waterfowl disturbance zone. BMPs would improve water quality and wetland habitat. Disturbance effects would likely include flushing of individuals, rather than affecting adult or juvenile survival. Disturbance from the project activity would not extend beyond existing road traffic and commercial, residential, and recreational activities. There is minor potential for disturbance to individuals during construction, and improved habitat conditions in the long term are anticipated. Campsites, campground roads, and user-created trails in the Pope Marsh SEZ would be closed, and riparian vegetation would be restored. There would be no change in acres of waterfowl population sites because no wetlands would be drained. There may be a low potential for this project to have an impact on individuals, but there is no chance for this project to have an impact on the LTBMU metapopulation or R5 population, or at the species level.

Mule Deer

There would be no impact on mule deer fawning habitat because there is no suitable habitat in the action area. The project would not affect disturbance zones or the attainment of population thresholds.

3.4.6.2 Habitats of Special Significance

W-2 Wildlife Threshold Standard. A non-degradation standard will apply to significant wildlife habitat consisting of deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations. To evaluate this standard, Standard SC-2 (Soil Conservation) has been reviewed. The SC-2 Threshold Standard Indicator states to preserve existing natural functioning SEZs in their natural hydrological condition, restore all disturbed SEZs in undeveloped, unsubdivided lands, and restore 25% of the SEZ lands that have been identified as disturbed, developed, or subdivided, to attain a 5% total increase in the naturally functioning SEZ land (TRPA 1996, 2002). The project is immediately adjacent to the Pope Marsh SEZ, and minor positive project impacts would occur within the SEZ.

Campsites, campground roads, and user-created trails in the Pope Marsh SEZ would be closed, and riparian vegetation would be restored. Riparian vegetation adjacent to the campground includes coniferous riparian, moist meadow, and wet meadow. Impervious coverage in the SEZ would be reduced from 0.27 to 0.14 acres by both the proposed and alternative actions. Ground and vegetation disturbance would be minimized to avoid the loss of native vegetation and wildlife

habitat. Understory herbaceous and shrub cover would recover beyond existing conditions as native plants are reestablished after two growing seasons. Native plant communities and their historic disturbance patterns are the fundamental building blocks that shape faunal communities. Riparian areas are often used as travel corridors for wildlife because the thick vegetation provides cover to conceal movement. Riparian habitat is the most important habitat type for California land birds (Riparian Habitat Joint Venture 2004). The wildlife threshold standard would be met, because non-degradation is expected.

3.4.6.3 Impact Analysis for Fisheries Threshold Standards and Indicators

Lake Habitat

Standard: Achieve the equivalent of 5,948 total acres of excellent lake fish habitat.

Indicator: Physical disturbance of rocky (spawning and feed/cover habitats) substrate (acres).

The project does not have the potential to degrade fish habitat or substrate conditions. The project is not expected to cause a measurable increase in sedimentation, decrease in lake shoreline cover, or increase in water temperatures on a watershed level, because water quality BMPs would be implemented to minimize short-term erosion and sedimentation. Silt fences would be installed during construction. Dirt roads and campground spurs would be paved to reduce airborne dust and sedimentation reaching Lake Tahoe. Stormwater would be infiltrated on site at road shoulders, micro-basins, and swales. Gullies would be regraded to disperse and infiltrate stormwater. Compacted soil would be tilled and mulched with pine needles, and slash would be masticated to protect the soil and discourage pedestrian travel. Disturbed areas would be revegetated with native plants such as Lewis flax, silvery lupine, and blue wild rye. Impervious coverage would be reduced from the existing 26.3 acres to 21.0 acres in the Proposed Action, and 18.4 acres in Alternative 3.

Stream Habitat

Standard: Maintain 75 miles of excellent, 105 miles of good, and 38 miles of marginal stream habitat as indicated by the Stream Habitat Quality Overlay map (1997, as cited in Project Record Document E-6).

Indicator: Miles of stream habitat in the various categories based on field investigations of habitat. A qualified fisheries biologist using empirical data should make determinations of stream quality.

The project would not impact stream habitat quality. The project is not expected to cause a measurable increase in sedimentation, decrease in riparian cover, or increase in water temperatures on a watershed level because there are no perennial streams in the action area. The ephemeral stream that flows during spring snowmelt through the campground into Pope Marsh does not provide aquatic breeding habitat because it does not sustain flows long enough or provide pools necessary for breeding, foraging, or cover. Animals may use the stream as a water source during part of the year, or as a dispersal corridor between habitats. Impervious coverage in the SEZ would be reduced from 0.27 to 0.14 acre by both the proposed and alternative actions. BMPs would protect stream habitat quality.

Instream Flow

Standard: Until in-stream flow standards are established in the Regional Plan to protect fisheries values, a non-degradation standard will apply to instream flows.

Indicator: Instream flows evaluated by the use of an instream beneficial use assessment, such as the type established by Title 23, Section 670.6, of the California Administrative Code.

The project would not include new construction or maintenance of a water diversion nor would it have the potential to affect instream flows.

Lahontan Cutthroat Trout

Standard: It will be the policy of the TRPA Governing Board to support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.

Indicator: (TRPA 1982): Threshold would be achieved with the successful establishment of a Lahontan cutthroat trout population.

There are no cutthroat trout populations at or adjacent to the project area that could be affected by the project. There is no suitable lake and stream habitat in the action area that is free of predatory trout. Lahontan cutthroat trout occurs 0.9 mile upstream of the campground, where they are stocked for sport fishing at Fallen Leaf Lake. The project would not involve direct effects on lake habitat, stream habitat, and instream flow. Indirect effects would be avoided through BMPs.

3.4.7 Analytical Conclusions

None of the alternatives would have a significant adverse effect on any wildlife or aquatic species of concern. The area has been adequately surveyed for existing populations and for suitable habitat. The project design features will ensure that effects to wildlife will be minimized.

3.5.1 Introduction and Affected Environment

This section discusses the existing condition and potential effects to the coniferous forest and associated plant species of interest that occur on the project site, as well as invasive species. The analysis is based upon site observations, site-specific vegetative surveys, as well as the Camp Richardson Botanical Evaluation for Plants (Project Record Document E-1) and the Camp Richardson Noxious Weed Risk Assessment (Project Record Document E-4). The cumulative effects analysis was bound in time to 15 years in the future for foreseeable future actions. This approximates the time frame over which conditions due to the action alternatives could be reasonably estimated. The area considered for the cumulative effects analysis is the immediate project area and projects adjacent to the area. All projects listed in section 3.0 were reviewed for their potential to contribute to significant cumulative effects.

3.5.2 Coniferous Vegetation

The project site is dominated primarily by a dry upland vegetative plant community of an open second growth Jeffery pine (*Pinus jeffreyi*) stand with almost no understory of native plants, due to the heavy recreational use over a long period of time. Based on vegetation data obtained from the Forest Service's Calveg GIS program and field validation, the project area is dominated by the Jeffrey pine plant community.

The large majority of the trees range from 11 to 24 inches dbh and are primarily Jeffrey pine, with scattered incense cedar (*Calocedrus decurrens*), lodgepole pine (*Pinus contorta*), and white fir (*Abies concolor*). Based on a site survey of trees (Project Record Document E-2), there are approximately 5,887 conifer trees, averaging 75 trees per acre. Of the estimated 5,887 trees, approximately 1,035 (16%) are 30 inches or larger dbh. There are no late seral old-growth ecosystems although there are scattered remnant old-growth trees.

The overall tree density is average for the site productivity, as the existing infrastructure (roads, buildings, and recreational sites) occupies approximately 1/3 of the surface. There is good coniferous cover in the remainder of the area provided by the 5,887 trees. Based on an average diameter of 32 inches for trees larger than 30 inches dbh, and 16 inches for trees less than 30 inches dbh, the average basal area is approximately 158 square feet per acre. This stocking level represents adequate stocking for this growing site. Water is generally plentiful for tree growth; however, in very dense pockets of conifer vegetation, soil moisture can limit growth during the late summer and early fall months prior to the rainy season. An observed increase in tree mortality has occurred within the campground area in the last several years. This has been partially attributed to soil compaction from high use and numerous unmanaged routes and user trails.

Canopy cover is estimated at 50%. Of the 79 acre project area, only 0.3 acre is occupied by the vegetation in the stream environment zone associated with Pope Marsh. Understory species include *Arctostaphylos patula*, *Ribes* spp., and *Ceanothus* spp. (Project Record Document E-3). Forbs and

grasses are also scattered throughout the project area. These understory species are poorly represented due to the extremely heavy pedestrian and vehicle traffic that has had an impact on the site for several decades. The resulting compacted soils and human use have made it difficult for understory vegetation to become and remain established. There are very few dead standing trees in the project area because they have been removed over time for the health and safety of recreational users.

The area between the “RV” and “Eagle’s Nest” campground areas include dumped fill soil materials as well as dumped concrete and metal. Additionally, this area contains user created bicycle trails over the dumped soil material. Some vegetation in this area has been negatively affected by this dumped material, while other vegetation is unaffected by human activity.

3.5.2.1 Alternative 1 – No Action

Direct and Indirect Effects

There would be no direct effects to the coniferous and common understory species found on the project site. It is expected that an indirect effect will be an increase in tree mortality in and around areas that are compacted if no action is taken. This will result in the creation of hazard trees within a highly used area. Hazard trees will continue to be removed/mitigated under the No Action Alternative.

Cumulative Effects

Since there would be no direct or indirect effects, there would be no cumulative effects associated with this alternative.

3.5.2.2 Alternative 2 – Proposed Action

Direct and Indirect Effects

There would be an estimated 910 conifer trees less than 30 inches dbh and an estimated 40 trees equal to or larger than 30 inches dbh that would be removed in order to allow for the BMP retrofit and modifications to the recreational and transportation infrastructure. This represents approximately 16% of the coniferous trees within the 79-acre project site. This removal would lead to a short-term reduction in canopy cover; however, over the long-term (approximately 10 to 20 years), there would likely be an improvement in tree health as the remaining trees respond to an increase in growing space and available soil nutrients and water. This positive response would make the remaining trees less susceptible to mortality from future drought, possible crownfire, or insect infestations. Although the removal of the trees would contribute towards a short-term reduction in crownfire potential from wildfires, this effect is incidental to meeting the purpose and need of the project. The lack of understory vegetation and high level of existing infrastructure already lead to a low risk of crownfire. In the future, as the trees once again grow denser, the beneficial effects in tree health and susceptibility to fire and insects will diminish as the trees once again become denser and there is increased competition for moisture, sunlight, and nutrients.

There is not expected to be any measureable change to the common native understory vegetation because the current heavy recreational use is expected to continue. Pockets of native vegetation

would be planted and protected to provide for increased recreational screening, and these (once they become well-established) would provide an increase in native vegetation.

Cumulative Effects

The only project that would also measurably affect the coniferous vegetation is the South Shore Fuel Reduction Project. The South Shore Fuels Reduction Project is proposing tree thinning on approximately eight acres within the campground area. This represents approximately 10% of the Camp Richardson project area. The area is located along the southern boundary in the southwest quadrant of the project area in the utility hook-up campground area (see Figure 2-1). It is estimated that four of the eight acres would occur within areas also included in the proposed infrastructure of the Camp Richardson project. The remaining four acres would occur in areas not affected by any of the action alternatives. The South Shore project would further slightly reduce the number of trees in the campground and canopy cover, however the thinning is focused on the removal of understory trees that represent ground and ladder fuels in the event of a wildfire. No trees larger than 30 inches dbh are expected to be removed. The South Shore project, in conjunction with the direct and indirect effects of this project, would not contribute to cumulative effects.

3.5.2.3 Alternative 3

Direct and Indirect Effects

There would be an estimated 789 conifer trees less than 30 inches dbh and an estimated 8 trees equal to or larger than 30 inches dbh that would be removed in order to allow for the modifications to the recreational and transportation infrastructure. This represents approximately 13% of the coniferous trees within the 79-acre project site. This removal would have minimal effects on overall tree health. There would be an immediate reduction in canopy cover; however, over the next estimated 10 to 20 years, there would likely be a slight improvement in tree health as the remaining trees respond to an increase in growing space and available soil nutrients and water. This positive response would make the remaining trees less susceptible to mortality from future drought, possible crown fires, or insect infestations. Over time, this positive effect will diminish as the trees once again become denser and there is increased competition for site resources such as moisture, sunlight, and nutrients.

Pockets of native vegetation would be planted and protected to provide for increased recreational screening, and these (once they become well-established) would provide an increase in native vegetation.

Cumulative Effect

The cumulative effects would be the same as under Alternative 2.

3.5.2.4 Alternative 4

Direct and Indirect Effects

The effects are substantively the same as Alternative 3. There would be only a very slight reduction in the numbers of conifer trees removed. There would be an estimated 704 conifer trees less than 30 inches dbh and an estimated four (4) trees equal to or larger than 30 inches dbh that would be

removed in order to allow for the modifications to the recreational and transportation infrastructure. This represents approximately 12% of the coniferous trees within the 79-acre project site. This removal would have minimal effects on overall tree health as discussed under Alternative 3.

Cumulative Effect

The cumulative effects would be the same as under Alternative 2.

3.5.3 Threatened, Endangered, and Sensitive Plant Species and Tahoe Regional Planning Agency Special-Interest Plant Species

The most recent species list for the LTBMU was obtained from the USFWS, Sacramento Fish and Wildlife Office website, on January 25, 2011, which had last been updated on April 29, 2010. This list fulfills the requirements of the USFWS to provide a current species list pursuant to Section 7 of the ESA. The LTBMU does not currently support any plant species listed as threatened or endangered under the ESA; however, Tahoe yellow cress (*Rorippa subumbellata*), a candidate species for listing, does occur on lands administered by the LTBMU and is in the vicinity of the Proposed Action. Consultation with the USFWS for candidate species is not required under the ESA.

A pre-field review of existing information from the LTBMU flora atlases and available GIS coverage was performed to evaluate the extent of potential habitat and known populations of sensitive plants within the proposed project areas. The Jepson Manual (Hickman 1993) supplied taxonomy and nomenclature as well as information regarding the distribution and habitats for many of the species identified on site. Additional references included A California Flora and Supplement (Munz and Keck 1968), A Flora of Marshes of California (Mason 1969), and Manual of Grasses of the United States (Hitchcock 1971). Other literature reviewed include Lake Tahoe Watershed Assessment (USDA Forest Service 2000b), Meadows in the Sierra Nevada of California (Ratliff 1985), and Status of the Sierra Nevada (Sierra Nevada Ecosystem Project 1996).

Botanical surveys conducted in the proposed project areas focus on species with potential habitat; however, surveys are floristic in nature and attempts are made to identify all plants encountered in the field. Many species have specific habitat preferences (such as wet meadows, fens, granite scree), and botanists search for these as well as their constituent species. Botanical surveys were conducted in the project area in June and July, 2005; June 17, 2010; and June 25 to July 12, 2010.

There are no occurrences of threatened or endangered or sensitive botanical species in the project area. Table 1 of the Biological Evaluation lists three species of concern as either occurring or having a potential to occur within the project area.

- Tahoe yellow cress (*Rorippa subumbellata*). This is a Forest Service sensitive species and TRPA special-interest species. There are no known populations in the project area, however the project area contains potential habitat.
- Branched collybia (*Dendrocollybia racemosa*). This is a Forest Service sensitive species. There are no known populations in the project area, however the project area contains potential habitat.

- Washoe Trail rock cress (*Arabis rectissima* var. *simulans*). Although this species is not a Forest Service sensitive species, it is a special-interest species and, therefore, is addressed in this document. This species was identified within the project area during botanical surveys conducted in June of 2010. This occurrence is northwest of the intersection of Jameson Beach Road and Highway 89. The remainder of the project area represents potential habitat for this species.

3.5.3.1 Alternative 1 – No Action

Direct and Indirect Effects

There would be no direct or indirect effects associated with taking no action.

Cumulative Effects

Since there would be no direct or indirect effects, there would be no cumulative effects associated with this alternative.

3.5.3.2 Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are included in this section, as the overall nature, scope, and intensity of the actions are not substantively different between the alternatives and hence the direct, indirect, and cumulative effects would be the same.

Direct and Indirect Effects

There is one known population of Washoe trail rock cress. This population is located to the northwest of the existing resort building. None of the proposed ground-disturbing activities would affect this known population. The construction of the new day use restroom and associated infrastructure would potentially affect habitat for Tahoe yellow cress. Surveys would be conducted in this area prior to project initiation to identify the extent of habitat for Tahoe yellow cress and whether this species occupies any identified habitat. If individuals or a population is found, these areas would be avoided to the maximum extent practicable.

Tree cutting activities associated with BMP retrofit and facility improvement activities have the potential to directly affect Washoe trail rock cress and branched collybia if they occur within the project area. Surveys would be conducted in the project area prior to implementation to determine if these species are present within the project footprint. If individuals or a population is found, these areas would be flagged and avoided to the maximum extent practicable.

The paving of roads and soil decompaction and vegetation planting activities could directly affect Washoe trail rock cress and branched collybia if they occur within the project area. Surveys would be conducted in the project area to determine if this species is present. If individuals or a population is found, these areas would be avoided to the maximum extent practicable.

The removal of trees, vegetation replanting, and soil decompaction activities could result in indirect effects on Washoe trail rock cress and branched collybia by altering suitable habitat in some areas. Additionally, beneficial indirect effects could occur by improving the suitability of the project area by increasing moisture retention and infiltration.

These actions could also indirectly affect the subsurface hydrology in the sandy areas along the shore that provide potential habitat for Tahoe yellow cress. Improvements to hydrology within the project area could retain water for longer periods of time allowing snowmelt and rainfall to move subsurface toward Lake Tahoe, resulting in potential beneficial effects to Tahoe yellow cress and increasing the suitability of potential habitat.

Cumulative Effects

As discussed above, the South Shore project is the only future project that has the potential to contribute to any cumulative effects. The Highway 89 project would affect the existing parking and road right-of-way only. There are no other projects that are in the immediate area that would have the potential for cumulative effects.

The South Shore project will include project design features that will avoid any effects to species of concern. Adverse cumulative effects are not expected as a result of implementation of the proposed Camp Richardson project. Portions of the project area were surveyed in June and July of 2010 with negative survey results for species of interest (see above). The project is designed to improve hydrology and soil conditions on site, which is likely to improve habitat for sensitive plant species. The project will affect some potential habitat as camping and traffic/parking infrastructure is constructed, however these areas will be surveyed prior to implementation to ensure that no species are affected. There will be an overall increase in the potential habitat as the “footprint” of the resort area is reduced from its existing level. Protective design features are expected to be implemented on all current and foreseeable actions.

3.5.3.3 Determination

The following determination for Alternatives 2, 3, and 4 is based on the description of the alternatives and the evaluation contained herein and is documented in the Biological Evaluation (Project Record Document E-1).

The action alternatives may affect individuals, but are not likely to result in a trend toward Federal listing or loss of viability for:

- *Dendrocollybia racemosa* (branched collybia)
- *Rorippa subumbellata* (Tahoe yellow cress)

These two species, although not known to be present in the project area, may be affected during project implementation if undetected individuals or populations are present. However, surveys will be conducted prior to implementation to minimize this potential effect.

- *Arabis rectissima* var. *simulans* (Washoe trail rock cress). This species is not a Forest Service sensitive species. It is a special interest species and therefore is included in this determination.

If any of these species are detected before or during project implementation, they would be flagged and avoided.

The proposed project will not affect the following species:

- *Arabis rigidissima* var. *demota* (Galena Creek rock cress)
- *Arabis tiehmii* (Tiehm’s rock cress)

- *Botrychium ascendens* (Upswept moonwort)
- *Botrychium crenulatum* (Scalloped moonwort)
- *Botrychium lineare* (Slender moonwort)
- *Botrychium lunaria* (Slender moonwort)
- *Botrychium minganense* (Mingan moonwort)
- *Botrychium montanum* (Western goblin)
- *Bruchia bolanderi* (Bolander's candle moss)
- *Draba asterophora* var. *asterophora* (Tahoe draba)
- *Epilobium howellii* (Subalpine fireweed)
- *Erigeron miser* (Starved daisy)
- *Eriogonum umbellatum* var. *torreyanum* (Torrey's or Donner Pass buckwheat)
- *Helodium blandowii* (Blandow's bog-moss)
- *Hulsea brevifolia* (Short-leaved Hulsea)
- *Lewisia kelloggii* ssp. *hutchisonii* (Kellogg's lewisia)
- *Lewisia kelloggii* ssp. *kelloggii* (Kellogg's lewisia)
- *Meesia triquetra* (Three-ranked hump-moss)
- *Meesia uliginosa* (Broad-nerved hump-moss)
- *Peltigera hydrothyria* (Veined water lichen)

This determination is based on the absence of suitable habitat within the project area and the absence of individuals known or expected to occur (see Project Record Document E-1, Section IX).

3.5.4 Invasive Species

Based upon the Camp Richardson Noxious Weed Risk Assessment Report (Project Record Document E-4), no invasive weed species occur in the project area. Due to the use of heavy equipment and disturbance of the soil surface during project construction, there is potential for invasive species to be introduced. The Proposed Action and Alternative 3 include project design features to avoid the potential for introduction of invasive species.

3.5.4.1 Alternative 1 – No Action

Direct and Indirect Effects

There would be no direct or indirect effects associated with taking no action.

Cumulative Effects

Since there would be no direct or indirect effects, there would be no cumulative effects associated with this alternative.

3.5.4.2 Alternative 2, Alternative 3, and Alternative 4

The effects of these alternatives are included in this section, as the overall nature, scope, and intensity of the actions are not substantively different between the alternatives and hence the direct, indirect, and cumulative effects would be the same.

Direct and Indirect Effects

With the implementation of project design features, the project area would be at minimal risk of infestation of invasive species. These project design features include washing of heavy equipment prior to on-site use, and the use of certified weed-free plantings or seeds associated with revegetation efforts. There would be no direct or indirect effects.

Cumulative Effects

The project design features associated with this project will also be implemented on the projects considered in the cumulative effects analysis (Section 3.0). There would be no direct or indirect effects; therefore, there would be no cumulative effects.

3.5.5 Analytical Conclusions

None of the alternatives would have a significant adverse effect on vegetation, any species of concern, or risk of effects from invasive species. The area has been adequately surveyed for existing populations and for suitable habitat. The project design features will ensure that known populations will be protected. The residual response from the tree removal would be slightly greater under Alternative 2 than under Alternatives 3 and 4, as slightly more trees would be removed, particularly those larger than 30 inches dbh (40 of 1,035 trees would be removed, as compared to 4 to 8 of 1,035 trees); however, the greater positive effect is not measurable.

3.6.1 Introduction and Affected Environment

3.6.1.1 Methodology and Indicators of Effects

In the project area, water runoff and associated erosion/sedimentation or flooding is directly related to the condition of the soil resource. Onsite improvement of the soil-water interactions (hydrologic function) will result in reduced threats of overland flow, erosion/sedimentation, and flooding. As such, effects to the water resource will be discussed in the context of changes to properties of the soil resource. Effects to soil hydrologic function would occur primarily as an indirect effect of reduction in soil porosity, so these indicators are discussed together. The following soil quality objectives (USDA Forest Service 1995) are used as indicators for this analysis and are defined and discussed below.

Soil Porosity and Soil Hydrologic Function. This indicator is expressed as the change in the amount of compacted/impervious surface area. The project has the potential to improve soil porosity and hydrologic function. Soil hydrologic function describes the ability of water to move into and through soils. Infiltration can also be reduced when the soil surface becomes hydrophobic (water repellent).

Effective Soil Cover. The project has the potential to increase soil cover, expressed as a qualitative estimate of change. The presence of effective soil cover generally indicates that the soil surface is adequately protected from accelerated surface erosion. Accelerated erosion can impair site productivity and water quality. When eroded soil is deposited in water bodies, it can affect water quality and aquatic habitats.

As noted above, effects to water quality are closely associated with effects to soil characteristics. In addition, potential effects on water quality will be evaluated by the following indicators:

Tahoe Regional Planning Agency (TRPA) Land Capability. TRPA uses the Bailey Land Scoring System to assist in evaluating the level of development an area can tolerate without sustaining permanent damage through erosion and other causes (Bailey 1974). The capabilities of the soils of the project site were validated by TRPA representatives in 2007 (Project Record Document E-16). According to the TRPA, Bailey scores and current land coverage (i.e., impervious surface) for the project site are:

- 28% coverage of Class 5 lands.
- 38% coverage of Class 6 lands.
- 39% coverage of Class 7 lands.
- 1% coverage of Class 1b lands (SEZ)

The TRPA Bailey Land Scoring System allows 25% coverage for Class 5 land and 30% coverage for Class 6 and Class 7 lands. Class 1b lands coverage should be no more than 1% to 5% coverage, and no new development is allowed.

Effects to Pope Marsh Stream Environment Zone (SEZ). This will be a qualitative discussion regarding the potential beneficial effects to the SEZ from the action alternatives, as compared to taking no action.

The temporal scope for assessment of soil, water, and riparian area resource environmental effects includes short term (1–10 years following project implementation) and long term (10–20+ years following project implementation) for this analysis. This timeframe would capture both the immediate effects of the proposed project activities and the expected effects to the point where they are no longer discernable from other activities. A cumulative watershed effects analysis based on equivalent roaded acres (ERAs) for this project was determined unnecessary because of the small “footprint” of the project area, and the direct and indirect effects would be beneficial (a reduction in impervious surfaces) and would improve existing site conditions under any action alternative. An EA-based analysis is appropriate for projects in which the potential adverse effects include increases in impervious services and/or adverse site disturbance that could lead to an increase in thresholds of concern based on equivalent roaded acres.

3.6.1.2 Affected Environment

The project area is gently rolling land with north-south slopes ranging from 0% at lake shore to 5% at the south project boundary. The east-west slopes range from 1 to 3%. There is an east-to-west slope break in the project area south of Highway 89. This slope break occurs in the southern campground area, Eagle’s Nest, just across from the existing entrance to Badger’s Den Campground. The project area drains to the north toward Lake Tahoe.

Hydrology

The project proposes restoration and improvement actions within 79 acres of the Camp Richardson Frontal Subwatershed with the Hydrologic Unit Code (HUC) number 16050101040305. There are a total of 2,658 acres in the Camp Richardson Frontal Subwatershed (ICF Jones & Stokes 2010). The proposed project encompasses roughly 3% of the total watershed area. This subwatershed is extensively developed with houses and roads, as well as development along the shore of Lake Tahoe (e.g., Tahoe Keys, Pope Beach, Camp Richardson Resort and campground complex, etc.), and contains only ephemeral creeks. Based on field observations, the project area currently exhibits diffuse patterns of intersecting poorly defined ephemeral channels. There is evidence of onsite concentrated runoff in vehicle and footpath traffic areas due to the combination of the compacted surface and linear features that concentrate and accelerate the runoff. The surface drainage appears to be the result of surface compaction and vehicle paths/human trails rather than naturally forming systems. These small concentrations of runoff are not yet resulting in sedimentation in any streams or Pope Marsh. One ephemeral drainage has a clearly defined channel and is located on the east side of the project area. This channel drains due north from the Eagle's Nest Campground area, through the Badger's Den Campground area, and through Pope Marsh to Pope Beach. This unnamed channel is hydrologically stable, and is covered with litter and other vegetative debris. The channel is not incised, nor does it show signs of obvious erosion.

Stream Environment Zone

Pope Marsh is approximately 22 acres of which approximately 0.3 acre is located in the project area. A representative of TRPA reviewed the previously discussed ephemeral channel (see Section 1.4.2) in the project area (Appendix B, Figure B-3). This review confirmed that this channel does not have

the characteristics to be classified as an SEZ but serves as a natural corridor that connects Pope Marsh drainage to forested areas beyond the project permit boundary. Pope Marsh is the only riparian area that has been identified in the project area.

Beneficial Uses

Of the beneficial uses identified in the Lahontan Basin Plan for the South Lake Tahoe Hydrologic Area (Lahontan Regional Water Quality Control Board 1995), there are two that are applicable to the project site:

- Freshwater replenishment (precipitation from site infiltrates and also flows off to Lake Tahoe).
- Wildlife habitat (Pope Marsh, adjacent to the project site).

Soils

This section discusses the characteristics of the soils that would potentially be affected by the improvements to the recreational facilities and the traffic circulation and parking infrastructure. For the purpose of this analysis, the Watah soil is considered an SEZ soil. These soils are coarse textured, with high percentages of sand and low percentages of silt and clay. In general, the soils are shallow (3 feet or less) and rocky, with gravelly loamy sands overlying impervious bedrock. Being coarse textured and poorly aggregated, with resulting low water holding capacity, the soils are generally very permeable and are susceptible to erosion, particularly on slopes greater than 20% (Bailey 1974). The soil survey for the Camp Richardson project area (USDA NRCS 2011a) indicates that 90% of the project area is Tallac coarse sandy loam, which is moderately well drained. There are five soil types evident within the project boundary. These are listed in Table 3.6-1.

Table 3.6-1. Acres of Soil Map Units in Project Area and Within Treatment Stands

Map Unit Symbol	Map Unit Name	Project Acres
7071	Watah peat, 0 to 2% slopes	<1
7444	Christopher-Gefo complex, 0 to 5% slopes	4
7471	Marla loamy coarse sand, 0 to 5% slopes	3
7524	Tallac gravelly coarse sandy loam, moderately well drained, 0 to 5% slopes	49
7525	Tallac gravelly coarse sandy loam, moderately well drained, 5 to 9% slopes	22

Under natural conditions, the predominant soil types in the project area are very permeable in infiltration of water and are not subject to flooding. Table 3.6-2 displays key attributes of the soil types.

Table 3.6-2. Soil Characteristics

Soil Series (Symbol)	Permeability	Runoff Potential	Flood Frequency
Watah (7071 - SEZ soil)	Rapid	High	Frequent
Tallac (7524 and 7525)	Moderately rapid	Low	None
Christopher-Gefo Complex (7444)	Rapid	Low	None
Marla (7471)	Moderately rapid	Low	None

Source: USDA NRCS 2011b.

Current recreational use by vehicles, hikers, and campers has compacted the soils and decreased vegetative cover throughout the 79-acre project area. There are approximately 1,146,737 square feet (26 acres) of land surface coverage, compacted soil, and surfaced area in the project area. The exposed soils in the camping areas, for the most part, are considered impervious surfaces due to the extensive past recreational use including unconstrained vehicle parking. This past use has resulted in decreased infiltration of precipitation and accelerated runoff from the area with an increased risk of potential erosion and offsite deposition. The only documented riparian area within the project area is a small portion (0.3 acres) of Pope Marsh.

Several campsites in the Badger's Den Campground area and user-generated trails within this riparian area are characterized by damaged wetland vegetation and compacted soils. Soil cover has been lost, rendering the exposed soil surface susceptible to accelerated runoff and erosion. Surface runoff drainage has also been altered, redirected, or obliterated as a result of vehicle and human traffic patterns and onsite camping. These problems are evidenced by observed rutting and subsequent channeling as surface runoff is concentrated in these areas.

The soil survey indicates that under undisturbed circumstances this site is within Classes 5, 6, and 7 of Bailey's 1974 mapping of land capability. These classes are identified as having a low disturbance hazard, having a slight erosion potential, and allowing for an impervious cover of 25 to 30%. Currently, the site is covered by 33% impervious surfaces, which is slightly more developed than the TRPA classification guidelines call for. The exception is the 0.3 acre of the project area in land Class 1b, Watah Peat soils, which are among the least tolerant to land use exhibiting high erosion and disturbance hazards and very poor drainage capacity. Proposed actions in the Class 1b, Watah Peat soil portion of the project area are limited to a net reduction in impervious surfaces via campground and trail removal and site rehabilitation. From the tabulated information, it becomes evident that project activities regarding improvements to recreational and traffic circulation infrastructure would occur on well-suited stable soils, with the exception of the Watah soils (SEZ area).

3.6.2 Alternative 1 – No Action

3.6.2.1 Direct and Indirect Effects

The campground areas would continue to not meet current BMP standards associated with developed recreational sites (USDA Forest Service 2000a). The project site would continue to be at risk of ongoing soil damage and offsite erosion. Vehicle circulation and campsite locations are poorly defined consisting mainly of unpaved surfaces with extensive soil compaction. The existing

conditions would continue to have the potential to contribute sediment to Pope Marsh, which can negatively affect the water clarity and quality of Lake Tahoe. Recreation vehicles would continue to drive and park where an opportunity presents itself. Visitors would continue to seek foot access to Camp Richardson and Pope Beach by whatever route is passable. Soil porosity and hydrologic function would continue to degrade as current use continues. Soil cover would not be able to re-establish itself, and organic matter would continue to be lost by repeated vehicle and foot traffic in unmanaged camping areas. Approximately 1,146,737 square feet of essentially impermeable surfaced areas and soils would persist and may possibly increase above current recreational use in the future. Soils would continue to be compacted by users. The Pope Marsh riparian area would continue to decline as a result of campsite use and randomly developed foot trails. No BMP or design features would be implemented to offset the ongoing effects in the project area (i.e. compaction, etc.) environmental degradation in the project area.

3.6.2.2 Cumulative Effects

There are six planned projects to be considered (see Section 3.0). : possible future traffic and parking improvements along Highway 89 (Caltrans), the South Shore Fuel Reduction Project, the Fallen Leaf Trail ATM Project, the Tallac Historic Site BMP Project, the Angora Restoration Project, and the Taylor Creek Education Center Replacement. There would be no potential for significant cumulative effects from this alternative because no direct or indirect effects are associated with taking no action.

3.6.3 Alternative 2 – Proposed Action

3.6.3.1 Direct and Indirect Effects

This alternative has the potential to affect soil, water, and riparian resources through the following actions and changes to the project area:

- Decreasing the permanent land surface coverage area.
- Removing existing trees and stumps, leading to localize surface disturbance.
- Decommissioning/restoring or upgrading trails within the Pope Marsh riparian area.
- Removing snow from paved surfaces to facilitate year-round use.

The potential effects would occur in both the short term and the long term. In the short term, soils would be exposed during construction as the campground facilities and traffic routes are either removed, improved, or re-surfaced. There is some potential for short-term erosion if exposed soils are subject to heavy precipitation. In the long term, the project activities would have beneficial effects as the BMPs associated with the project design take effect and improve site conditions.

With implementation of the BMPs and design features and because the Camp Richardson Project is situated on relatively flat terrain and a majority of soils have inherent high infiltration rates, the risks of deleterious runoff and associated erosion are minimal following completion of the Proposed Action.

The Proposed Action would have a net benefit to soil and water resources over both the short and long term. Sedimentation and associated runoff from the existing campground sites and road and

trail systems would be reduced, and soil structure and hydrologic function would be improved due to increases in ground cover, properly managed stormwater runoff, and reductions in impervious surfaces, which would allow greater onsite infiltration of precipitation. This alternative would manage stormwater runoff to infiltrate on site, as close to its point of origin as possible. Paved surfaces would reduce erosion and the generation of sediment by reducing exposed barren soil surfaces and by gathering and infiltrating runoff as part of a designed drainage system that includes the most current BMP guidelines. Stormwater would be directed to shoulders, micro-basins, and swales where appropriate for infiltration. Existing overall drainage patterns are not anticipated to change, and no new discharge to the highway Right Of Way is anticipated.

Decompaction of existing compacted soils not planned for campground use would allow for dispersed infiltration and a reduction in sheet flow of water through the site. These treatments would improve the porosity and hydrologic function of soils in the project area. Removal and improvement of campsites and trails within Pope Marsh SEZ would reduce impervious surface coverage by almost 50%, from 11,959 to 5,971 square feet (from 0.27 acre to 0.14 acre) as compacted soils are tilled, mulched, and revegetated and pedestrian traffic is more controlled on designated walkways. The reconstruction of the emergency access road from the Camp Richardson Resort village east to Badger's Den Campground would improve the quality of Pope Marsh by improving the flow of water underneath the roadbed and increasing hydrologic connectivity.

Reduction in the square footage of compacted area coverage via access circulation management and campsite reduction in conjunction with soil de-compaction would accelerate the rate of hydrologic conductivity recovery (porosity-infiltration/permeability) in the project area. Increased infiltration, permeability, and soil cover would substantially decrease surface runoff and associated erosion. Dispersal of chipped material would increase soil protective cover and introduce surface organic matter. The added surface organic materials would hold moisture close to the surface for an extended period of time, affording re-vegetation of areas not planned for campground use.

The majority of tree removal would occur on already compacted surfaces and is not expected to contribute further to soil disturbance and erosion potential. There will be instances of tree removal in areas that are not currently compacted by past use. The removal of the stumps has a potential to affect previously undisturbed soils, however these impacts will be minimized by BMPs and project design features that will provide for soil cover after the project is completed. Snow removal is a possible source of increased or concentrated runoff. Snow would be removed by plowing it to the sides, rather than removal and stockpiling in storage areas. Snow would be allowed to melt on site, and snowmelt would be captured by onsite drainage basins, which would minimize the risk of surface erosion and potential sedimentation. Winter camping will occur, which is currently not allowed. It is not expected that winter camping will lead to any additional potential effects not discussed elsewhere in this section. The nature of the activities would not change; however, the level and intensity of use during the winter will be much less than during the peak summer season.

Under the Proposed Action, there would also be a substantial shift in use of the classified lands (TRPA land capabilities). The existing use indicates that there is 28% coverage of lands categorized as Class 5, 38% coverage of lands categorized as Class 6, 39% coverage of lands categorized as Class 7, and 1% coverage of lands categorized as Class 1b (SEZ). Under the Proposed Action, Class 5 coverage would be reduced to 19%, Class 6 coverage would be reduced to 31%, Class 7 coverage would be reduced to 10%, and Class 1b coverage would be less than 1% (from the removal of camping areas). These changes are more consistent with TRPA land use capability

recommendations. The reductions would amplify the benefits of further lowering erosion and runoff potential and disturbance hazards.

As stated in the Water Quality Management Plan, TRPA's environmental threshold goal is to "preserve existing naturally functioning SEZ lands in their natural condition and restore 25% of the SEZ lands that have been identified as disturbed, developed, or subdivided, to attain a 5% total increase in the area of naturally functioning SEZ lands" (TRPA 1998). This project would contribute toward meeting the TRPA goal by removing impervious campsite surfaces from Pope Marsh, consolidating user created trails into a single managed trail through the marsh, therefore improving the Pope Marsh SEZ and reducing potential effects from the adjacent campgrounds and traffic infrastructure.

With the implementation of project design features and BMPs the Proposed Action is expected to improve the function and viability of the soil resources, protect the quality of water flowing from the site, and enhance riparian areas within Pope Marsh. There will be very short-term effects during the construction of the project (e.g. disturbed soil surfaces), however the BMPs and project design features will minimize these effects. In addition, the majority of the work is expected to be conducted during dry weather when the potential for precipitation is minimal. The beneficial uses of the project site would also be fully protected.

3.6.3.2 Cumulative Effects

As discussed under the No Action Alternative, there are six projects to be considered in addition to this alternative. The Highway 89 improvements, Fallen Leaf Trail ATM and Tallac Historic Site Projects would all have beneficial effects on soil and hydrologic resources from the implementation of BMP's on the Highway, trails in the Fallen Leaf Management Area, and at the Tallac Historic Site. Even though there is a potential that some of these projects may overlap in time with the Camp Richardson project, it is not expected that any cumulative effects would occur from these three projects, as they do not occur within the same subwatershed as the Camp Richardson project. The Taylor Creek project and the Angora Restoration Project are not expected to contribute to any cumulative effects as they also do not occur in the same subwatershed as the Camp Richardson project.

Approximately eight acres of the South Shore Project would overlap with the Camp Richardson project. These treated acres are located in the southwest quadrant of the Camp Richardson campground resort area and are not in the immediate proximity to the ephemeral channel or Pope Marsh SEZ. When the direct and indirect effects are considered together, there would be no contribution to significant cumulative effects because that project is not expected to have any adverse effects to soil or hydrology as a result of the implementation of project design features and BMPs for both projects.

No adverse cumulative effects are expected because this alternative will have beneficial effects on soil and hydrologic conditions by reducing the amount of impervious surfaces, improving site drainage, reducing erosion potential, and reducing impacts to the Pope Mark SEZ.

3.6.4 Alternative 3 and Alternative 4

The effects of these two alternatives are addressed together. The very slight difference in the amount of impervious cover as compared to the existing condition is such that there is no substantive difference in the effects.

3.6.4.1 Direct and Indirect Effects

The effects for Alternative 3 and Alternative 4 would be very similar to those for Alternative 2. The beneficial effects of Alternative 3 and Alternative 4 are slightly greater because there would be a decrease in the amount of impervious surface as compared to Alternative 2 (18.4 acres for Alternative 3 and 19.5 acres for Alternative 4, as compared to 20.9 acres under Alternative 2). Larger areas of soils would be decompacted because fewer campsites and parking areas would be developed. Therefore, these treatments would improve the porosity and hydrologic function of soils on a greater portion of the project area. Removal and improvement of campsites and trails within/through Pope Marsh would reduce riparian area coverage almost 50%, from 11,959 to 6,717 square feet.

With the implementation of design features and BMPs, both Alternative 3 and Alternative 4 are expected to improve the function and viability of the soil resources, improve the quality of water flowing from the site, and enhance riparian areas within the Pope Marsh SEZ.

3.6.4.2 Cumulative Effects

The cumulative effects for these alternatives would be very similar to Alternative 2 as the difference in the direct and indirect effects, in conjunction with the projects considered for cumulative effects, would not be measurably different.

3.6.5 Analytical Conclusions

Taking no action would allow the degraded soil and hydrologic conditions in the project area and impacts to the Pope Marsh SEZ to persist and potentially to worsen. All action alternatives would improve these conditions, and there would be no significant cumulative impacts. Alternatives 3 and 4 would have slightly more beneficial effects on soil and water resources than the Proposed Action because they would 1) allow a larger surface of the project area to be decompacted, 2) allow a larger portion of the soil surface to be covered with masticated/chipped wood debris, 3) have less concentrated runoff from paved surfaces, and 4) still provide for the reclamation of the Pope Marsh riparian area. The beneficial uses associated with the project area would be protected.

3.7.1 Introduction and Affected Environment

This analysis is based in part upon the Camp Richardson Resort Redevelopment Traffic Study (Project Record Document E-11). Most of the Lake Tahoe Basin air quality TRPA thresholds show a positive trend toward attainment. The most detrimental air pollutants in the area are greenhouse gasses (GHGs) such as nitrous oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO₂). The most common source of GHGs is from vehicle emissions. Particulate matter less than 10 microns in diameter (PM10) is also studied to determine effects on air quality. Particulate matter is expelled into the atmosphere through exhaust and dust.

The project would have effects from vehicle emissions. Vehicle Miles Traveled (VMT) is used as a proxy for estimating the changes in vehicle emissions. The project may also have effects from temporary fugitive dust that would be generated during implementation of the project. No burning is prescribed for the project, so no smoke-related emissions would occur.

3.7.2 Alternative 1 – No Action

3.7.2.1 Direct and Indirect Effects

This alternative would have no direct effect or indirect effects on the existing air quality, as no action would take place.

3.7.2.2 Cumulative Effects

Since there would be no direct or indirect effects, there would no cumulative effects associated with this alternative.

3.7.3 Alternative 2 – Proposed Action

3.7.3.1 Direct and Indirect Effects

The project area lies within the Lake Tahoe Air Basin and the El Dorado Air Quality Management District. The traffic study (Project Record Document E-11) identifies a net reduction in vehicle trips of approximately 11% from the improvements associated with the Proposed Action. The effect of the proposed project on summer daily VMT in the Tahoe Basin is dependent on the total trip generation and the length of these vehicle trips. As the project would result in an overall reduction of daily vehicle trips, it would also reduce region-wide VMT. The reduction in VMT resulting from the proposed project was estimated based on the average trip lengths and the total reduction in daily vehicle trips. It is assumed that half of the trips associated with the campground and day use parking areas are Visitor Home Based Recreational trips, and half are Visitor External trips. Based

upon TRPA Trip Data, the average trip lengths for these trip types are 7.30 miles and 9.52 miles, respectively. The average trip length associated with the project is therefore approximately 8.41 miles. Multiplying this by the reduction in daily trips (-163) results in a decrease of 1,371 VMT. In comparison with the TRPA's most recent assessment of 2,079,849 existing VMT in the Tahoe Basin, the proposed development is estimated to decrease region-wide VMT by about 0.07 percent on a peak summer day.

Chapter 93.3.B of the TRPA Code of Ordinances (TRPA 1987) requires that a project provide an air quality impact analysis only if the project is expected to significantly increase daily vehicle trips. This project is predicted to reduce vehicle trips and would have a positive effect on air quality due to the improvements to the recreational and traffic infrastructure. The addition of year-round access and use to the campgrounds is not likely to have an adverse effect on emissions. This is based on observations by Forest Service personnel of the winter-time use at the Zephyr Cove facility, where vehicular use is low as compared to peak seasons in the summer. During implementation (1–2 years), there would be temporary emissions associated with construction work; however, these emissions are not expected to have an impact on air quality. In addition, fugitive dust during construction would be minimized with adherence to project design features.

3.7.3.2 Cumulative Effects

The cumulative effects analysis was bound in time to 15 years in the future for foreseeable future actions. This approximates the time frame over which conditions due to the Proposed Action could be reasonably estimated. The area considered for the cumulative effects analysis is approximately within a half-mile radius of the project boundary. The six projects identified in Section 3.0 were evaluated for their potential to contribute to cumulative effects. The extent of any specific changes to the motorized travel network from the Fallen Leaf ATM project or the Tallac Site Project is not known at this time. Based on current information, none of the projects is expected to have any changes to vehicle miles traveled, and hence there would be no expected adverse cumulative effect on emissions from vehicle traffic. The Highway 89 improvements are expected to potentially improve traffic conditions and would have a positive effect on air quality. The effects from the Camp Richardson Project would add to the effects of the South Shore Project, since there would be some fugitive dust in the immediate project area as the South Shore thinning occurs in approximately eight acres of the campground area. The fugitive dust from both projects would be minimized by implementation of project design features that provide for dust abatement. There would be no cumulative effects from the South Shore project.

The reductions in vehicle trips would have a positive effect on air quality when taken into consideration with other current or future projects. Emissions or fugitive dust in the vicinity would have a short-term cumulative effect on air quality (one to two construction seasons) and would not have a long-term cumulative effect on air quality.

3.7.4 Alternative 3 and Alternative 4

3.7.4.1 Direct and Indirect Effects

The effects of these alternatives would be very similar to, but slightly less than, those of Alternative 2. The number of vehicle trips would be slightly less due to the smaller camping

capacity. Short-term construction-related emissions and fugitive dust would also be similar to emissions and fugitive dust for Alternative 2.

3.7.4.2 Cumulative Effects

The potential for cumulative effects would be the same as under Alternative 2. There would be no cumulative effects.

3.7.5 Analytical Conclusions

This project is predicted to reduce vehicle trips and would have a positive effect on air quality due to the improvements to the recreational and traffic infrastructure. The addition of year-round access and use to the campgrounds is not likely to have an adverse effect on emissions. During implementation (1–2 years), there would be temporary emissions associated with construction work; however, these emissions are not expected to have an impact on air quality. In addition, fugitive dust during construction would be minimized with adherence to project design features.

3.8.1 Introduction and Affected Environment

This analysis relies heavily on the Camp Richardson Resort Redevelopment Traffic Study prepared by LSC Transportation Consultants, Inc. for the LTBMU in November 2009 (Project Document E-11). This study describes and evaluates the roadway characteristics, existing intersections, traffic volumes, driver sight distances, parking accumulation at commercial use sites, level of service, and traffic queuing at the Jameson Beach Road kiosk. It also evaluates traffic impacts at various locations. The cumulative effects analysis was bound in time to 15 years in the future for foreseeable future actions. This approximates the time frame over which conditions due to the Proposed Action could be reasonably estimated. The area considered for the cumulative effects analysis are projects that would occur within approximately two miles of the project area.

The project site is served by the following existing roadways:

- **Highway 89 (State Route 89/Emerald Bay Road)** is a two-lane roadway connecting Lake Tahoe's West Shore, Tahoe City, Truckee, and the Interstate 80 corridor to the north of the site with South Lake Tahoe and US Highway 50 to the south. Near the project site, Highway 89 is called Emerald Bay Road, runs in an east-west direction, contains one travel lane in each direction, and has a posted speed limit of 35 miles per hour.
- **Jameson Beach Road** is a short north-south roadway that connects Highway 89 to the Lake Tahoe beaches near The Beacon Bar & Grill. This two-lane roadway provides access to lodging uses, a restaurant, and marina, as well as a private residential neighborhood. The road is managed by the Forest Service, through the Resort Special Use Permit. Private property owners have access easements on this road.

The project site is served by the following existing intersections:

- The **Highway 89/Jameson Beach Road** intersection is stop-controlled on Jameson Beach Road, where there are no turn lanes or two-way left turns. Crosswalks are provided at two separate locations for pedestrians and bicyclists. The concentrated public use at this intersection, especially during the peak use recreation season, presents substantial safety risks for vehicles, pedestrians, and bicyclists.
- The **Highway 89/East Campground Access** intersection is a two-way, stop-controlled intersection that provides access to Badger's Den and Eagles Nest Campgrounds. All approaches have one shared lane where vehicle congestion is common.
- The **Highway 89/West Campground Access** is a stop-controlled minor approach that provides access to the RV Village camping area. All approaches have one shared lane.

The majority of public parking spaces outside of the campgrounds and along the northern portion of Jameson Beach Road near The Beacon Bar & Grill are not paved or marked. In addition, there are unpaved and unmarked spots along Highway 89 currently being used for vehicle parking.

Anecdotal information from the Jameson Beach homeowners and resort managers indicates repeated traffic congestion on Highway 89 and on Jameson Beach Road during the peak use season. Additional concerns include safety along Jameson Beach Road and the need to avoid ingress and egress delays of emergency vehicles. There is no statistical data that identifies the number of near misses or vehicle accidents; however, the traffic study identifies an average waiting time of 19 seconds to pass through the Jameson Beach Road kiosk area during the peak use season, when day use parking fees are collected. Vehicles turning onto Highway 89 from Jameson Beach Road averaged approximately 3 seconds, depending upon whether they turned right or left.

Vehicles traveling on Highway 89 through the project area during the peak use season tend to drive slowly and courteously due to the mix of vehicle traffic, bicycle traffic, and pedestrians walking across the highway and in the immediate area. The combined effect of the existing intersections, especially the Jameson Beach Road intersection, results in a high concentration of vehicle traffic. The lack of separation between access to campgrounds and day use parking also creates considerable congestion. The existing conditions pose a serious potential for safety and personal conflicts between vehicles and bicyclists/pedestrians.

Access to the campground check-in location is not clearly defined. In addition, once recreationists are within each of the three developed sites, the interior road systems and campsite parking areas are not well defined either. The lack of clearly delineated road surfaces and the lack of traffic barriers to define traffic flow and campsite parking areas are the primary reasons for the existing conditions. The lack of vehicle management has resulted in the loss of vegetation and the presence of compacted, barren soils with increased dust for recreationists.

3.8.2 Alternative 1 – No Action

3.8.2.1 Direct and Indirect Effects

This alternative would have no direct or indirect effects on the existing transportation systems, as no action would be taken to address the continued health and safety risks at the existing intersections, especially during peak use recreation periods. The continued safety problems associated with heavy pedestrian traffic on the Jameson Beach Road would remain, which is an area of particular concern due to the constant mix of cars and pedestrians sharing the roadway.

3.8.2.2 Cumulative Effects

There would be no cumulative effects under this alternative because there would be no direct or indirect effects.

3.8.3 Alternative 2 – Proposed Action

3.8.3.1 Direct and Indirect Effects

The Proposed Action would improve traffic flows and reduce traffic congestion in the Camp Richardson Resort area. Day use parking would be substantially improved with surfaced and marked parking spaces, which would organize and maximize the public's use of the available space

designated for parking. The reconfiguration of the existing highway intersections (driveways) would reduce the number of intersections by one and improve the public's understanding of the appropriate driveway to use. The proposed transit stops on the north and south sides of Highway 89 would encourage day use visitors from outside the project area to use this mode of transportation rather than compete for the limited parking at Camp Richardson. The transit stop improvements would better define their location, include wheelchair pads designed to meet Architectural Barriers Act standards, and be located off of Highway 89, which would result in improved traffic flow. These stops would have the added benefit of providing visitors with the opportunity to enjoy the forest environment en route rather than focus on traffic flows and vehicle congestion.

Vehicle access to the Badgers Den Campground on the north side of Highway 89 would be more clearly defined, and access to the two campgrounds on the south side of Highway 89 would have one entry. These improvements would reduce traffic congestion and potential safety problems at Camp Richardson.

The existing unpaved parking on the east side of Jameson Beach Road would be paved and well defined, therefore creating a clear understanding of where to park and how to access the beach without walking in the road. Short-term disruptions to normal traffic flows are anticipated during construction activities. A connecting paved walkway to the beach would replace the unpaved pathway and other user-created trails. These unpaved trails are currently creating soil, water quality, and other resource-related issues in and adjacent to Pope Marsh.

The unpaved circulatory road systems within the three developed campground areas would be substantially improved with paving, and campsite spurs would also be paved. These improvements would result in a clear linear definition of the travelway and a clear understanding of where to park vehicles at individual campsites.

Overall, the Proposed Action would reduce peak summer traffic generation in the project area by approximately 11%, improve intersection geometrics by eliminating the existing west campground access, and improve circulation by eliminating parking along the highway shoulders. Circulation within developed campgrounds and campsites would also improve. All phases of the transportation component would have positive effects on the public safety in the project area. The number of pedestrians and bicyclists using the crosswalk on Jameson Beach Road would decrease near the highway, therefore improving Highway 89 traffic flow and reducing the potential for conflicts between vehicles and bicyclists/pedestrians. A new multiple use trail would clearly separate vehicle and pedestrian/bicycle travelways and would reduce the potential for safety conflicts.

The reduced trip traffic associated with the Proposed Action would also have a positive effect on regional traffic trips. The effect of the proposed project on summer daily vehicle miles traveled (VMT) in the Tahoe Basin is dependent on the total trip generation and the length of these vehicle trips. As the project would result in an overall reduction of 163 daily vehicle trips associated with use of the campground facilities (Project Record Document E-11), it would also reduce region-wide VMT. The reduction in VMT resulting from the proposed project was estimated based on the average trip lengths and the total reduction in daily vehicle trip ends. Based upon TRPA trip data, the average trip lengths for these trip types are 7.30 miles and 9.52 miles, respectively. The average trip length associated with the project is therefore approximately 8.41 miles. Multiplying this by the reduction in daily trips (-163) results in a decrease of 1,371 VMT. In comparison with the TRPA's most recent assessment of 2,079,849 existing VMT in the Tahoe Basin, the proposed development is estimated to decrease region-wide VMT by about 0.07 percent on a peak summer day. As discussed

previously, these reductions in trip traffic—in association with the improvements in the roadways, intersections, parking areas, and pedestrian flow patterns—will all combine to greatly improve safety and vehicular traffic conditions.

3.8.3.2 Cumulative Effects

The existing and foreseeable projects were reviewed to determine if there was a potential for cumulative effects as a result of these projects. The Fallen Leaf ATM project may have a potential to affect traffic, however the nature, scope, and extent of any changes is not known at this time. The Angora Fire Restoration project will have a short-term effect, as truck traffic will increase along Highway 89 when trees are removed from the Angora Fire area that is within or in close proximity to the campground (see Section 3.5, Vegetation). This impact would be minimized by coordinating the removal of these trees with a low-use period in the campground. The Caltrans proposal to eliminate the unpaved and uncontrolled parking along Highway 89 would have a positive cumulative effect by eliminating traffic interruptions and flow issues associated with this use.

3.8.4 Alternative 3 and Alternative 4

3.8.4.1 Direct and Indirect Effects

Minor differences exist between these alternatives and the Proposed Action; however, the overall direct and indirect effects on transportation and public safety would be very similar to those for the Proposed Action. The minor differences primarily relate to the level of campground development and the extent of tree removal. The basic improvements in the intersection infrastructure and the proposed improvements to campers, pedestrian safety, and bicycle travelways are very similar. These alternatives would have a difference in the amount of vehicle miles traveled associated with them as compared to the Proposed Action, however the degree of reduction would be very slight, since the difference in campground capacity is very slight between the Proposed Action (1,788) and these alternatives (1,752 and 1,800 respectively).

3.8.4.2 Cumulative Effects

The cumulative effects for the Action Alternative would be similar to those for the Proposed Action.

3.8.5 Analytical Conclusions

All of the action alternatives would have a positive effect on traffic and parking patterns, as well as improved safety for pedestrians, drivers, and bicyclists. Intersections would be less congested. There would be a reduction in the vehicle miles traveled associated with the campground area as well as on a regional scale.

3.9.1 Introduction and Affected Environment

This analysis is based upon the Riparian Conservation Consistency Report for the Camp Richardson Campground and Vehicle Circulation BMP Retrofit Project (Project Record Document E-10). A riparian conservation area (RCA) is a conservation area surrounding a riparian area. The width of the conservation area is determined by the stream type. The Sierra Nevada Forest Plan Amendment directs the following: 1) the width of the RCA will be 300 feet from the edge of any Special Aquatic Feature; 2) a Special Aquatic Feature is any lake, meadow, bog, fen, wetland, vernal pool, or spring; and 3) where a proposed project encompasses an RCA (or critical aquatic refuge [CAR]), conduct a site-specific project area analysis to determine the appropriate level of management within the RCA or CAR. Determination of the type and level of allowable management activities is made by assessing how proposed activities measure against the riparian conservation objectives (RCOs) and their associated standards and guidelines (USDA Forest Service 2004).

The cumulative effects analysis was bound in time to 15 years in the future for foreseeable future actions. This approximates the time frame over which conditions due to the Proposed Action could be reasonably estimated. There are six projects that are considered for their potential to contribute to cumulative effects. These projects are listed in Section 3.0. Only those projects that occur within or immediately adjacent to the Camp Richardson project area are considered. Of these projects, only the Highway 89 project and the South Shore project are considered due to their immediate proximity to this project.

A small portion (0.3 acre) of the project site is located within the RCA for Pope Marsh. This small acreage is located within the upper portion of the buffer zone about 200 feet from the riparian community. The project site is primarily a dry upland vegetative plant community of an open second growth Jeffrey pine (*Pinus jeffreyi*) stand with a limited understory of mountain sagebrush (*Artemisia tridentata* var. *vaseyana*) and antelope bitterbrush (*Purshia tridentata*). The understory has been heavily impacted by the heavy recreational use over many years.

3.9.2 Alternative 1 – No Action

3.9.2.1 Direct and Indirect Effects

Under the No Action Alternative, the existing recreational sites and infrastructure would remain operational without any improvements. There would be no direct effects. The current indirect impacts on the Pope Marsh SEZ, (including existing campsites, user created trails, etc.) are expected to continue.

3.9.2.2 Cumulative Effects

Neither the Highway 89 nor the South Shore projects are known to have potential direct or indirect effects to riparian resources within or adjacent to the project area. There would be no cumulative effects.

3.9.3 Alternative 2 – Proposed Action

3.9.3.1 Direct and Indirect Effects

The Proposed Action was evaluated against each of the RCOs and their associated standards and guidelines. All components of the Proposed Action are consistent with the RCOs. Table 3.9.1 summarizes and provides the rationale for these findings. Based on these findings of consistency, there would be no direct or indirect effects on the resources addressed by the RCOs.

Table 3.9-1. Consistency of the Proposed Action with Riparian Conservation Objectives

Riparian Conservation Objective	Finding
Riparian Conservation Objective #1	
<i>Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.</i>	Consistent: Of the 16 beneficial uses identified for surface waters within this analysis area, the only ones that have the potential to be affected by this project include ground water recharge, wildlife habitat, and threatened or endangered species. Ground water recharge would only be slightly affected as the impervious surfaces at the resort are expected to decrease. Runoff from these impervious surfaces would be directed into infiltration trenches where water would soak into the ground. The Proposed Action should have a beneficial effect on wildlife habitat and the species in Pope Marsh because campsites would be moved from the riparian area and user-created trails within the marsh would be consolidated into one trail. There are no threatened or endangered species found within Pope Marsh.
Riparian Conservation Objective #2	
<i>Maintain or restore: 1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; 2) streams, including instream flows; and 3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.</i>	Consistent: The Proposed Action is not expected to alter the geomorphic or biological characteristics of special aquatic features, streams, or hydrologic connectivity. Campsites would be moved out of the riparian area near Pope Marsh and trails, which currently cross the marsh, would be obliterated and consolidated into one trail. Riparian vegetation may be removed by this project during trail construction, but obliteration of other user-created trails will more than offset that vegetation removal.

Riparian Conservation Objective	Finding
Riparian Conservation Objective #3	
<i>Ensure a renewable supply of large downed logs that: 1) can reach the stream channel and 2) provide suitable habitat within and adjacent to the RCA.</i>	Consistent: The Proposed Action would have no effect on coarse woody debris. Existing downed logs would be retained.
Riparian Conservation Objective #4	
<i>Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.</i>	Consistent: The Camp Richardson Resort is a developed recreation site. The Proposed Action would include removing and relocating campsites from the SEZ at Pope Marsh. The Proposed Action also would include obliteration of user-created trails within the marsh and development of a single trail through the SEZ.
Riparian Conservation Objective #5	
<i>Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.</i>	Consistent: LTBMU would follow temporary BMPs during the construction phase of the Proposed Action. When the project is completed, the campground would have permanent BMPs in place, which should decrease or eliminate the amount of sediment entering Lake Tahoe from the project area.
Riparian Conservation Objective #6	
<i>Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.</i>	Consistent: The Proposed Action would enhance water quality by implementing permanent BMPs throughout the project area.

3.9.3.2 Cumulative Effects

There would be no cumulative effects associated with this alternative because there would be no direct or indirect effects.

3.9.4 Alternative 3 and Alternative 4

The effects of these alternatives are included together, as there is no substantial difference in the scope, extent, and nature of the potential impacts to Pope Marsh.

3.9.4.1 Direct and Indirect Effects

The findings associated with Table 3.9-1 are applicable to Alternatives 3 and 4. There would be no direct or indirect effects.

3.9.4.2 Cumulative Effects

There would be no cumulative effects associated with Alternatives 3 and 4 because there would be no direct or indirect effects.

3.9.5 Analytical Conclusions

None of the alternatives would have significant indirect, direct, or cumulative adverse effects on riparian conservation areas. The action alternatives are consistent with the riparian conservation objectives.

Chapter 4

Consultation and Coordination

The following individuals, agencies, and organizations were consulted during the preparation of this document.

4.1 Interdisciplinary Team Members

The following people participated in the initial scoping, were members of the Interdisciplinary Team, and/or provided direction and assistance during the preparation of this EA.

Daniel Cressy	Team Leader/Landscape Architect
Matt Dickinson	NEPA Contract Coordinator
Mike Guarino	Special Use Administrator
Mike LeFevre	Planning Staff Officer
Jonathan Cook-Fisher	Special Uses Program Manager
Stan Kot	Wildlife Biologist
Cheryl Beyer	Botanist/Noxious Weeds
Mike Gabor	Forest Engineer
John Maher	Heritage Resource Program Manager
Tom Fuller	Archaeologist
Jim Harris	Hydrologist
Gina Thompson	Recreation Staff Officer

4.2 Federal, State, and Local Agencies

Anne Holden	Lahontan Regional Water Quality Control Board
Mike Vollmer,	Tahoe Regional Planning Agency
William Davis, Jim Brake	California Department of Transportation

4.3 Tribal Coordination

Washoe Tribe of Nevada and California	Darrel Cruz
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4.4 Individuals

Walter Stevens

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Camp Richardson Corral Special Use Permittees

4.5 Organizations

Betty Gorman	South Lake Tahoe Chamber of Commerce
Flavia Sordelet, Carl Young	League to Save Lake Tahoe
John Singlaub, Lyn Barnett, Nick Haven	Tahoe Regional Planning Agency
Lori Kemper, Doug Cushman	Lahontan Water Quality Control Board
Kris Knox, Bob Hassett	Camp Richardson Resort and Marina
Jack and Mary Kay Frazee, Doug Calkin,	Jameson Beach Homeowners Association/Club
Walter Stevens, Nathan Rouse	Jameson Beach Homeowners Association/Club
Dan Rogers, Lock Richards	Jameson Beach Homeowners Association/Club
Jaqueline Mittelstadt	Jameson Beach Homeowners Association/Club
Stephen Farnsley	Tahoe Tallac Association
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Lisa O'Daley	California Tahoe Conservancy
Red Wood	California Land Management
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Paul Sciuto	South Lake Tahoe Public Utility District
Randy Kelly	Sierra Pacific Power Company
Steve Teshara	South Tahoe Transportation Management Association
Gabe Chavarin	Area Transit Management
Tom Brannon, Jody Brown, Jim Brake	California Department of Transportation
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Patrick Kaler	Lake Tahoe Visitor's Authority
Les Wright	Lake Tahoe Marathon
Bill Watters	Renaissance Faire Productions
Norma Santiago	El Dorado County Supervisor
Chief Planner	El Dorado County Planning Department
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Dave Jinkens	South Lake Tahoe City Manager

Office of Planning and Research

California State Clearinghouse

El Dorado County Board of Supervisors

Californians for Alternatives to Toxics

Tahoe Area Sierra Club

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5.2 Cited Supporting Project Record Documents

Number	Title
E-1	Biological Evaluation For Threatened, Endangered and Sensitive Plants and Fungi. Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project.
E-2	Camp Richardson Resort Campground BMP Retrofit Existing Tree Inventory
E-3	Botanical Field Reconnaissance Report
E-4	Noxious Weed Risk Assessment, Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project
E-5	Biological Assessment/Biological Evaluation of Aquatic and Terrestrial Species for the Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project, Environmental Assessment
E-6	Tahoe Regional Planning Agency Report for the Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit
E-7	Migratory bird report for the Camp Richardson Resort Campground Vehicle Circulation BMP Retrofit
E-8	Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project, Soils and Hydrology Report.

Number	Title
E-9	Management Indicator Species Report for the Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit
E-10	Camp Richardson Resort Campground and Vehicle Circulation Retrofit Project Riparian Conservation Objectives (RCO) Consistency Report
E-11	Camp Richardson Resort Redevelopment Traffic Study
E-12	Section 106 Consultation for Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project, Camp Richardson Vicinity, El Dorado County, CA
E-13	Camp Richardson Resort Vision Plan Text
E-14	Camp Richardson Resort Vision Plan Figures
E-15	Camp Richardson Resort Vision Plan Appendices
E-16	Camp Richardson Resort Land Capability & Coverage Verification
E-17	Letter to the State Historic Preservation Officer regarding the Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project

Appendix A

Best Management Practices for the Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project

This document discusses the applicable best management practices (BMPs) for the proposed action's design features. Details are provided for application of the BMPs. These BMPs are designed to reduce or eliminate direct, indirect, and cumulative impacts to soil and hydrologic conditions. Actual application of these BMPs is based on the proposed action and integration (further refinement) with project design features (EA, Section 2.3.2).

Sections 208 and 319 of the federal Clean Water Act, as amended, acknowledge land treatment measures as being an effective means of controlling non-point sources of water pollution and emphasize their development. Working cooperatively with the California State Water Quality Control Board (SWQCB), the Forest Service developed and documented non-point pollution control measures applicable to National Forest System (NFS) lands. Following evaluations of the control measures by SWQCB personnel as they were applied on site during management activities, assessment of monitoring data, and the completion of public workshops and hearings, the Forest Service's measures were certified by the state and approved by the U.S. Environmental Protection Agency (EPA) as the most effective means the Forest Service could implement to control non-point source pollution. These measures were termed best management practices. BMP control measures are designed to accommodate site-specific conditions.

In the 1981 Management Agency Agreement between the SWQCB and the Forest Service, the State agreed that "the practices and procedures set forth in the Forest Service document constitute sound water quality management and, as such, are the best management practices to be implemented for water quality protection and improvement on NFS lands." The implementation of BMPs is the performance standard against which the success of the Forest Service's non-point pollution water quality management efforts is judged.

The Clean Water Act provided the initial test of effectiveness of the Forest Service non-point pollution control measures because it required the evaluation of the practices by the regulatory agencies (SWQCB and EPA) and the certification and approval of the practices as the *best* measures for control. Another test of BMP effectiveness is the capability to custom fit the measures to a site-specific condition where non-point pollution potential exists. The Forest Service BMPs are flexible in that they are tailor-made to account for diverse combinations of physical and biological environmental circumstances. A final test of the effectiveness of the Forest Service BMPs is their demonstrated ability to protect the beneficial uses of the surface waters in the state. The BMPs incorporate 75 years of erosion control and watershed protection

experience and are based on sound scientific principles. The land treatment measures incorporated into Forest Service BMPs evolved through research and development and have been monitored and modified over several decades with the expressed purpose of improving the measures and making them more effective. Onsite evaluations of the control measures by state regulatory agencies found the practices were effective in protecting beneficial uses and certifiable for Forest Service application as their means to protect water quality. Implementation, effectiveness, and forensic monitoring will be performed to monitor project activity. Implementation monitoring consists of detailed visual monitoring of treated areas and roads/landings prior to the rainy season with emphasis placed on determining if management measures (such as erosion control measures or riparian buffers) were implemented.

Included within the Tahoe Regional Planning Agency (TRPA) 2008 Water Quality Management Plan for the Tahoe Basin is a section devoted to stream environment zone (SEZ) protection and restoration. The term SEZ was developed by TRPA to denote perennial, intermittent, and ephemeral streams and drainages, as well as marshes and meadows. SEZs generally possess the following characteristics: riparian or hydric (wet site) vegetation; alluvial, hydric soils; and the presence of surface water or near-surface groundwater at least part of the year. SEZs are essential because they provide multiple resource benefits; provide natural treatment and conveyance of surface runoff; contain significant fish and wildlife habitat; improve and maintain environmental amenities of the Lake Tahoe region; and achieve TRPA’s environmental thresholds for water quality, vegetation preservation, and soil conservation.

As stated in the Water Quality Management Plan, TRPA’s environmental threshold goal is to “preserve existing naturally functioning SEZ lands in their natural condition and restore 25% of the SEZ lands that have been identified as disturbed, developed, or subdivided, to attain a 5% total increase in the area of naturally functioning SEZ lands” (TRPA 2008). BMPs, as described in this document, have been effective in protecting beneficial uses within the affected watersheds and have been applied in other projects within the Lake Tahoe Basin Management Unit. Where proper implementation has occurred, there have not been any substantive adverse impacts to cold-water fisheries habitat conditions or primary contact recreation use of the surface waters. The practices specified herein are expected to be equally effective in maintaining the identified beneficial uses.

The following management requirements are designed to address the watershed management concerns. BMPs are derived from the Forest Service publication *Water Quality Management for National Forest System Lands in California* (USDA Forest Service 2000). All applicable water quality BMPs would be implemented. Specific BMPs used for the Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit Project are listed in Table 1.

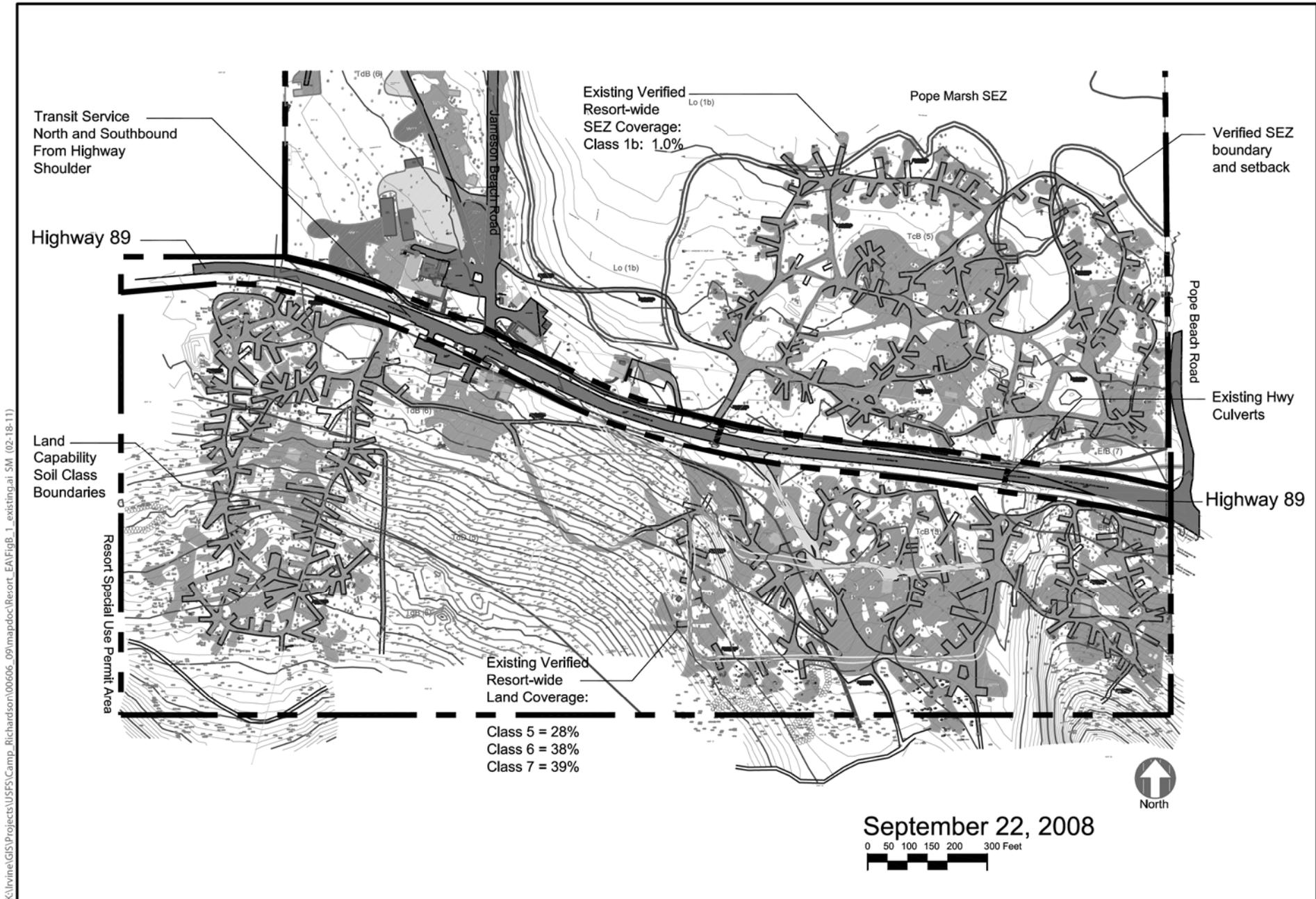
Table 1. Camp Richardson Resort BMP Project Best Management Practices

PSW Region BMPs	Best Management Practice Description
BMP 2-2: Erosion Control Plan	An erosion control plan will be reflected in the design specifications for the campground. This plan will be developed with the RWQCB along with project permitting. The intent of mitigation is to prevent construction-generated erosion, as well as that generated from the completed road, from entering watercourses. Implementation of the erosion control plan will be the responsibility of the contractor with oversight from the COR.

PSW Region BMPs	Best Management Practice Description
BMP 2-3: Timing of Construction Activities	Timing of construction activities will occur as outlined in contract specifications. Construction that involves earth moving activities will occur between May 15 and October 15 unless a grading exemption is obtained from the RWQCB and TRPA as specified in the project design features.
BMP 2-4: Stabilization of Road Slope Surfaces and Spoil Disposal Areas	<p>Contract specifications will prescribe how stabilization of road slope surfaces and spoil disposal areas will occur. Vegetative measures are generally a supplementary device, used to improve the effectiveness of mechanical measures, but can be effective and complete by themselves. They may not take effect for several seasons, depending on the timing of project completion in relation to the growing season.</p> <p>Mechanical and vegetative surface stabilization measures will be periodically inspected to determine effectiveness. In some cases, additional work will be needed to ensure that the vegetative and/or mechanical surface stabilization measures continue to function as intended.</p> <p>Project road inspectors, and their supervisors monitor work accomplishment and effectiveness, to ensure that design standards, project plan management requirements, and mitigation measures are met.</p>
BMP 2-5: Road Slope Stabilization Construction Practices	Include erosion prevention considerations in planning for all road construction contracts. Application is commonly in conjunction with practice 2-4. Complete most, if not all, of the stabilization measures prior to the first winter rains. At especially critical locations, with a high erosion and/or sedimentation potential, extensive and reliable remedies will be necessary. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-6: Dispersion of Subsurface Drainage from Cut and Fill Slopes	Dispersion of Subsurface drainage will be designed by the project engineer where needed. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-7: Control of Road Drainage	Road drainage basins will be designed by the project engineer to store and infiltrate runoff from the project site. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-9: Timely Erosion Control Measures on Incomplete Roads	<p>Apply protective measures to all areas of disturbed, erosion-prone, unprotected ground that is not to be further disturbed in the present year. When conditions permit operations outside of the normal operating season, update the operating plan as necessary and keep erosion control measures sufficiently current with ground disturbance to allow rapid closure when weather conditions deteriorate. Do not leave project areas for the winter with remedial measures incomplete.</p> <p>Compliance with contract specifications during implementation will be handled by the project COR.</p>
BMP 2-10: Construction of Stable Embankments	Stable embankments will be designed by the project engineer. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-11: Control of Sidecast Material During Construction and Maintenance	Disposal areas for sidecast material will be displayed on engineering plans. Compliance with contract specifications during implementation will be handled by the project COR.

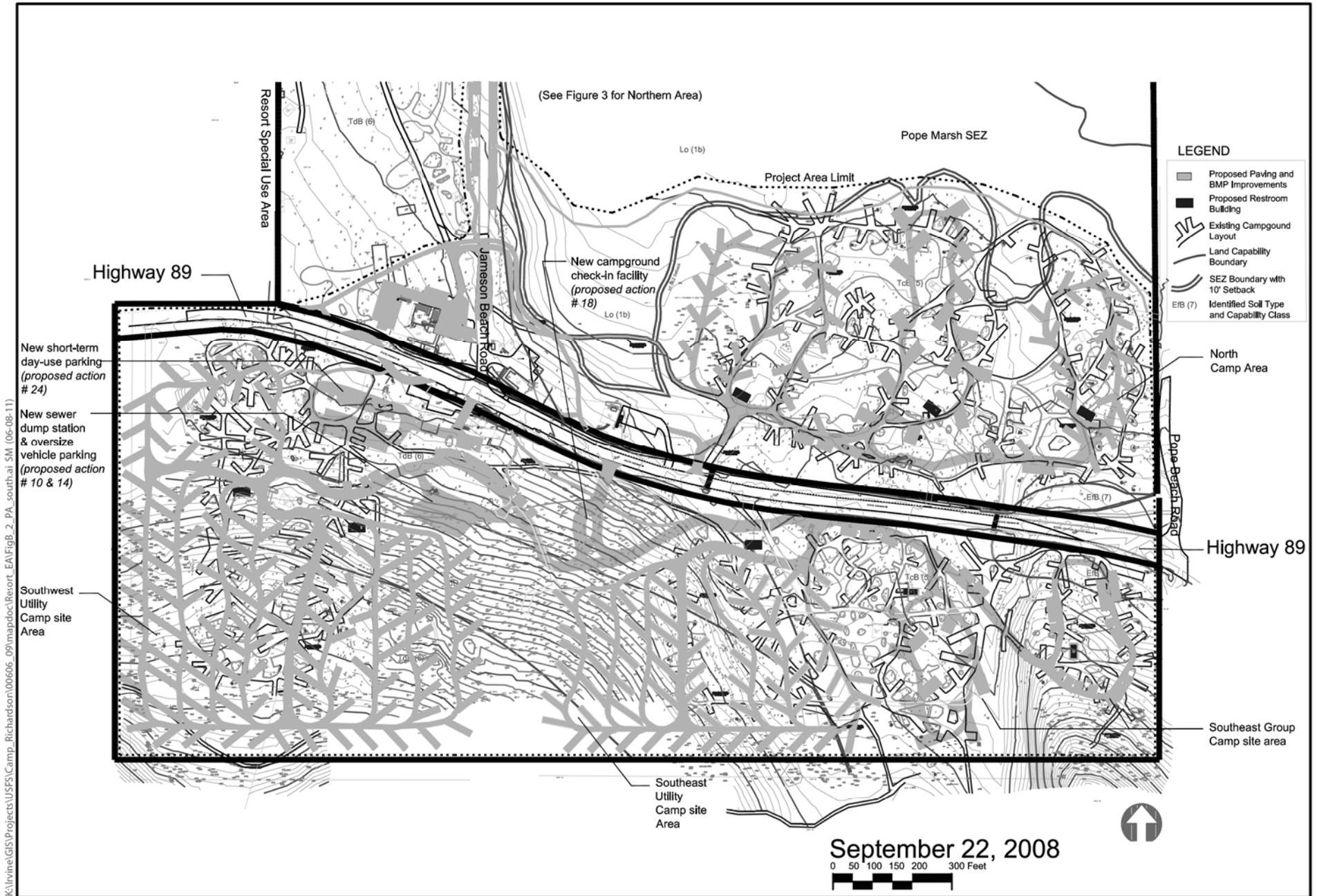
PSW Region BMPs	Best Management Practice Description
BMP 2-12: Servicing and Refueling of Equipment	To prevent pollutants such as fuels, lubricants, and other harmful materials from being discharged into watercourses or other natural channels, unless otherwise agreed upon by the COR, service and re-fueling areas shall be located outside of SEZs. If fuel storage capacities meet or exceed those stated in contract provisions, project Spill Prevention, Containment, and Counter Measures (SPCC) plans are required. Operators are required to remove service residues, waste oil, and other materials from National Forest land and be prepared to take responsive actions in case of a hazardous substance spill, according to the SPCC plan.
BMP 2-13: Control of Construction and Maintenance Activities Adjacent to SEZs	Construction and maintenance activities adjacent to SEZs will be done in accordance with construction designs. SEZ boundaries will be flagged prior to starting work adjacent near the SEZ. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-15: Diversion of Flows Around Construction Sites	This will be required in contracts. Coordination with the RWQCB for permits will be required when diverting any flow. Specifications will be included in the engineering plans. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-17: Culvert Installation	Culvert specifications will be included in the engineering plans. Temporary BMPs such as silt fence will be used to ensure water quality is protected during installation. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-20: Specifying Riprap Composition	Riprap use will be included in the engineering plans. Plans will specify what type and size to be used. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-23: Road Surface Treatment to Prevent Loss of Materials	The road surface within the campground will be paved. Dust control measures will be used during construction. Compliance with contract specifications during implementation will be handled by the project COR.
BMP 2-18: Surface Erosion Control at Facility Sites	Erosion control will be accomplished through applying seed to disturbed areas, paving road surfaces, installing drainage features and basins, and retaining walls.
BMP 4-2: Provide Safe Drinking Water Supplies	Location, design, sampling and sanitary surveys will be performed by qualified individuals who are familiar with drinking water supply systems and guidelines. Coordination and cooperation will be pursued with State or local Health Department representatives in all phases of drinking water system management. Sampling and testing frequencies vary depending on the water source, the number and type of user, and the type of test. If State or local Health Departments do not perform the water sample analysis, State Certified laboratories must be used.
BMP 4-4: Control of Sanitation Facilities	State and local authorities will be consulted prior to the installation of new sanitation facilities, or modifications of existing facilities to assure compliance with all applicable State and local regulations. All phases of sanitation management (planning, design, inspection, operation, and maintenance) will be coordinated with State and local Health Departments and RWQCB representatives.
BMP 4-5: Control of Solid Waste Disposal	A public education effort to control refuse disposal will be a continuing process accomplished through the use of signs, printed information, mass media, and personal contact. Solid waste disposal methods, which define and describe collection, removal, and final disposal methods are described in the operating plan. Garbage containers are planned in areas that are convenient for recreationists.

PSW Region BMPs	Best Management Practice Description
BMP 4-8: Sanitation at Hydrants and Water Faucets Within Developed Recreation Sites	The public will be informed of their sanitary responsibilities by posting signs, on recreation site bulletin boards and at hydrants or faucets, and by personal contact.
BMP 4-9: Protection of Water Quality Within Developed Recreation Areas	In the campground, the public is encouraged through the use of signs, pamphlets, and public contact to conduct their activities in a manner that will not degrade water quality.



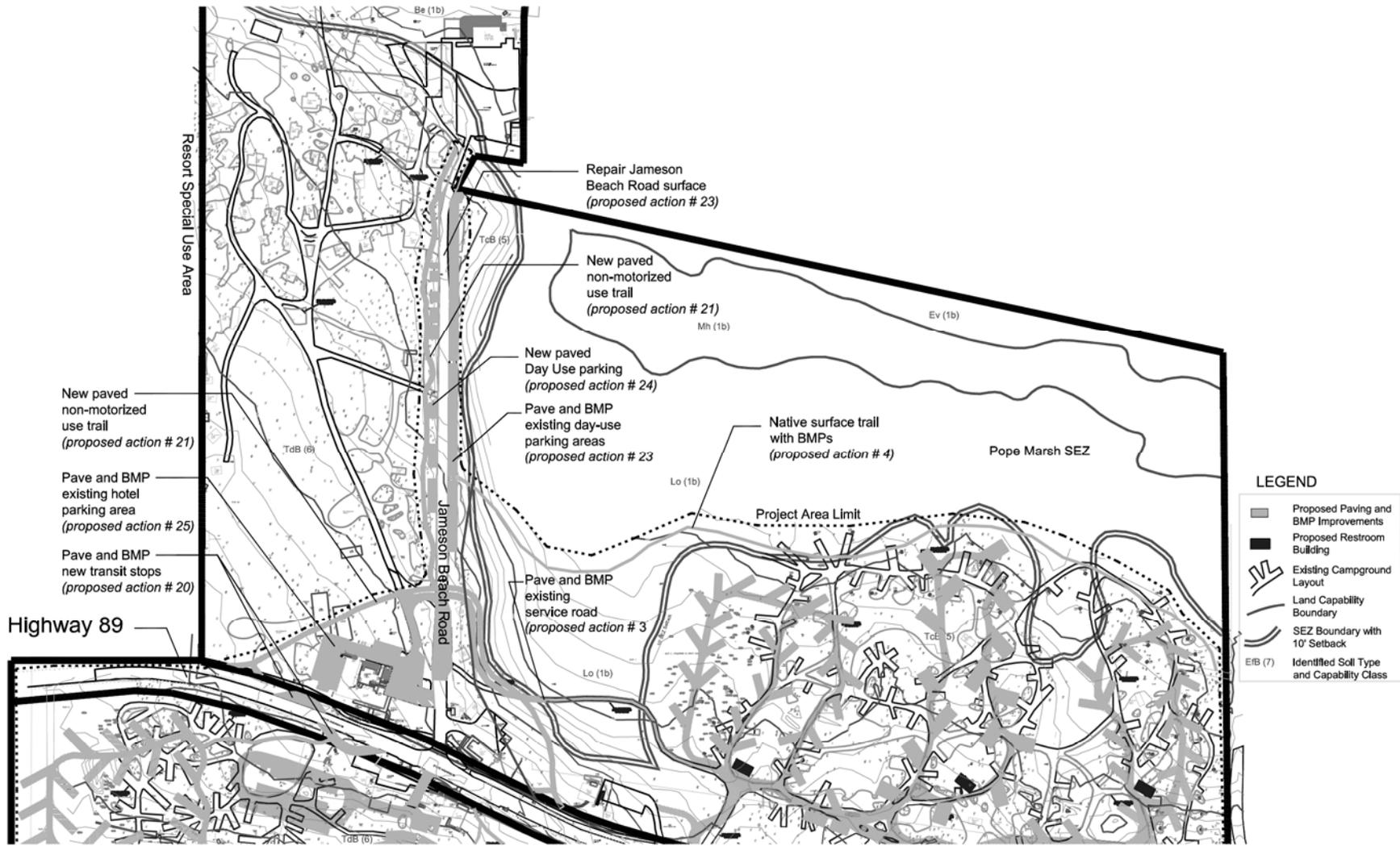
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Figure B-1
Existing Condition
Camp Richardson Resort Campground and Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit



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Figure B-2
Alternative 2 – Proposed Action
Camp Richardson Resort Campground and
Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit



(See Figure 2 for Campground Area)

September 22, 2008

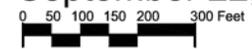


Figure B-3
Alternative 2 – Proposed Action
Camp Richardson Resort Campground and
Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit

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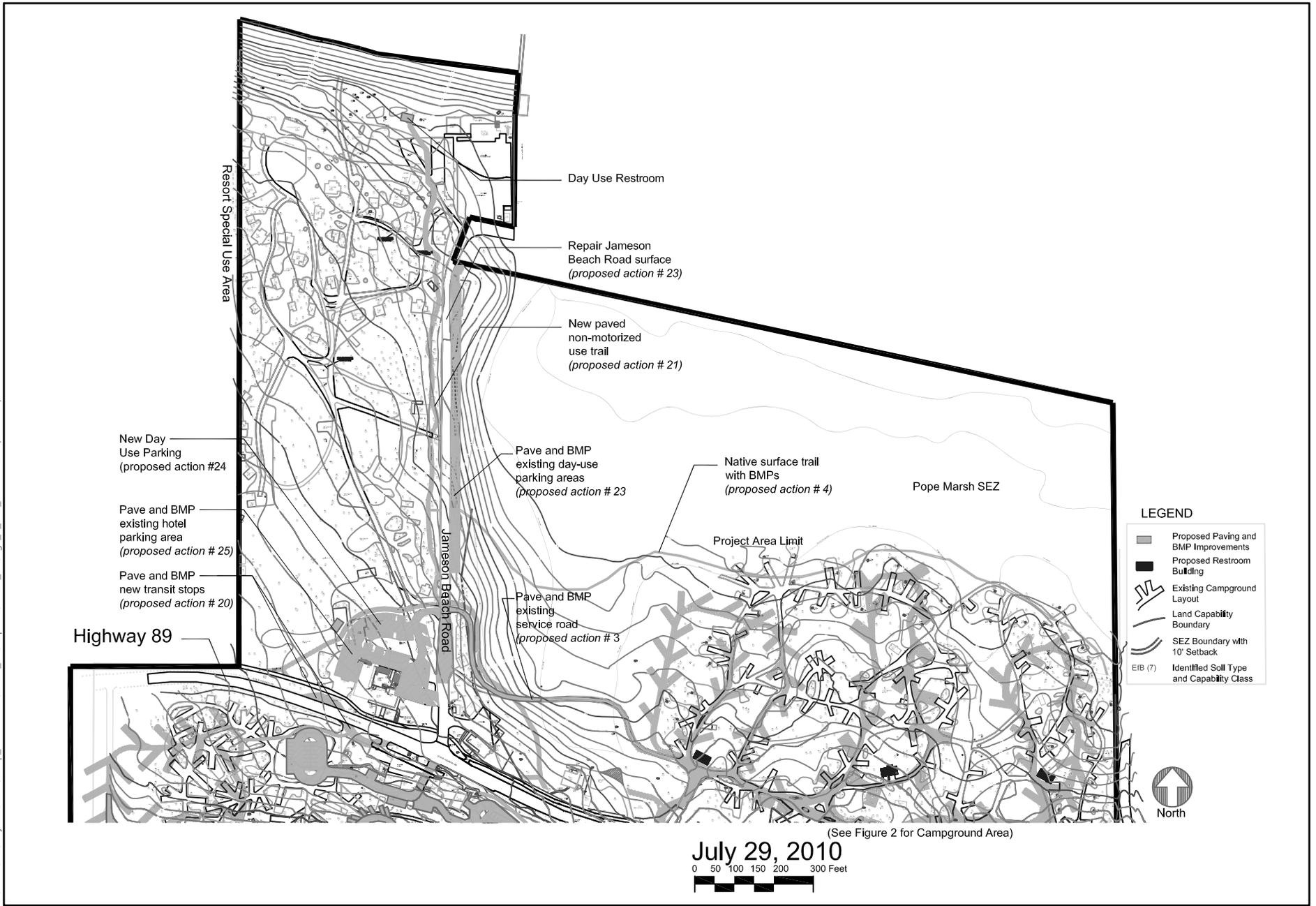
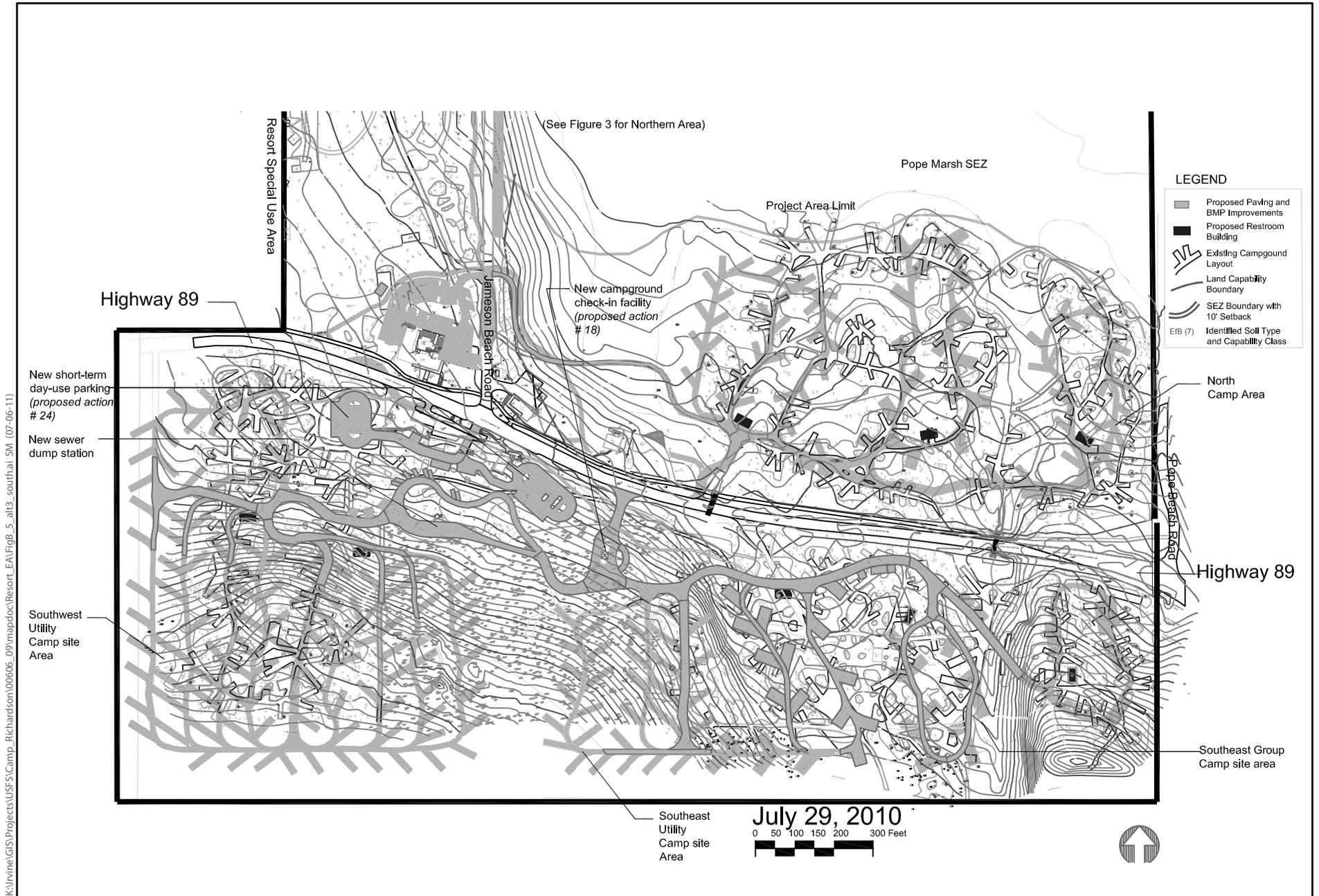


Figure B-4
Alternative 3
Camp Richardson Resort Campground and
Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit



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Figure B-5
Alternative 3
Camp Richardson Resort Campground and
Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit

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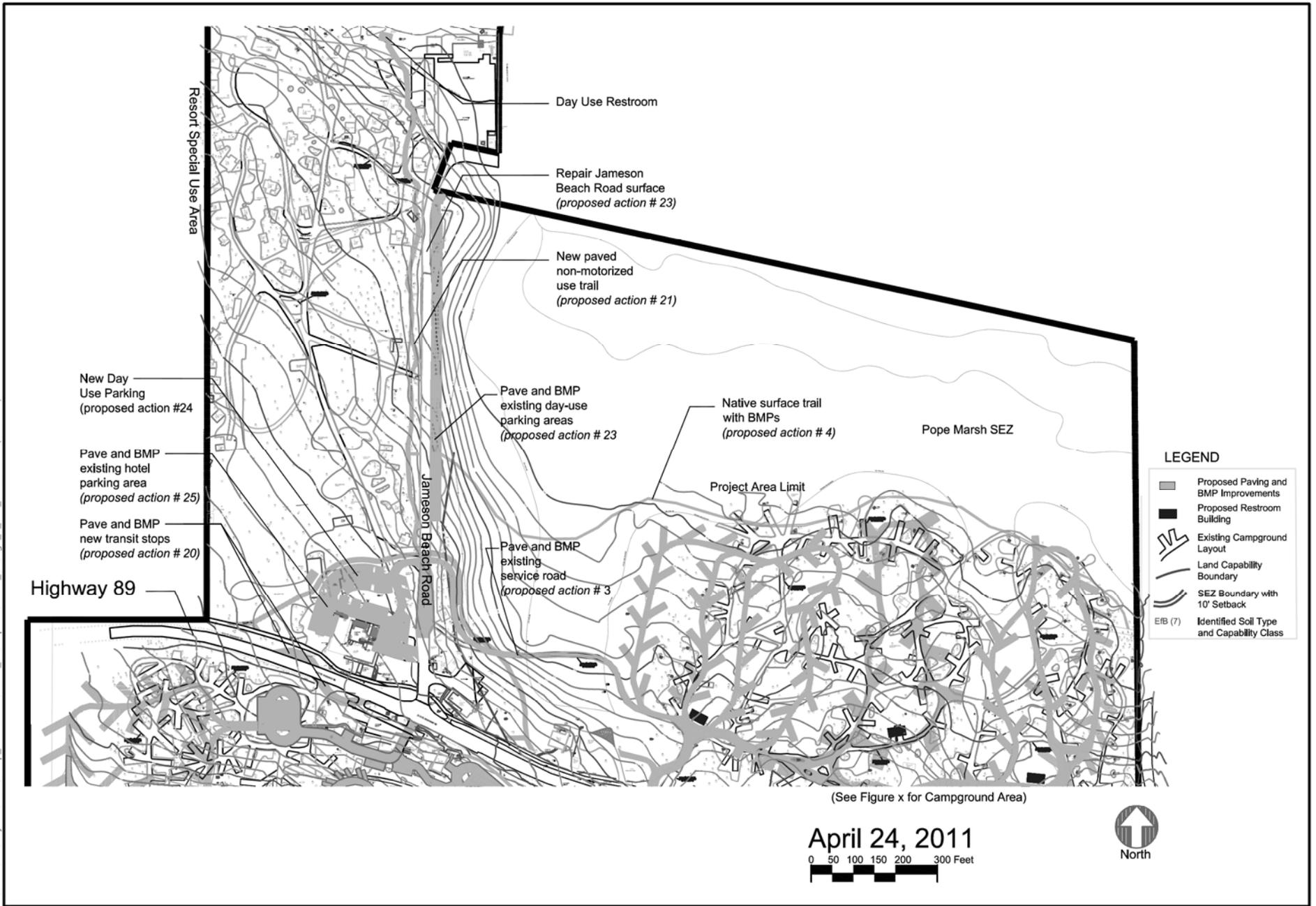
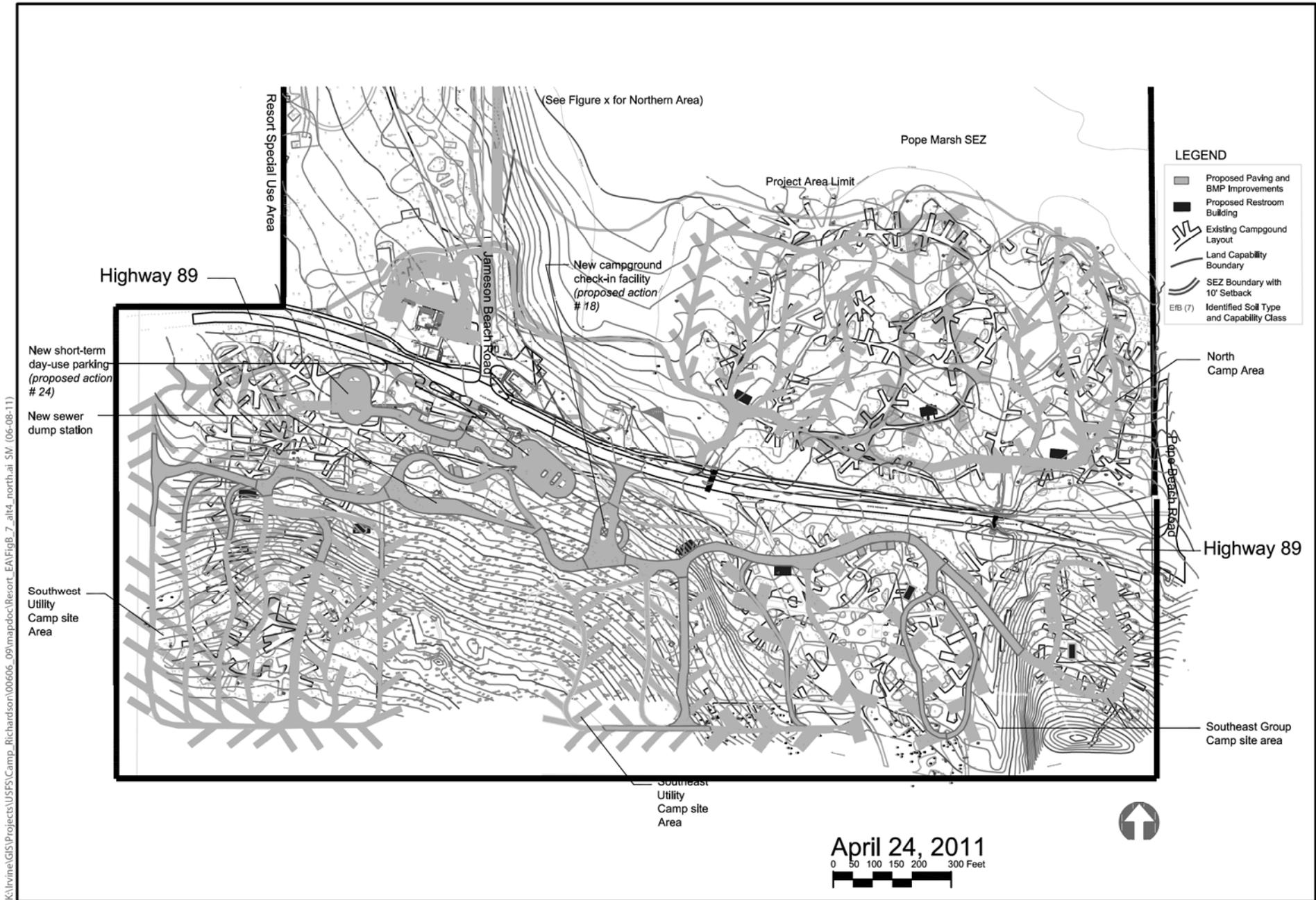


Figure B-6
Alternative 4
Camp Richardson Resort Campground and
Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit



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Figure B-7
Alternative 4
Camp Richardson Resort Campground and
Vehicle Circulation BMP Retrofit
US Forest Service - Lake Tahoe Basin Management Unit