NORTH SHORE AREA TRAIL ACCESS AND TRAVEL MANAGEMENT PLAN

Environmental Assessment

Prepared for
U.S. Forest Service
Lake Tahoe Basin Management Unit
35 College Drive
South Lake Tahoe, CA 96150
Contact: Garrett Villanueva
530/543-2600

May 2007

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Proposal, Need, and Issues

1.1 Introduction

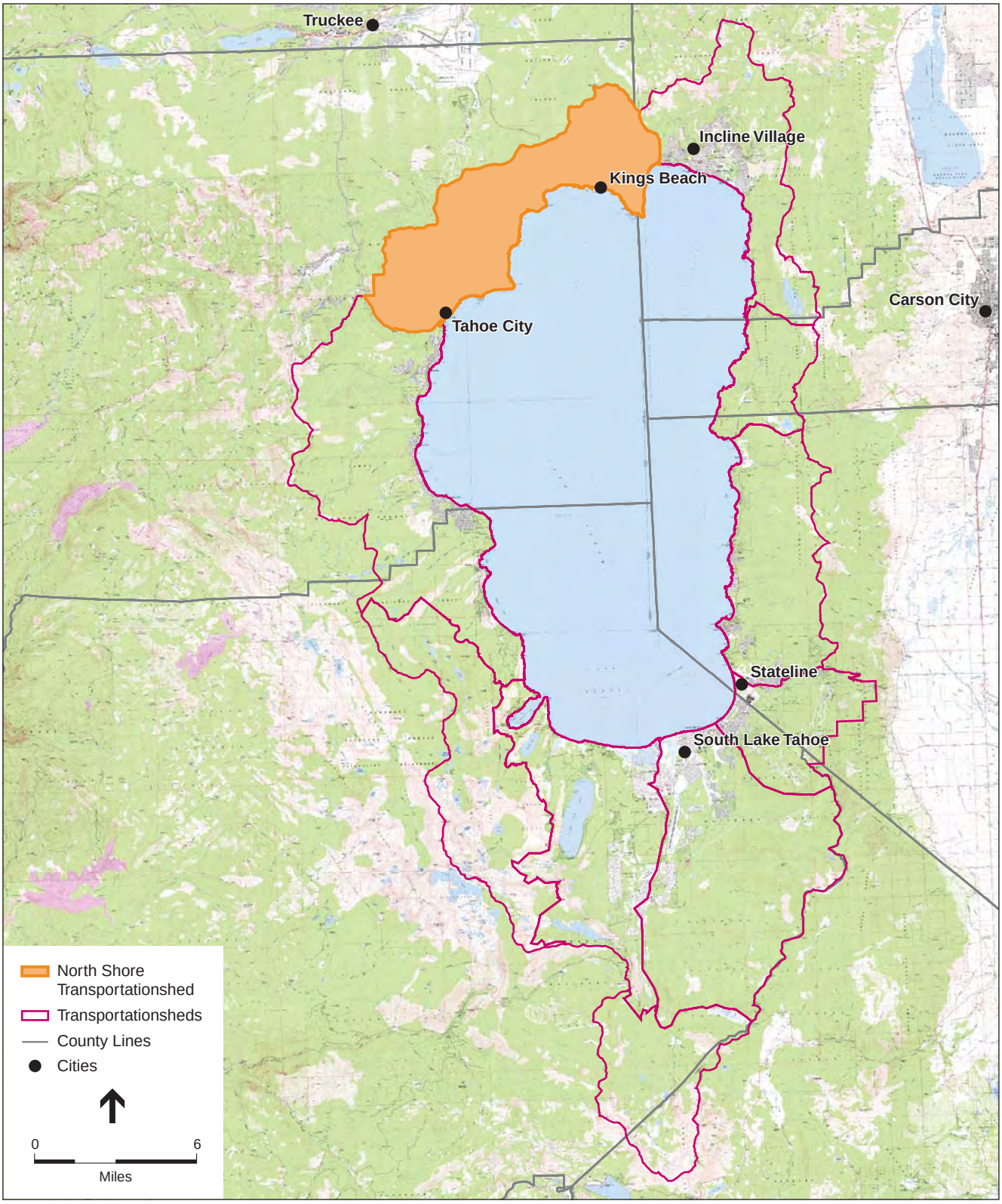
In June 1998, an *Access and Travel Management Plan* (ATM) was initiated with an inventory of all roads on National Forest lands within the Lake Tahoe Basin (Basin). In addition, a road water quality risk assessment, an internal road access needs assessment and public outreach was completed. This resulted in a map depicting a desired transportation system that minimizes environmental impacts while still providing access for administrative and recreational use.

As the ATM has developed, it has become apparent that the next logical step is to incorporate trails into the plan. The Forest Service has clear guidelines defining roads and trails; however, in the field it is often difficult to distinguish a road from a trail. Forest users do not distinguish between roads and trails when using alternative modes of transportation. Additionally, trails in some cases may contribute in the same manner as roads to significant water quality problems. Integrating trails with roads in the ATM creates a manageable transportation system that has minimal impacts on natural resources.

Since 1999, the Lake Tahoe Basin Management Unit (LTBMU) has been developing information to be considered in the ATM. In the summers of 1999, 2000, and 2001, the U.S.D.A. Forest Service (Forest Service) performed an inventory of all trails within the Basin. The inventoried trail network totals approximately 484 miles. Data was collected to perform a risk analysis relative to the potential of each trail to adversely affect water quality. The results of the risk analysis are documented in a map that evaluates the potential for each trail to adversely affect water quality.

Each trail was evaluated to determine whether it should remain as a National Forest System Trail (system trail), be adopted and managed as a system trail, or be removed from the system. Agency, natural resource, and public needs for the trails were considered, using information gathered at two public open house meetings on June 19 and 20, 2002. The inventoried and known trails were evaluated by a team of Forest Service technical specialists who considered public comments, potential risk to water quality, vegetation, wildlife, fisheries, cultural resources, and recreation in determining how to manage individual trails. Additionally, public comments were gathered and incorporated into the proposed action through individual meetings in the field and collaborative workshops.

The information described above was incorporated into the basin wide Trail ATM for all Forest Service trails in the Basin. For planning purposes, the Basin was divided into nine geographical areas (transportationsheds) based on recreational uses and water quality issues (**Figure 1-1**). The ATM prioritized these transportationsheds on the basis of resource risks. The basin wide Trail ATM for the North Shore transportationshed was used in the development of the Proposed Action addressed in this Environmental Assessment (EA), and is the second transportationshed to be evaluated by the LTBMU.



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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Figure 1-1

North Shore Transportationshed

1.2 Existing Conditions

The North Shore transportationshed (hereafter referred to as the action area) encompasses an area of approximately 14,234 acres (Figure 1-1). It includes trails near the communities of Kings Beach and Tahoe City. The existing trail system and designated uses in the action area are shown in **Figure 1-2**. Major trails in the area include the Tahoe Rim Trail, Great Ski Race, Watson Creek Trail, and Kings Beach OHV Trails. The area includes both system and nonsystem trails that receive a mix of motorized, mechanized, and non-mechanized uses.

A *system trail* is a trail managed and maintained by the Forest Service. A *nonsystem trail*, sometimes called a user-created trail, is any trail on National Forest System Lands that is not managed and maintained by the Forest Service. Currently there are 33.2 miles of system trails and 37.8 miles of nonsystem trails in the action area.

The current trail system is not interconnected, does not meet use needs, and has high impacts to resources. The current trail system has evolved over many years and some existed prior to Forest Service management. As a result the trail system is relatively unplanned and has not been designed to Forest Service Standards defined by the Forest Service Trail Handbook and the Standard Specifications for the Construction and Maintenance of Trails.

Trails can also be classified according to use-type, and include *motorized use*, *mechanized use*, and *non-mechanized use*. Currently, motorized (i.e., street-licensed off highway vehicle [OHV] or unlicensed "green-stickered" OHV) use is permitted on 10.9 miles of trail in the action area; mechanized (e.g., non-motorized devices such as mountain bikes, roller skis, dirt skates) use is not designated at this time; and non-mechanized (e.g., pedestrians, equestrians) use is permitted on 37.5 miles of trail in the action area. In this document, mechanized uses and non-mechanized uses are combined into a single category and designated as *multiple use*. Mountain bike use is not permitted in the Mountain Rose Wilderness and on the Pacific Crest Trail, both which are outside of the action area.

1.3 Purpose and Need

The purpose of the proposed action is to improve Lake Tahoe's water clarity and quality and to protect soil resources, while meeting current and future trail need through the establishment of a sustainable, adaptable trail system. At Lake Tahoe, many trails existed prior to public ownership and Forest Service management or were developed solely and independently by users. Consequently, many trails do not meet current trail design standards and current needs. Erosion from improperly located, designed, and constructed or maintained trails can cause significant impacts on water quality. Moreover, adverse water quality and soil impacts are caused by off-route use of mechanized and motorized vehicles. The proposed action would designate trail uses and provide a logical trail system for all users to ensure high quality recreation opportunities while minimizing impacts to the natural resources of the Lake Tahoe Basin. High quality recreation opportunities include loop connections, vista access, access to National Forest System lands, minimal potential for use conflicts, and providing a spectrum of opportunities.

Decommissioning (closing and rehabilitation) of unnecessary trails or trails that are not sustainable and constructing water quality upgrades on trails that remain on the trails system would provide important water quality improvements for the basin. Additionally, decommissioning

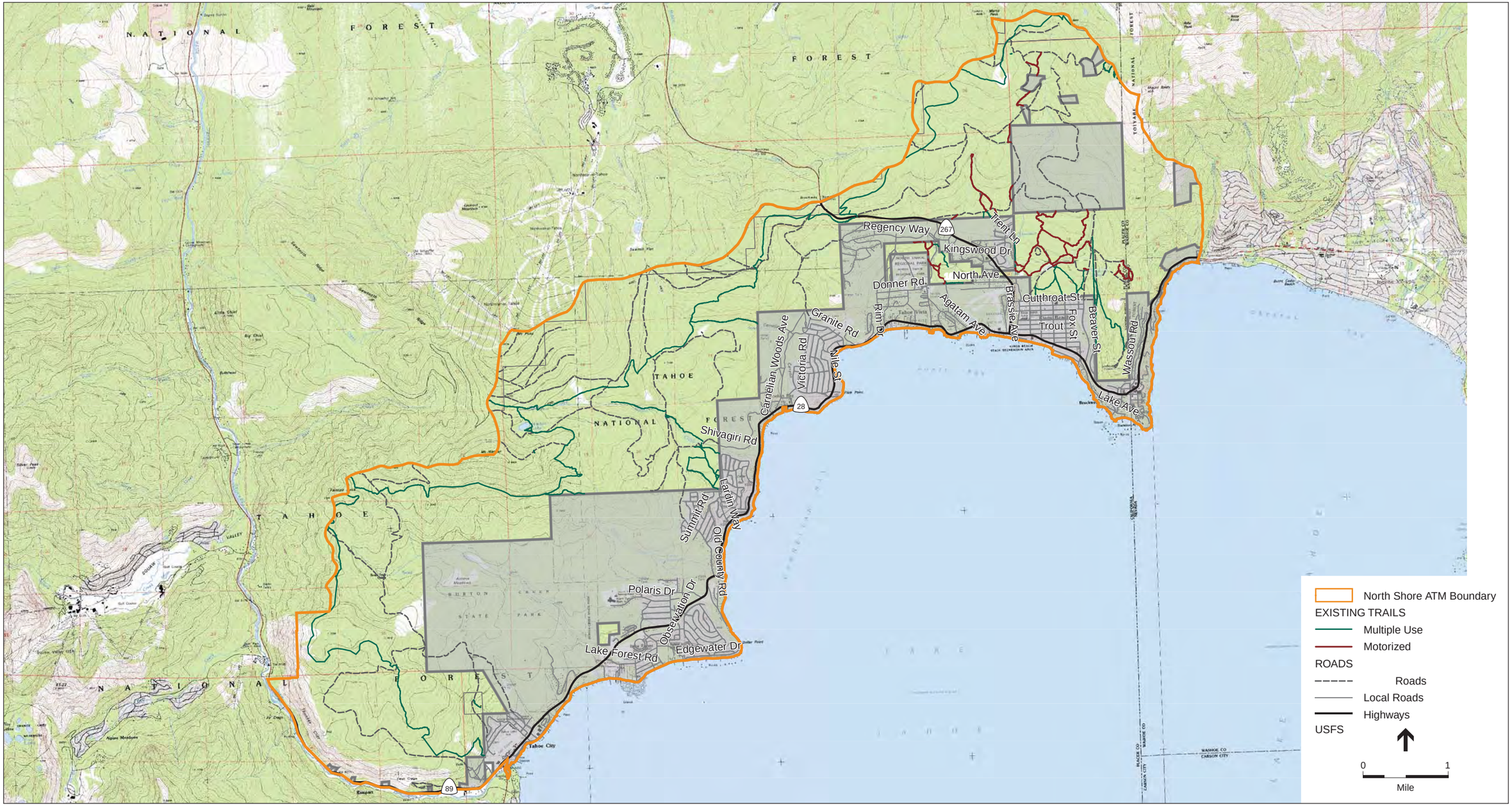
trails within sensitive ecosystem areas and constructing new trails in areas of higher capability will minimize impacts to natural and cultural resources. Careful design and location can provide universal access opportunities and accommodate desirable trail attributes such as scenic vistas. Development of a trail system that is designed and located using the most up to date information will improve the quality of the recreation experience, improve recreation access to National Forest System Lands, reduce impacts to resources, reduce future maintenance requirements, and preserve multiple use (including OHV) trail opportunities.

Action by the Forest Service is needed at this time to reverse the degradation of Lake Tahoe's famed water clarity. The clarity of Lake Tahoe is currently decreasing at an estimated rate of 1.2 feet per year. Researchers predict that if the degradation is not stopped soon, it will not be feasible or economical to be reversed (Lake Tahoe Basin Watershed Assessment 2000). Consequently, meaningful action must occur now. This proposed action covers the 14,234 acre North Shore transportationshed.

The Lake Tahoe Basin Management Unit (LTBMU) has prioritized transportationsheds based on risk to resources and importance for recreation development. An analysis of the risk to water quality is documented in the ATM. Nine trail areas that cover the entire Basin are identified in the ATM. The Freel/Meiss transportationshed has been analyzed and implementation is ongoing and expected to be completed in 2007. The North Shore action area has been prioritized for implementation as early as the 2007 field season. The action area boundary is identified in Figure 1-1. The North Shore transportationshed is the focus of this analysis; only trails within this area will be assessed in this EA.

The Lake Tahoe Basin Management Unit is revising the trail system in the action area to establish a trail system that is integrated with forest ecology to minimize impacts while providing sustainable recreation access for multiple uses on National Forest. The following defines the purpose of this proposed action:

- Minimize soil erosion and compaction of soils resulting in loss of soil productivity and sedimentation of waterways, riparian areas and wetlands.
- Minimize spread of invasive non-native and noxious weeds along travel routes.
- Minimize disturbance, displacement of artifacts, destruction, and malicious access (including theft) to historic and archaeological sites.
- Improve habitat for focal plant and wildlife species.
- Develop trail systems to minimize trail use conflicts.
- Provide an interconnected trail system including loops and connector trails.
- Develop a trail system that meets Forest Service design standards, reduces maintenance needs, and takes advantage of natural features such as vistas or interesting areas to provide quality recreation opportunities.
- Improve and create universal trail access opportunities consistent with Forest Service Outdoor Recreation Access Guidelines.
- Improve the OHV trail system by providing loop connections and improving interconnectivity with the road system.
- Prohibit wheeled vehicle travel (including bicycles) off of designated roads, trails, and limited OHV use areas (SNFP ROD, Standards and Guideline 69, page 59).
- Establish an adaptable trail system that meets current and future uses.



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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Figure 1-2

North Shore ATM Existing Trails and Use

1.4 Proposed Action

Overview

In the North Shore transportationshed, both system and nonsystem trails that contribute to water quality problems would be addressed under the proposed action. A sustainable trail system will be established upon completion of the proposed action. Both sustainable development and environmentally sustainable principals are incorporated into this plan. Sustainable development is the process of balancing human needs with protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future. Environmental sustainability is the ability of the environment to function indefinitely. Five different management actions are being considered for the proposed action, including construction of new trails, trail decommissioning, conversion and upgrade from nonsystem to system trails, reconstruction and/or rerouting of trail segments, and designation of trails as Urban Trails (**Figures 1-3A through 1-3D)**. In addition, trails will be designated by use-type (as defined previously) (**Figure 1-4**). Redevelopment of the existing trail system will reduce or eliminate potential use conflicts and reduce impacts to resources. Further, by establishing logical trail connections, more loop opportunities will be available. Rerouting trails out of riparian zones will increase accessibility to trails during the shoulder season, because they will not be wet. Lastly the trail system is being redeveloped to provide a spectrum of opportunities for appropriate uses.

Proposed Use Designations

Motorized Use

Under the proposed action, a total of 4.3 miles of trail are designated for motorized use. Motorized and mechanized uses are also permitted on seasonally open public Forest Service roads; however, non-street legal OHVs are prohibited by federal and state regulations on paved roads. Currently motorized users (motorcycles and all terrain vehicles less than 50" wide) are generally confined to the Kings Beach OHV area. A total of approximately 4 miles of trail are open to motorized use. The native surface roads in the area are also open to OHV use. While the proposed changes will allow approximately the same mileage of OHV trails, the trails will better connect to the native surfaced roads for more loop opportunities and better access to the larger Public Forest Service Road system. This environmental analysis addresses proposed changes to trails only and the road system would not be changed as a result of this project. See Table 1-8 for proposed motorized use trails.

Multiple Use

The proposed action would designate 50.0 miles of trails as multiple use trails, allowing both mechanized uses (i.e. mountain bikes) and non-mechanized uses (i.e. foot, equestrian). All nonsystem trails and off-route (cross-country) uses would be closed to both mechanized and motorized travel. Currently, use is dominated by hikers and mountain bikers. While there are currently more hikers, anecdotal information indicates that mountain bikers are traveling more miles on trails than hikers. It is important to design trails to meet the current uses and the trails in

the area will be redesigned to better accommodate mountain bike use while maintaining important characteristics for hiking use and providing clearing limits for equestrian use. Redesigning trails to accommodate mountain bike use includes designing the trails to meet Forest Service standards, constructing trails to flow (without abrupt speed changes such as sharp corners after a long straight section) and using speed calming techniques to reduce the speed differential between users.

Proposed Actions

The proposed action entails the following actions in the North Shore action area. These actions are scheduled to begin as soon as the 2007 construction season and to be completed by October 2008.

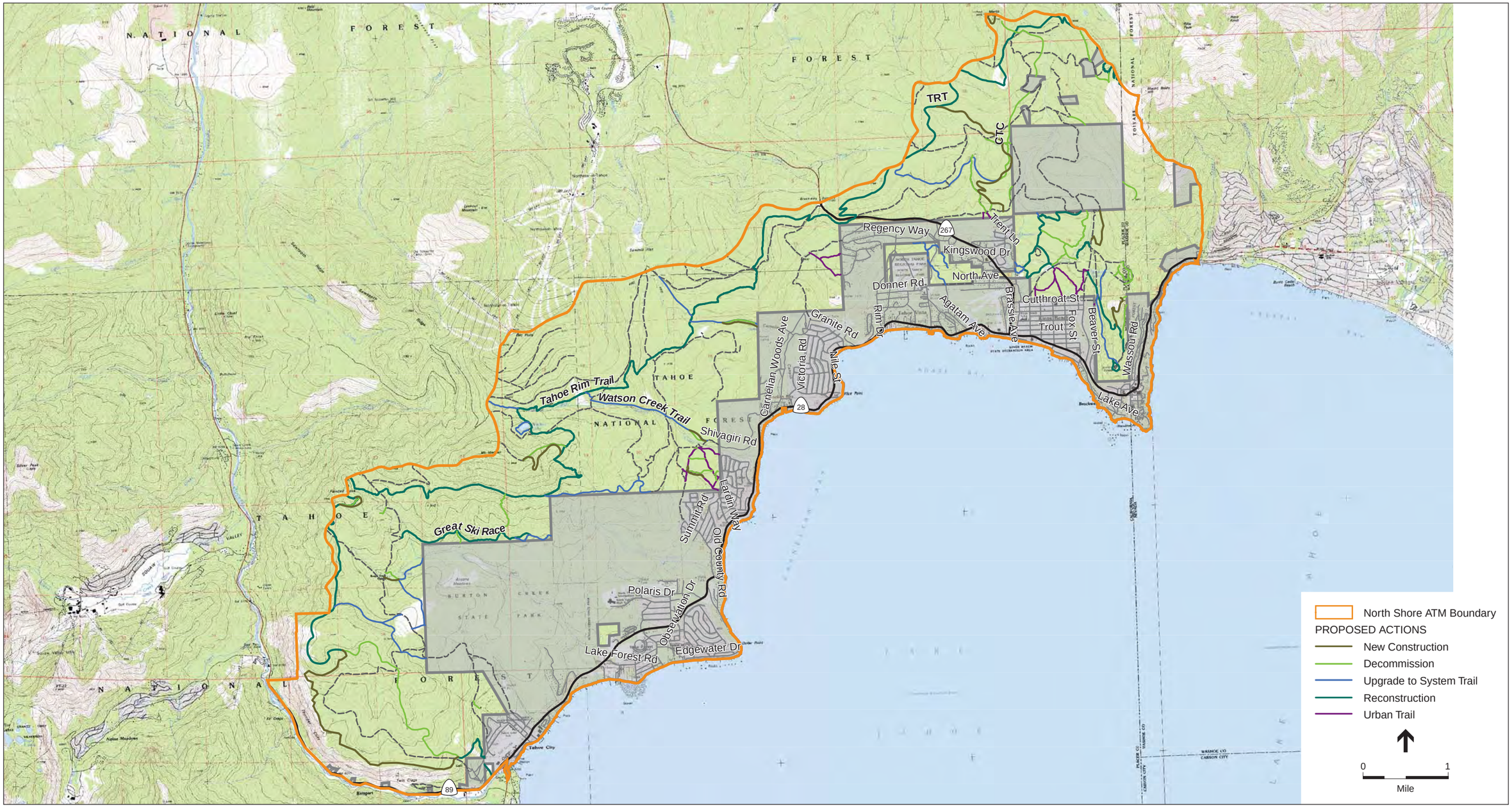
- Decommissioning of 14.5 miles of existing trails.
- Proposed conversion of 13.4 miles of trail to Forest Service trail system for monitoring and maintenance.
- Construction of up to 9.6 miles of new trails (including reroutes), including 0.4 miles of universal access trail to Martis Peak Lookout.
- Classification of 5.0 miles of existing nonsystem trails as urban trails.
- System trail repairs and reconstruction on 26.3 miles of trail in the project area, including 0.3 miles of universal access trail to Stateline Peak Lookout.
- Updated trail signage and trail information kiosks at selected trailheads.
- Development of optional or parallel alignments for short sections of trails to provide challenge, reduce potential use conflict, and reduce the occurrence of user created trails. Optional alignments will be designed to take advantage of natural features to create challenging trail sections or technical trail features.

Decommissioning

Trail decommissioning is achieved through blocking and recontouring. Often, small diameter trees are felled across trails to discourage continued access. Additionally, appropriate signage is posted on closed trails or the trail will be blocked and camouflaged using native materials. Trail tread will be broken and loosened prior to recontouring to reduce surface compaction. Decommissioning will be conducted with hand tools such as chainsaws, grip hoists, rock bars, and shovels and small motorized equipment where appropriate.

Upgrades, Reroutes, and Conversions

The upgrade and conversion of nonsystem trails to system trails will reduce impacts on water quality from existing trails through implementation of trail design standards, Best Management Practices (BMPs), and periodic maintenance. Reroutes are defined as replacing existing trails more than 1,000 feet from their existing locations to reduce impacts on water quality. Relocation of trails less than 1,000 feet from existing locations is considered maintenance and does not require analysis; however, specialist consultation will occur prior to any activities to prevent negative resource impacts.



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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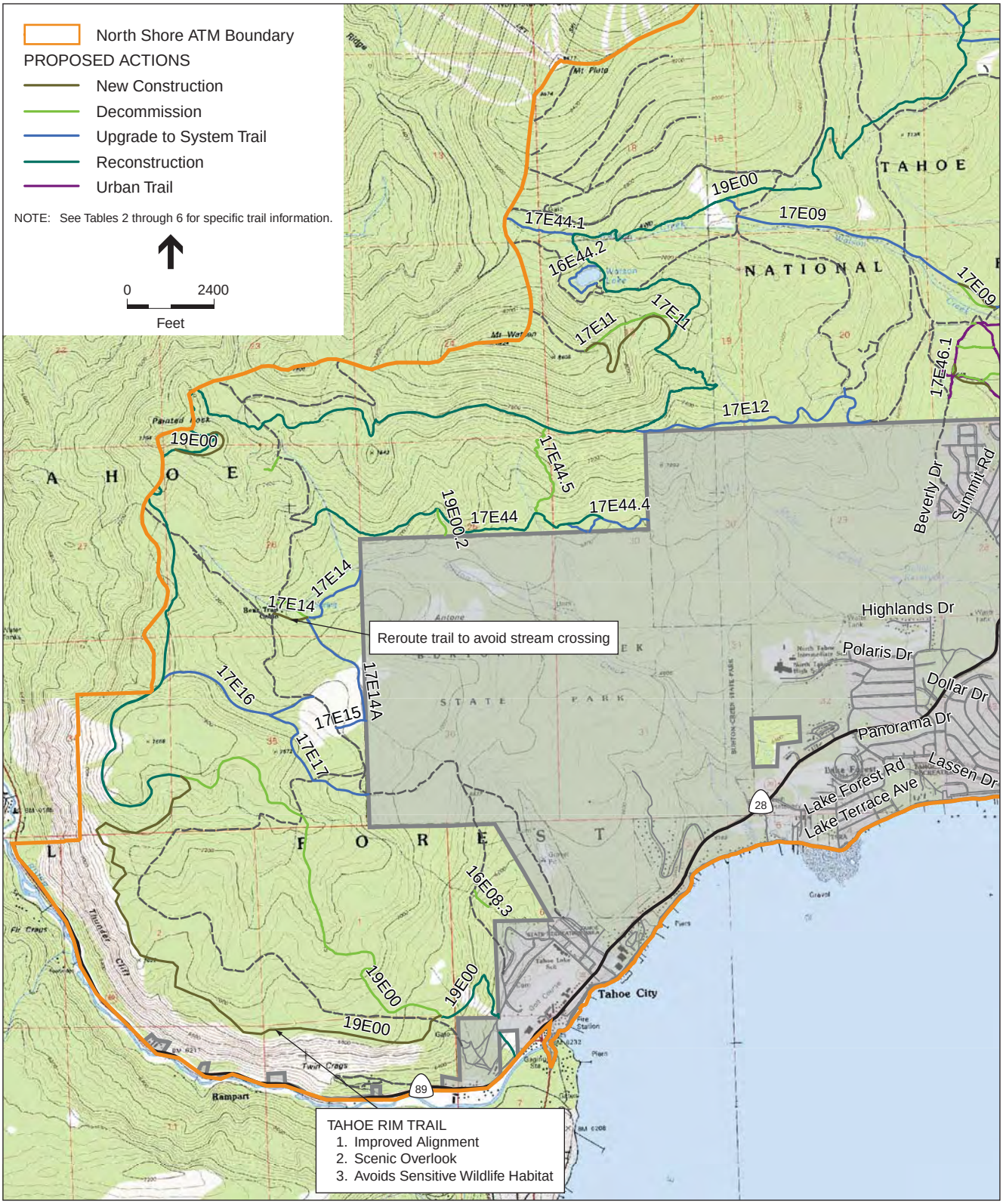
Figure 1-3A

Proposed Action Overview



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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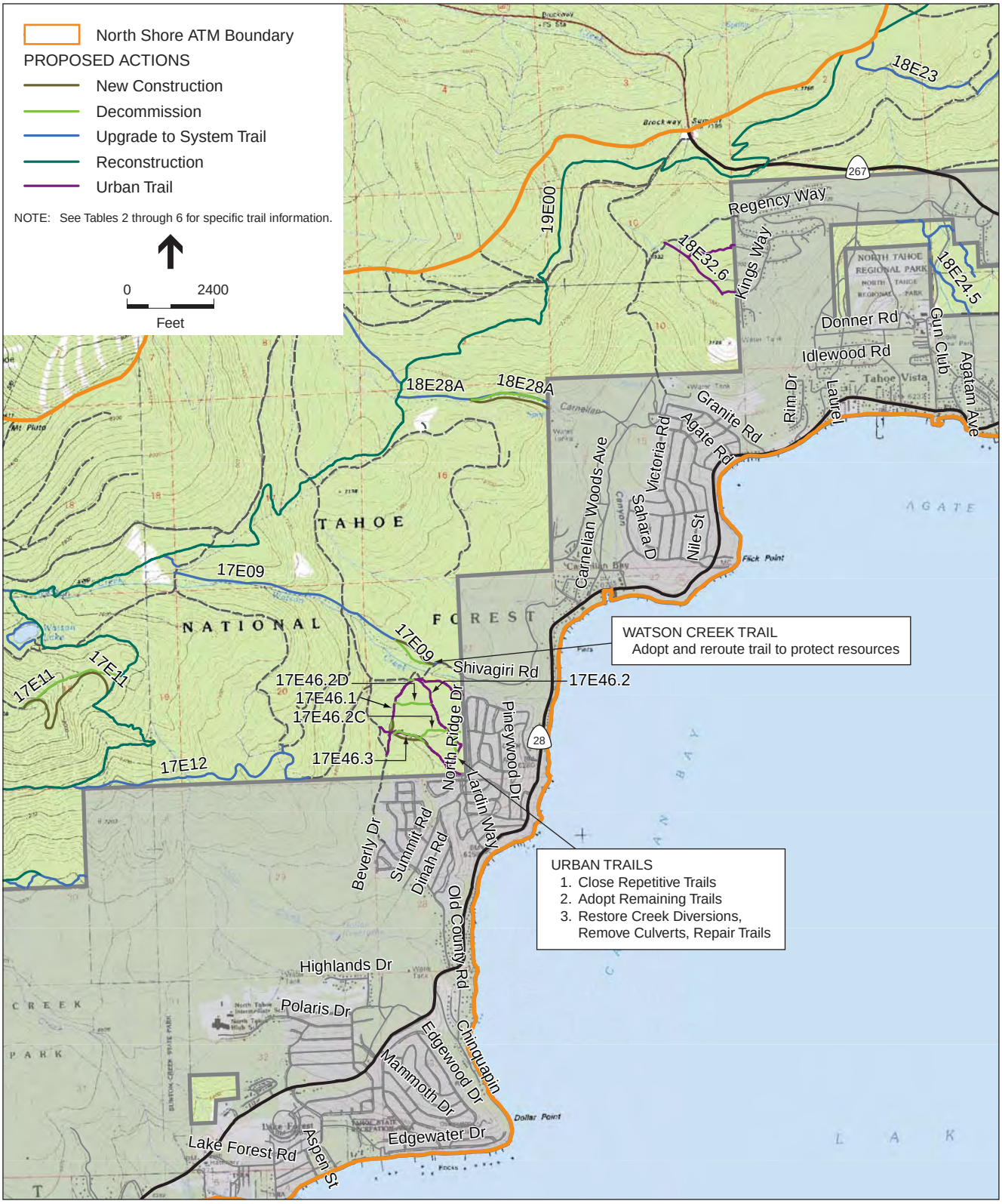
Figure 1-3B

Proposed Action – West Section



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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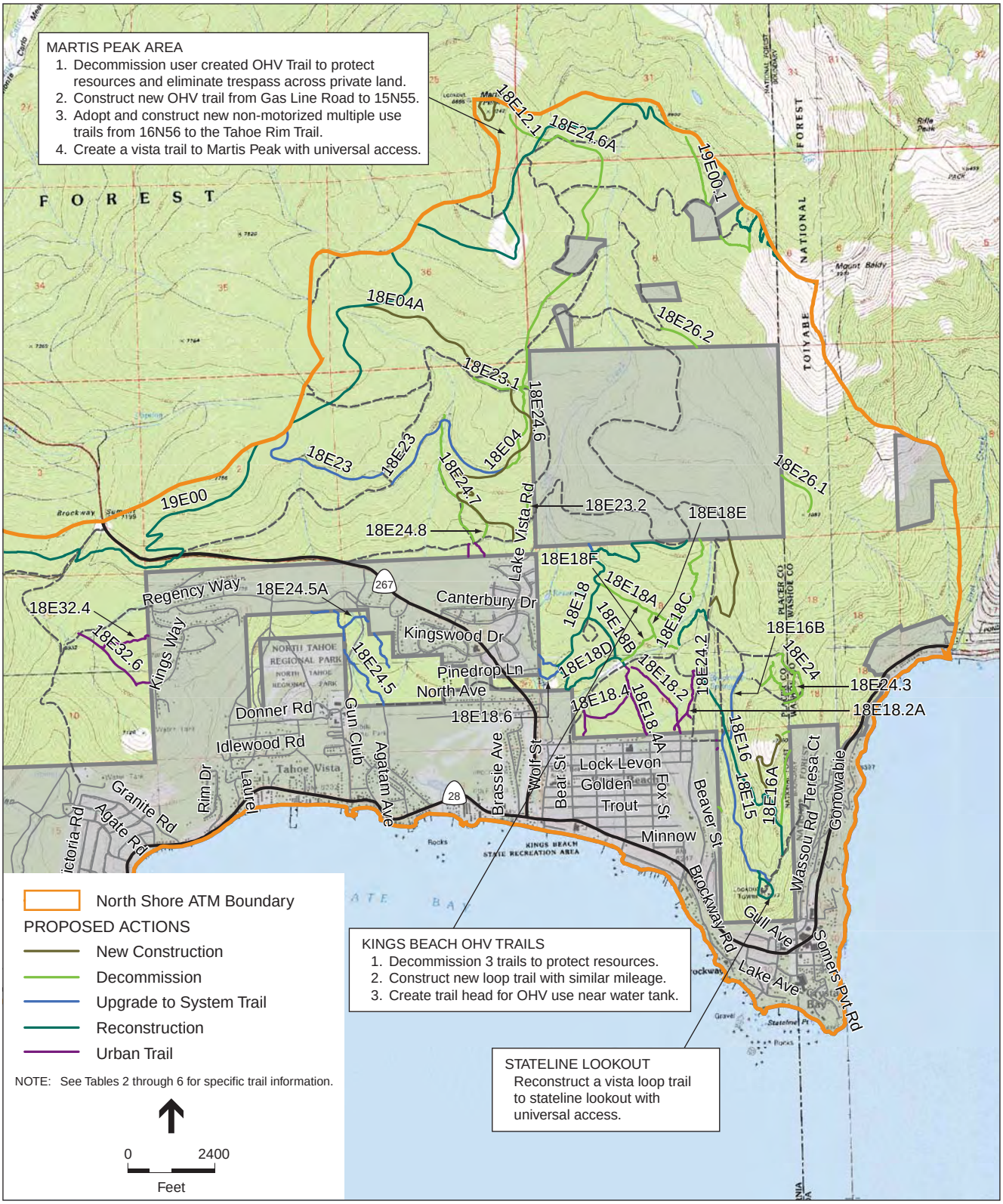
Figure 1-3C

Proposed Action – Central Section



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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Figure 1-3D

Proposed Action – East Section

All treatments are designed to improve water quality through the installation of BMPs, reduction of trail coverage, and improved stream function at crossing sites. Wherever possible, the enhancement, protection, and reduction of coverage in Stream Environment Zones (SEZs) are primary design considerations. All prescribed BMPs are considered best available treatments for protecting water quality.

Implementation of system trail upgrades will include updated trail signage and trail information kiosks at selected trailheads. Trail signs will be posted at junctions of system trails so that users may stay on designated trails. Trail kiosks posted at main trailheads will provide information such as locations of designated trails, restrictions, and etiquette. It is expected that by improving signage, water quality and soils will be further protected by reducing off-route impacts.

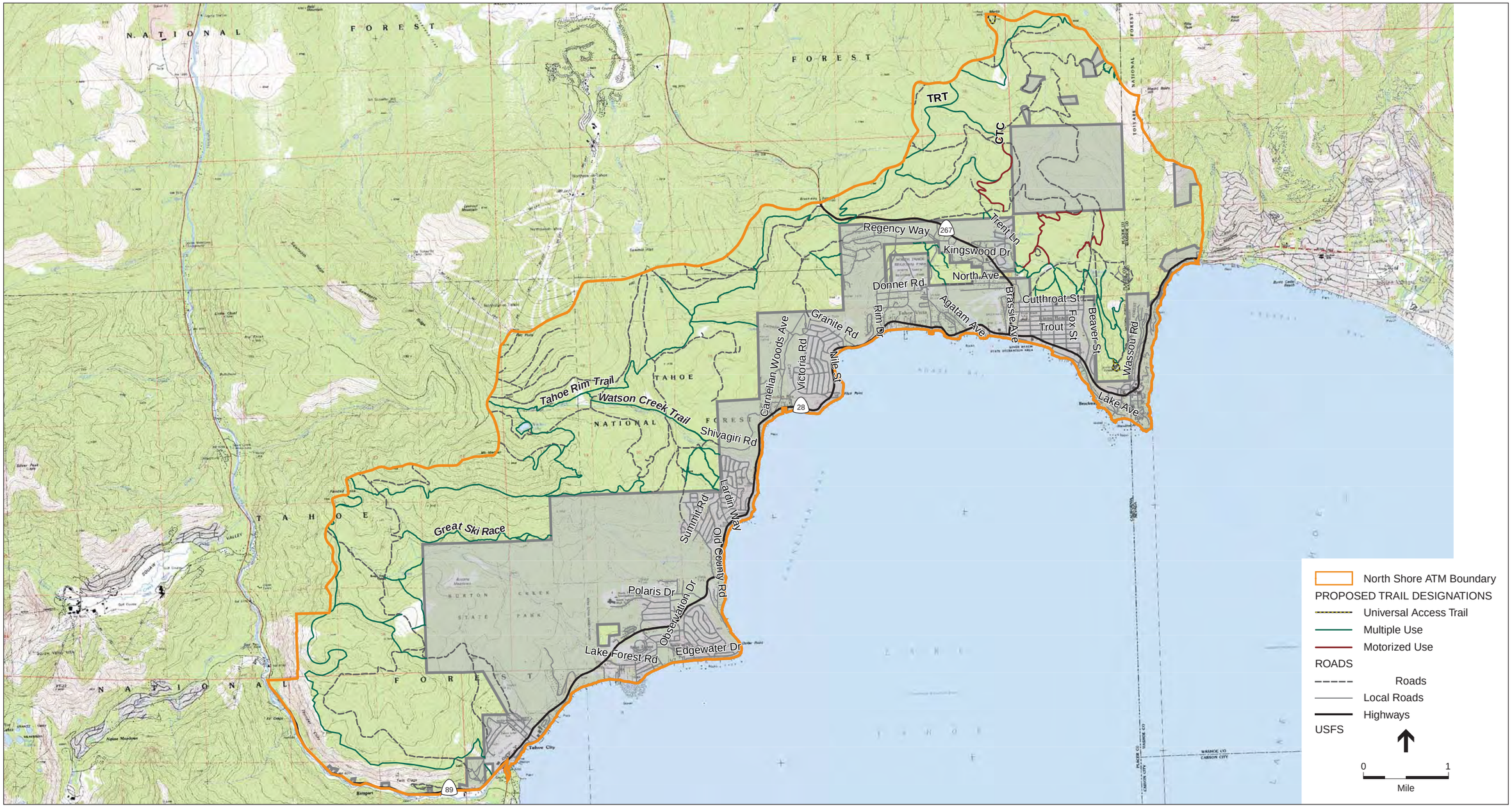
Neither trail decommissioning nor system conversion changes winter land use allocations or trail use. If an area was previously open or closed to snowmobile use, that use allocation would continue. Motorized summer use will continue to be restricted to designated trails.

Urban Trails

Where the National Forest boundary abuts neighborhoods or other urban development within the action area, nonsystem trails will be considered for management as urban trails. In these interface areas, a network of urban trails will access forest and other trails. The Forest Service recognizes the value of these trails for public access. These trails would be managed through periodic inspection by the Forest Service and maintained by volunteers. Urban trails would be managed as primitive system trails. Urban trails that have been identified as risks to water quality would be upgraded or decommissioned to reduce the risk. Urban trails that pose low risk to water quality would remain as urban trails. All urban trails will be considered open to mechanized travel and designated as multiple use trails. An adopt-a-trail program is being developed to address volunteer maintenance on these trails.

Proposed Management Actions

Tables 1-1 through **1-5** show proposed actions for specific trails in the action area. **Table 1-6** provides an overview of proposed actions. **Tables 1-7** and **1-8** show proposed uses for specific trails in the action area. They are organized by proposed use designation; these trails also may appear in Tables 1-1 through 1-5. Certain trails may have multiple proposed management actions because different sections of the trail have different actions proposed. Figures 1-3A through 1-3D show the proposed management actions, while Figure 1-4 shows the designated trail uses in the transportationshed following implementation of the proposed action. In the tables below, trails designated with an asterisk (*) are not labeled in Figures 1-3A through 1-3D because their short length (0.1 mile or less) does not allow unambiguous identification at the scale of the figures.



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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Figure 1-4

Proposed Trail Designations

TABLE 1-1
TRAIL SEGMENTS PROPOSED FOR DECOMMISSION IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Length (miles)
18E18E	0.3
18E24.7	0.8
18E24.6	0.8
18E24.8	0.3
17E46.2C	0.2
17E44.5	0.6
16E08.2*	0.1
19E00.1	0.7
18E24.3	0.4
18E24.1C*	0.1
18E18A	1.0
17E46.2D	0.2
16E08.3*	0.1
17E46.1A*	0.1
17E46.2B*	0.1
18E24.3B*	0.1
18E24.3A*	0.1
17E46.2A*	0.1
18E24.6A	1.3
18E24	0.4
18E16A	0.4
18E23.1	0.3
18E23.2	0.2
18E12.1	0.2
CTC*	0.1
18E26.1	0.3
18E26.2	0.2
17E46.1*	0.1
17E11	0.6
19E00.2	0.2
17E14	0.2
19E00	0.3
17E46.3	0.2
17E09	0.2
18E28A	0.4
18E18F	0.2
19E00	2.6
Total	**14.5**

TABLE 1-2
TRAIL SEGMENTS PROPOSED TO BE CONVERTED TO URBAN TRAILS IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Length (miles)
18E32.2*	0.1
18E32.1*	0.1
18E32.4	0.3
17E46.1	0.8
17E46.3	0.5
17E46.2	0.6
18E18.2A	0.4
18E18.2	0.5
18E18.4B*	0.1
18E24.2A*	0.1
18E24.2B*	0.1
18E18.4	0.5
18E18.4A	0.3
18E32.5*	0.1
18E18.2B*	0.1
18E32.6	0.4
Total	**5.0**

TABLE 1-3
TRAIL SEGMENTS PROPOSED FOR RECONSTRUCTION IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Trail Class	Length (miles)
18E18C	3	0.3
18E18B	3	0.3
18E18D	3	0.5
18E18	3	1.4
19E00	2	19.7
19E00	2	0.8
17E44	2	1.8
18E16	2	1.2
Stateline Lookout Trail	4	0.3
Total		**26.3**

TABLE 1-4
NONSYSTEM TRAILS PROPOSED FOR SYSTEM CONVERSION IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Trail Class	Length (miles)
18E24.5A	2	0.2
18E24.5	2	0.8
17E44.1	2	0.4
18E18.1*	2	0.1
18E18.6	2	0.3
17E44.4	2	0.5
16E44.2	2	0.4
18E16B	2	0.4
18E15	2	0.9
18E23	2	0.9
18E23	2	0.8
N/A		0.6
18E28A	2	0.8
17E09	2	1.5
17E09A*	2	0.1
17E12	2	1.6
17E12A*	2	0.1
17E14	2	0.4
17E14A	2	0.7
17E15	2	0.2
17E16	2	0.9
17E17	2	0.8
Total		**13.4**

TABLE 1-5
TRAIL SEGMENTS PROPOSED TO BE CONSTRUCTED IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Trail Class	Length (miles)
18E16A	2	0.5
18E04	2	1.6
18E04A	2	0.8
17E46.1*	2	0.1
17E11	2	0.8
17E14	2	0.2
19E00	2	0.4
17E46.3	2	0.2
17E09	2	0.2
18E28A	2	0.4
N/A		0.6
19E00	2	3.4
Martis Peak Vista Trail	4	0.4
Total		**9.6**

TABLE 1-6
SUMMARY OF PROPOSED CHANGES IN THE NORTH SHORE TRANSPORTATIONSHED

Action	Cumulative Mileage
Planned Decommission	14.5
Urban Trail	5.0
System Conversion	13.4
Reconstruction	26.3
New Construction	9.6
Existing System Trail Mileage	**33.2**
Existing Nonsystem Trail Mileage	**37.8**
Proposed System Trail Mileage	**54.3**

TABLE 1-7
PROPOSED MULTIPLE USE TRAILS IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Length (miles)	Proposed Management
18E32.2*	0.1	Urban Trail
18E32.1*	0.1	Urban Trail
18E32.4	0.3	Urban Trail
18E24.5A	0.2	Planned Upgrade
18E24.5	0.8	Planned Upgrade
17E46.1	0.8	Urban Trail
17E46.3	0.5	Urban Trail
17E46.2	0.6	Urban Trail
17E44.1	0.4	Planned Upgrade
18E18.2A	0.4	Urban Trail
18E18.2	0.5	Urban Trail
18E18.4B*	0.1	Urban Trail
18E24.2A*	0.1	Urban Trail
18E24.2B*	0.1	Urban Trail
18E18.4	0.5	Urban Trail
18E18.4A	0.3	Urban Trail
18E18D	0.5	Reconstruction
18E18.6	0.3	Planned Upgrade
17E44.4	0.5	Planned Upgrade
16E44.2	0.4	Planned Upgrade
17E44	1.8	Reconstruction
18E32.5*	0.1	Urban Trail
18E18.2B*	0.1	Urban Trail
18E16B	0.4	Planned Upgrade
18E15	0.9	Planned Upgrade
18E16A	0.5	New Construction
18E16	1.2	Reconstruction
18E23	0.9	Planned Upgrade
18E23	0.8	Planned Upgrade
18E04A	0.8	New Construction

TABLE 1-7
PROPOSED MULTIPLE USE TRAILS IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Length (miles)	Proposed Management
18E32.6	0.4	Urban Trail
N/A	0.6	Planned Upgrade
18E28A	0.8	Planned Upgrade
17E46.1*	0.1	New Construction
17E09	1.5	Planned Upgrade
17E09A*	0.1	Planned Upgrade
17E11	0.8	New Construction
17E12	1.6	Planned Upgrade
17E12A*	0.1	Planned Upgrade
17E14	0.4	Planned Upgrade
17E14A	0.7	Planned Upgrade
17E15	0.2	Planned Upgrade
17E16	0.9	Planned Upgrade
17E17	0.8	Planned Upgrade
17E14	0.2	New Construction
19E00	0.4	New Construction
17E46.3	0.2	New Construction
17E09	0.2	New Construction
18E28A	0.4	New Construction
19E00	3.4	New Construction
19E00	19.7	Reconstruction
19E00	0.8	Reconstruction
Stateline Lookout Trail	0.3	Reconstruction
Martis Peak Vista Trail	0.4	New Construction
Total	**50.0**	

TABLE 1-8
PROPOSED MOTORIZED USE TRAILS IN THE NORTH SHORE TRANSPORTATIONSHED

Trail Number	Length (miles)	Proposed Management
18E18C	0.3	Reconstruction
18E18.1*	0.1	Planned Upgrade
18E18B	0.3	Reconstruction
18E18	1.4	Reconstruction
18E04	1.6	New Construction
NA	0.6	New Construction
Total	**4.3**	

In the Martis Peak area, proposed management actions include the closure of user-created OHV trails to protect resources and eliminate trespass across private land. A new OHV trail would be constructed from Gas Line Road to trail 16N55. From trail 16N56 to the Tahoe Rim Trail, new multiple use trails will be adopted and constructed. Finally, a new vista trail will be created to Martis Peak, allowing universal access. See Figure 1-3 D.

Three OHV trails near King's Beach would be decommissioned to protect sensitive resources in the trails' vicinity. A new loop trail, with similar mileage to the decommissioned trails, would be constructed in a less sensitive area to replace those closed trails. Also, a new trailhead for OHV use would be created near the water tank. The new trails will be designed to improve the recreation opportunities and access for both motorized and non-motorized uses. Finally, an existing trail to Stateline Lookout will be reconstructed to allow for universal access. See Figure 1-3D.

For trails to be converted from nonsystem trails to Urban Trails, repetitive trails will be closed, and the remaining trails will be converted to system trails. Repairs to be completed include restoring creek diversions and the removal of culverts

The Watson Creek trail (17E09), which parallels Watson Creek from Carnelian Bay to the Tahoe Rim Trail, will be adopted as a system trail and rerouted to protect sensitive resources in the area. Similar management actions are planned for the Watson Lake Trail.

The Great Ski Race Trail (17E44), located just north of the boundary for Burton Creek State Park, will be reconstructed to repair recurring problem areas and avoid sensitive natural resources.

Portions of the Tahoe Rim Trail (19E00) west of Tahoe City will be rerouted in order to improve the alignment, improve recreation opportunities, meet current/future needs, access great scenic overlooks, and avoid sensitive wildlife habitat. The remaining portions of the existing trail will be reconstructed in areas to address water quality impacts.

Monitoring Program

The following describes the implementation and effectiveness monitoring that is recommended as part of this project. The objectives of this monitoring are to:

- Determine whether trail decommissioning and upgrades are successful in protecting and improving soil and water quality, and identify areas where additional work may be needed.

- Determine how trail improvements have affected visitor experience and satisfaction.

The following are the specific monitoring questions the monitoring program should answer. The approach used to evaluate soil and water impacts will be similar to that utilized in the Roads Monitoring program (Forest Service, 2007) which used a combination of methods including 1) qualitative water risk assessments, 2) Region 5 BMPEP monitoring protocols, and 3) the Watershed Erosion Prediction Project (WEPP) Model to predict changes in runoff and sediment loading as a result of the project. The approach used to evaluate visitor experience and satisfaction will utilize a visitor survey questionnaire to answer the following question as it relates to a variety of factors affecting visitor experience.

Soil and Water Monitoring

(1) Has the implementation of Trail Decommissioning and Best Management Practices (BMP) Upgrades reduced the potential for water quality impacts, and to what degree were permanent trail BMPs successfully implemented and effective? (Water Quality Risk Assessment, BMPEP evaluations)

(2) What impact do trails within the North Shore ATM project have on sediment loading to Lake Tahoe, and how successful are BMP retrofits and decommissioning in mitigating those impacts? (WEPP Modeling)

(3) Are Temporary BMPS being adequately designed, implemented and maintained during construction projects? (BMPEP evaluations).

Visitor Experience Monitoring

(1) Did the majority of visitors have a positive recreational experience as a result of trail upgrades?

Pre-project monitoring will consist only of Water Quality Risk Assessments. Temporary BMP monitoring will be implemented during project construction, and will include storm events if they occur. Post project monitoring will be conducted the first year after project construction. Specific monitoring plans identifying specific monitoring protocols, sampling locations, sampling frequency, analysis techniques, and reporting will be completed prior to project implementation. An Office of Management and Budget (OMB) approved visitor survey will be developed to assess degree of use conflict, trail conditions, signage, and achievement of desired user experiences.

1.5 Decision to be Made

The responsible official for implementation of the ATM in the Basin is the Forest Supervisor of the LTBMU. Based on the analysis provided in this EA, the Forest Supervisor will decide whether to implement the proposed action or an alternative to the proposed action as described in this EA.

1.6 Public Involvement

The National Environmental Policy Act (NEPA) requires public notification and scoping to identify topics to be addressed in the EA and to determine its scope of analysis. The initial scoping (request for comments) period began on October 24, 2005, and ended on November 30, 2005. Public scoping included a scoping letter mailed on October 28, 2005, to interested parties requesting comments and issues by November 30, 2005, for consideration in the North Shore ATM EA. The Forest Service held one public meeting to gather information and comments that helped to shape this proposed action on November 3, 2005, at the North Tahoe Conference Center in Kings Beach. Information from this outreach was used in development of the ATM. The proposed action would implement a portion of the ATM. A separate NEPA analysis will be prepared for each action area or transportationshed.

As part of the scoping process for the proposed action, an initial scoping letter was sent to interested individuals and agencies on October 28, 2005. Parties contacted in the scoping process included all the outdoor retailers on the North Shore of Lake Tahoe (via phone calls) as well as The Sierra Club and League to Save Lake Tahoe. Additionally, public notices were placed in the Tahoe Daily Tribune, the Tahoe World, and the North Lake Tahoe Bonanza on October 28, 2005. The scoping letter clarified that individuals desiring to remain on the mailing list for receipt of the EA would need to respond to the letter. A few comment letters were received during the comment period, which ended November 30, 2005. The majority of comments were collected at the public scoping meeting.

A scoping summary report was prepared for the initial scoping process (**Appendix A**). The scoping summary report summarized the comments received during the public scoping process and presented the LTBMU's responses to the comments. The report identified issues associated with the proposed action and was used by the LTBMU to determine areas in the EA where additional assessment, information, or clarification would be necessary.

Significant Issues

No issues were raised during the public scoping process that were considered to be "significant" in the extent of geographic distribution, the duration of effects, or the intensity of interest or resource conflict to merit consideration for the development of an alternative to the proposed action.

Other Issues

Other issues were raised during the public scoping process that were not considered significant issues or did not generate alternatives to the proposed actions. These included general comments in favor of or opposed to the proposed action and comments that could be addressed through the LTBMU responses to comments and/or clarifications in the EA. The scoping summary report is attached as Appendix A.

1.7 Forest Plan Consistency

The North Shore Trail ATM spans the Martis and Watson management areas defined in the 1988 Land and Resource Management Plan for the Lake Tahoe Basin Management Unit. The Martis management area prescribes the following practices for Dispersed Recreation Management – Summer:

- The rim trail and associated staging area, feeder trails, and trailheads will be given full consideration in planning this area but should not overly constrain other activities such as wildlife habitat improvement, watershed restoration or timber harvest.
- A system of summer OHV routes will be designated to provide high quality opportunities away from residential areas where resource concerns can be mitigated. Most routes will be designated on existing roads, however short segments may be constructed to complete loops and avoid highly sensitive areas.

The Watson management area prescribes the following practices for Dispersed Recreation Management – Summer:

- This management area is open to overnight camping [Watson Lake and Tahoe Rim Trail only]; however, some areas may be closed following project level planning. Demand for OHV use will be provided on existing roads and trails. No new OHV trails will be constructed.

The following concepts from the Standards and Guidelines are most relevant for trail planning:

- Minimize conflicts between use groups.

  - Allow mountain bike use on roads and trails except where prohibited

  - Close trails where adverse resource impacts cannot be reasonably mitigated.

- Reconstruct trails not meeting construction standards.

The North Shore Trail ATM is consistent with the 1988 Forest Plan.

SECTION 2
Alternatives

2.1 Alternatives to be Studied in Detail

Alternative 1—Proposed Action

Identified and described in Section 1.

Alternative 2—No Action

Under the No Action alternative, the Forest Service would not implement the proposed action. No trails would be decommissioned or rerouted or would change designation (nonsystem to system); mechanized use would not be limited to designated system trails. Unauthorized use of nonsystem trails would continue to be cited by law enforcement officials. The proliferation of user created trails would likely continue because the current trail system lacks interconnectivity, loop opportunities and does not provide for the current needs. Adverse impacts on water quality would continue, and would likely worsen on nonsystem, user created trails due to lack of maintenance. Where applicable, however, upgrade of existing system trails to BMP standards would continue. The primary focus of BMP upgrades on retained system trails is to disconnect the trails hydrologically from stream channels at crossings and allow for the dispersal of surface runoff to the forest floor. Sensitive wildlife habitat would continue to be bisected by popular motorized and non-motorized trails. Important archaeological sites would continue to be disturbed from trail use. Trails would continue to exist and be used as isolated trails instead of as a trail system where users would connect trails for a loop or extended trip. Lastly trails would not be located in high capability landscapes and access vistas or other desirable locations within the forest.

2.2 Alternatives Considered but Eliminated from Detailed Study

All of the issues that were considered significant were used to help develop the previously identified alternatives. As described in Section 1, no significant issues were identified during the scoping process. The scoping summary report is attached as Appendix A.

2.3 Comparison of Alternatives

Alternative	Issues		
	Adaptable/Sustainable	Erosion and Maintenance	Water Quality
Proposed Action	Improved User conflicts will be reduced by segregating user groups on optional alignments and using traffic calming techniques. Trails will be located away from critical wildlife habitat and away from archaeological sites.	Improved Nonsystem trails will be integrated or decommissioned. Trails will be rerouted or reconstructed to meet design standards.	Improved Reduction of trail coverage in low capability areas such as SEZs. Stream crossings will be eliminated where other options exist.
No Action	No change Use conflicts will increase as use increases. Trails will continue to bisect critical wildlife habitat and traverse through important archaeological sites.	Will degrade. No maintenance on nonsystem trails. Trails with steep grades will remain unstable and actively erode.	Problems will continue. Some small improvements will be accomplished through maintenance. Unnecessary and unimproved stream crossings will continue to degrade surface water quality.

2.4 Design Features

The following measures are incorporated into the proposed action to avoid or minimize potential adverse effects on watershed resources, including soil, vegetation, wildlife, fisheries, stream, air, and heritage resources resulting from construction activities associated with trail decommissioning, construction, and upgrades. Collectively, these measures will avoid or minimize direct, indirect, and cumulative impacts to resources analyzed in this EA.

Soil Protection Measures

The measures listed below will be implemented to avoid or minimize effects on ground and vegetation, control erosion and sedimentation, and minimize adverse effects on soil and water quality during and after implementation of the proposed action. Most of the measures listed were developed by the LTBMU or derived from TRPA (1988), the USDA Forest Service (2000), and the RWQCB (Tahoe Interagency Roadway Runoff Subcommittee 2001). Additional measures were developed locally by LTBMU through years of road decommissioning and trail conversion experience. The measure descriptions provided are intended to convey the general approach and methodology, not specific design and implementation criteria, which will vary depending on the specific environmental conditions encountered at each work location.

SOIL-1: Limit timing of activities. Trail decommissioning and upgrade activities will occur between May 1 and October 15 each year to avoid the period of highest rainfall, streamflows, and erosion potential, unless a grading ordinance exemption is obtained from the Lahontan Regional Water Quality Control Board (RWQCB) and the Tahoe Regional Planning Agency (TRPA). During periods of inclement weather, operations will be shut down until streamflows are sufficiently low and soil/channel conditions are sufficiently dry and stable to allow construction to continue without the threat of substantial soil compaction, erosion, sedimentation, or offsite sediment transport.

SOIL-2: Stabilize construction spoils. Earthen spoils generated during construction will be temporarily stockpiled in stable areas located outside of subject stream environment zones (SEZs). Straw wattles, silt fences, or hay bales will be installed around the base of

temporary stockpiles to intercept runoff and sediment draining from the stockpiles. If necessary, the stockpiles will be further stabilized by mulching them with available forest materials or an appropriate geotextile material. All spoils not used during construction will be hauled off site and deposited in stable areas once construction is complete.

SOIL-3: Implement erosion and sediment control BMPs on temporarily delayed project elements. Appropriate erosion and sediment control BMPs will be applied to all disturbed ground during temporary construction delays caused by inclement weather or other circumstances. Measures will vary with conditions, but are likely to include (1) placement of readily available mulch materials (e.g., pine needles, branches, coarse woody debris) and/or imported mulch materials (e.g., certified weed-free rice straw) to protect disturbed surfaces from raindrop impact, reduce runoff velocity, and reduce erosion; and (2) installation of straw wattles, silt fences, and/or hay bales to reduce runoff velocity and intercept sediment.

SOIL-4: Minimize ground and vegetation disturbance. Ground and vegetation disturbance will be minimized during implementation of the proposed action. Activities are in most instances confined to existing trail prisms, defined as the top of the cutslope to the base of the fillslope. Few, if any, snags or green trees will be felled, because most disturbances to vegetation resulting from trail treatments would occur adjacent to existing trails. No live trees greater than 24 inches in diameter at breast height (dbh) will be felled. Snags larger than 24" will be avoided unless they are deemed a hazard. Disturbances will also be minimized at channel crossings by locating proposed channel-crossing upgrades in approximately the same locations as existing channel crossings and by designating construction boundaries and equipment access corridors before initiating construction.

SOIL-5: Mulch and revegetate disturbed areas. 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, soils will be restored to promote natural and long term revegetation through soil decompaction and incorporation of organic matter. 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 revegetation process, and discourage motorized use.

SOIL-6: Control concentrated runoff from decommissioned trail surfaces to reduce erosion. Methods to reduce erosion and disperse drainage include properly spaced water bars, cross drains, outsloping (10–12 percent), and tilling the trail prism to break up the impervious surface and enable water infiltration and revegetation.

SOIL-7: Improve drainage on approach trails. Drainage control methods such as water bars, rolling dips, and outsloping will be used to improve drainage on the approaches to the subject channel crossings and thereby reduce the delivery of sediment to stream channels.

SOIL-8: Stabilize approach trails. Where native surface approach trails exist at proposed upgrades, they will be surfaced with rock or paver stones or hardened (i.e., compacted) to increase their resistance to erosion and reduce the delivery of sediment to subject stream channels.

SOIL-9: Decommission abandoned approach trails and staging areas. Equipment staging areas and existing approach trails used during construction and abandoned as a result of the proposed upgrades will be restored to natural conditions by loosening or scarifying the soil, and mulching with native and/or weed-free material.

SOIL-10: Dispose of wastes and petroleum products properly. Wastes and petroleum products used during construction will be collected and removed from the project site in accordance with Resource Conservation and Recovery Act regulations and federal Occupational Safety and Health Administration standards.

SOIL-11: Remediate contaminated soil. If contaminated soil and/or groundwater is encountered, or if suspected contamination is encountered during project construction, work will be halted in the area, and the type and extent of the contamination will be identified. A qualified professional, in consultation with the appropriate federal, state, and/or local regulatory agencies, will then develop an appropriate method to remediate the contamination.

Stream Environment Zone Protection Measures

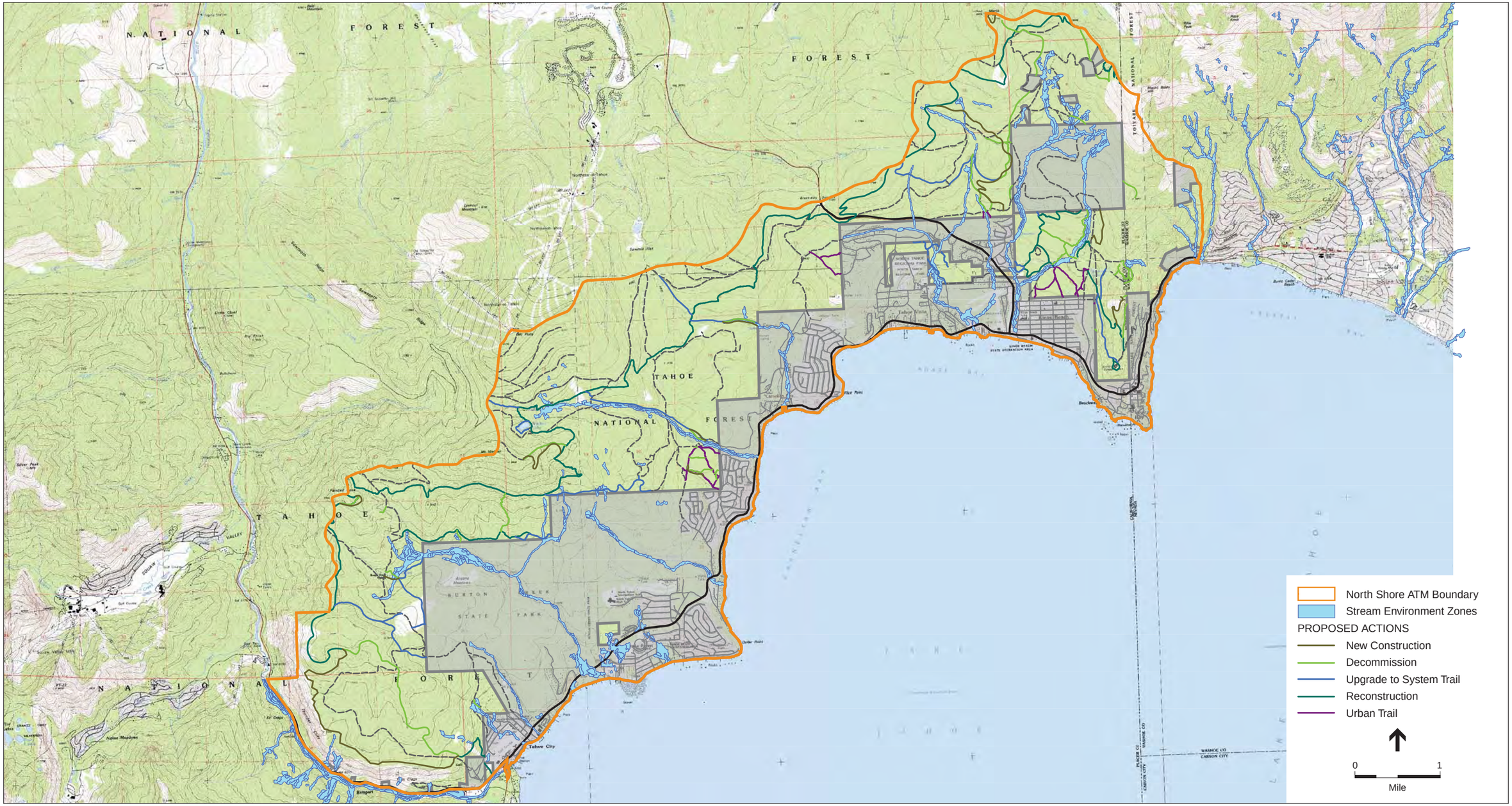
In addition to defined perennial and intermittent streams, SEZs (**Figure 2-1**) include seasonally wet areas such as wetlands and are defined by the presence of hydrologic, soil, or vegetation indicator features. In addition to the soil protection measures described above, the following measures will be implemented for project activities in SEZs.

SEZ-1: Prevent discharges of hazardous substances from refueling and maintenance. In areas where mechanized equipment might be used, all equipment refueling and maintenance activities will occur outside SEZs to minimize the potential to adversely affect water quality.

SEZ-2: Control sediment and revegetate within SEZs. Ground disturbance will be minimized and confined to the existing trail prism. All disturbed areas will be mulched with native material or weed free straw (e.g., rice straw) and seeded with native grass species. Where culverts are removed, the banks will be sloped back to a stable angle and an erosion control blanket applied. Any excavation sites will have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native shrubs such as willows may be planted if stream channel or bank stability concerns are identified.

SEZ-3: Stabilize subject stream banks. Stream banks adjacent to and/or affected by the proposed channel crossing upgrades will be stabilized and protected from erosion using a combination of structural and biotechnical methods. The specific methods used will vary depending on site conditions, but will likely include one or more of the following: adjustment of stream bank slopes; installation of rock slope protection (riprap); installation of biodegradable erosion control blankets; installation of willow wattles (live fascines); and/or the use of pole cuttings, container stock, and seed collected from local sources to reestablish native stream zone vegetation.

SEZ-4: Achieve zero discharge during in channel excavation work. Several of the proposed channel-crossing upgrades and culvert installations/replacements will require work in stream channels that will likely contain flowing water during construction. The goal during in channel excavation is zero discharge. The following practices have proven effective in achieving zero discharge: (1) wherever possible, delay activities until flow has ceased or is at lowest flow (base flow); (2) when flow is present, convey flow around the construction site and discharge in a stable location; (3) install a coffer dam below the site to trap sediment and detain any turbid water; (4) dispose of any sediment from behind the dam in a stable location; and (5) remove turbid water by pumping and sprinkling it in a location and manner to allow infiltration into the soil.



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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Figure 2-1

Stream Environment Zones

SEZ-5: Install rock barriers. Rock barriers will be installed along the boundaries of approach trails at proposed channel crossing upgrades to contain traffic and discourage use in subject SEZs.

SEZ-6: Use appropriate water supply for construction. In general, streams in the action area are not available for use as a project water source. If drafting from a stream is necessary, a hydrologist and/or fisheries biologist will review and approve the location, amount of water, and other site-specific constraints.

SEZ-7: Contain spills. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.

SEZ-8: Limit staging of materials and equipment. Staging of materials and equipment will be limited to existing disturbed areas outside SEZs (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. Following project completion, these areas will be tilled, seeded, and mulched.

Fire Risk Reduction Measures

To minimize the risk of wildfire to resources and human health and safety, the following measures will be implemented.

FIRE-1: Keep fire tools onsite. In areas where mechanized equipment might be used, fire extinguishers and tools shall be on site during construction activities as defined in the fire plan section of the contract.

FIRE-2: Monitor fire weather. Daily monitoring of fire weather and Fire Activity Level will occur during construction. **Table 2-1**, below, lists requirements for the following types of activities that include chainsaw operation, motorized equipment use, and blasting. Hand work not involving combustion engines does not require fire restrictions. Exemptions may be granted by the Fire Protection Officer.

TABLE 2-1
FIRE ACTIVITY LEVEL REQUIREMENTS

Level	Project Activity Requirements
A	All gasoline/diesel powered equipment must have spark arrestors or have exhaust driven turbo chargers. Vehicles must have proper fire protection/fire fighting equipment at all times.
B	In addition to A, 1) Furnish fire patrolperson for mechanical from cessation of operations until 2 hours after operations cease or sunset. 2) Furnish a water pack at work sites.
C	1) Fire patrolperson is required until sunset. 2) Blasting is prohibited from 1 pm until 8 pm local time.
D	The following trail related activities may operate: 1) Chipping on trails, roads or landings 2) Trail maintenance 3) Trail grading 4) Drainage installations/BMP upgrades 5) Hand Slash Disposal 6) Chainsaw operations on trails, roads or landings All other activities may continue after 1 PM local time if they meet the following: A fire patrol person is required to walk all areas treated that day once per hour, until sunset local time. This includes chainsaw felling and motorized equipment operation.

TABLE 2-1
FIRE ACTIVITY LEVEL REQUIREMENTS

Level	Project Activity Requirements
Ev	All of the following trail related activities may operate: 1. Equipment servicing
E	Operation of motorized equipment is not allowed.

Biological Resource Protection Measures

Measure SOIL-4 (minimize ground and vegetation disturbance), described above, will minimize disturbance to vegetation and terrestrial habitat resulting from project activities. For example, few snags or green trees will be felled; and no live trees greater than 24 inches in diameter will be felled. Snags larger than 24 inches will be avoided unless they are deemed a hazard. This measure will benefit wildlife species analyzed in the Biological Evaluation/Biological Assessment (BE/BA) prepared for this project such as California spotted owl, northern goshawk, and American marten. Measures described above such as SOIL-5 (mulch and revegetate disturbed areas) and SOIL-4 will be implemented to minimize disturbance and avoid permanent loss of native vegetation and terrestrial habitat. The following measures will be implemented to further protect special-status species, vegetation communities, and wildlife habitat.

BIO-1: Conduct preconstruction surveys for threatened, endangered, sensitive, or special-interest plant species and avoid such species. Prior to implementation of the proposed action, surveys will be conducted in suitable habitat where construction activities will occur to determine if any threatened, endangered, Forest Service sensitive, or TRPA-designated special-interest plant species occurs there. Any sighting of these species before or during project implementation will be reported to the Forest Service botanist. Where these plants are detected, they will be delineated and avoided to the maximum extent practicable during project activities. Results of past surveys are included in the BE/BA.

BIO-2: Control noxious weeds. Measures to control the introduction and spread of noxious weeds in the action area will be implemented during construction activities. The Sierra Nevada Forest Plan Amendment (SNFPA) to the Land and Resource Management Plan (LRMP) provides direction regarding actions to control the spread of noxious weeds. These include equipment inspection and cleaning, use of weed-free straw or hay, and post-construction inspections. Please see Appendix C (Noxious Weed Risk Assessment North Shore Trail Access and Travel Management Plan Analysis) of the BE/BA for details on mitigation measures to control noxious weeds.

BIO-3: Construct during dry season. Construction activities will occur between May 1 and October 15 in the 100-year floodplain of any drainage in the action area to reduce the potential for siltation impacts on wetlands and drainages.

BIO-4: Minimize impacts on waters of the United States. Construction activities will be limited to the trail prism or existing disturbed areas; this constraint will minimize the loss or disturbance of waters of the United States.

BIO-5: Conduct preconstruction surveys for selected wildlife species. Prior to implementation of the proposed action, protocol surveys for nesting California spotted owl and northern goshawk will be conducted in suitable habitat in the action area. Some locations in the action area have been surveyed for willow flycatcher in previous years.

Additional preconstruction surveys for willow flycatcher may be conducted in these and other areas of suitable riparian habitat where project activities will occur. Results of these surveys will be used to implement some of the measures described below.

BIO-6: Avoid or minimize impacts on threatened, endangered, sensitive, or special-interest wildlife species. Any detection of threatened, endangered, sensitive, or special-interest wildlife species or of nests, dens, roost sites, and other areas of concentrated use of these species, before or during implementation of the proposed action, will be reported to the Forest Service wildlife biologist. Areas of concentrated use, particularly those that are important for reproductive activities (e.g., nest or den sites), will be protected in accordance with the LRMP, the SNFPA environmental impact statement (EIS), and TRPA Environmental Thresholds Carrying Capacities (ETCCs) for the Lake Tahoe Region. Specific measures for all of these wildlife species are described in measure BIO-7.

BIO-7: Implement limited operating periods. To avoid construction-related disturbances to breeding activities and habitat of species analyzed in the BE/BA, limited operating periods (LOPs) will be implemented around nests, dens, roost sites, and other areas of concentrated use of these species. An LOP constitutes a period during which project activities will not occur and is enforced in project implementation contracts. Implementation requirements such as the timing and location of LOPs for certain species are described below.

- **California spotted owl and northern goshawk**. To avoid disturbances to California spotted owl and northern goshawk breeding activities and habitat, LOPs during sensitive nesting times will be implemented around active nest sites and in occupied protected activity centers (PACs). Specific guidelines for implementing LOPs are provided at the end of this section. A PAC is a land allocation around the known or suspected (based on patterns of concentrated use) nesting or denning area of a particular species that is present in a given area; the size of a PAC depends on the species involved. If pre-project surveys determine that a nest or PAC is not active, the LOP may be lifted at the Forest Service wildlife biologist's discretion.
    - A California spotted owl PAC is an area 300 acres in size that includes the best available habitat around known or suspected nest stands in as compact a unit as possible (USDA Forest Service 2004). There are currently five spotted owl PACs and on interim spotted owl PAC in or near the action area (**Figure 2-2**). A northern goshawk PAC is an area 200 acres in size that includes the best available habitat around known or suspected nest sites. There are currently five goshawk PACs in the action area (**Figure 2-3**).
    - An LOP between March 1 and August 15 will be imposed within 0.25 mile of an active spotted owl nest site or within an active spotted owl PAC. Pre-project surveys will attempt to determine the locations of active nest sites (see measure BIO-5). An LOP between February 15 and September 15 will be imposed within an active northern goshawk PAC and within 0.25 mile of the nest site itself. Pre-project surveys will attempt to determine the locations of active nest sites. Also, an LOP will be imposed within 0.25 mile of any suitable habitat for either species unless surveys conducted within the last 2 years have confirmed that the species are not nesting there. Because LOPs would be established for project activities in areas of suitable habitat (except as noted above), project activities within these areas would occur outside of the nesting seasons and not adversely affect nesting attempts.

- **Willow flycatcher**. Pre-project surveys for willow flycatcher may be conducted in areas of suitable riparian habitat where project activities will occur. If willow flycatchers are detected, an LOP between June 1 and August 31 will be imposed. The location of the LOP will be determined by the Forest Service wildlife biologist based on site conditions and type of project activity.

- **American marten**. Carnivore surveys have not been conducted throughout the action area. Suitable habitat for American marten occurs within the action area and this species is highly likely to occur there. If a den site is detected in the action area before or during project activities, an LOP would be implemented from May 1 to July 31 within 100 acres surrounding the den site.

- **Other wildlife species**. LOPs or protection zones for all other threatened, endangered, sensitive, or special interest wildlife species will be implemented if these species are detected in the action area prior to project implementation. Appropriate LOPs or protection zones would be implemented around a nest site, roost site, den site, or other area of concentrated use. The Forest Service wildlife biologist would determine the location and duration of an LOP, using standard guidelines if available and appropriate (e.g., the Record of Decision for the SNFPA EIS).

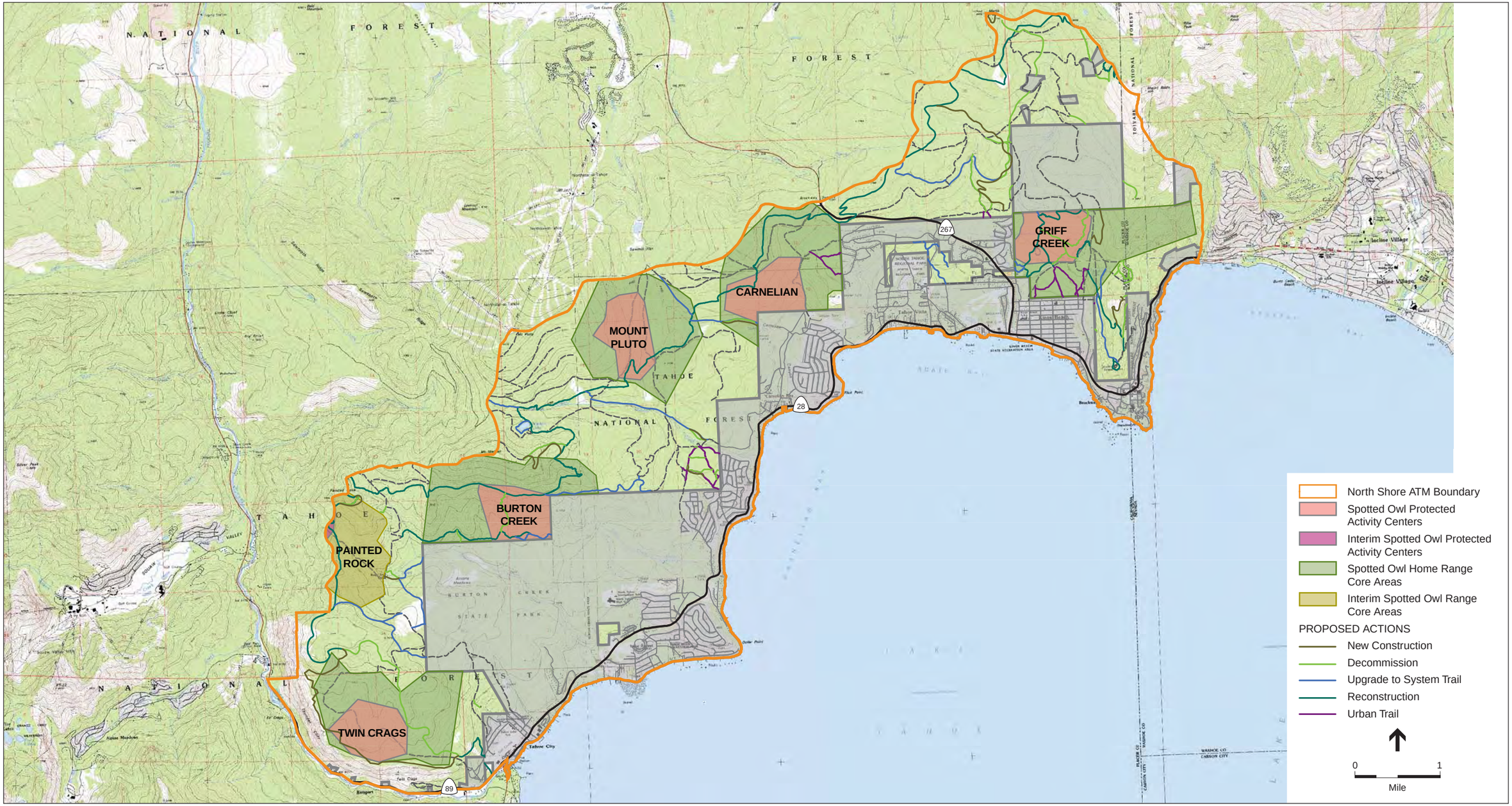
- **Waterfowl, Fisheries, and Aquatic Resource Measures.** The measures described above for protection of soil and SEZ resources will avoid or minimize potential short-term adverse effects of project activities on aquatic and riparian habitats that support waterfowl, fish (Lahontan cutthroat trout), amphibians (e.g., mountain yellow-legged frog), and other aquatic species.

Heritage Resource Measures

HER-1: Incorporate Standard Resource Protection Measures. For known heritage resource sites, the proposed action will implement Standard Resource Protection Measures as outlined in the Programmatic Agreement entered into by the Forest Service Pacific Southwest Region, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation. The Standard Resource Protection Measures will include flagging or fencing the sites prior to commencement of work. The LTBMU Heritage Resources staff must be notified in advance of construction activities so that these measures can be implemented.

HER-2: Incorporate Specific Resource Protection Measures. For known heritage resource sites, the proposed action will implement site-specific heritage treatment recommendations as outlined in the Heritage Resources Inventory Report for the North Shore Trail ATM.

HER-3: Implement additional review and/or consultation if necessary. If the design of the proposed action is altered or changed, additional review by the LTBMU's Historic Resources Program will be required. Furthermore, if any previously unrecorded heritage resources are discovered during this action, all project-related activities must cease immediately and the consultation process as outlined in Section 800.13 of the Advisory Council on Historic Preservation's regulations 36 CFR 800 must be initiated.



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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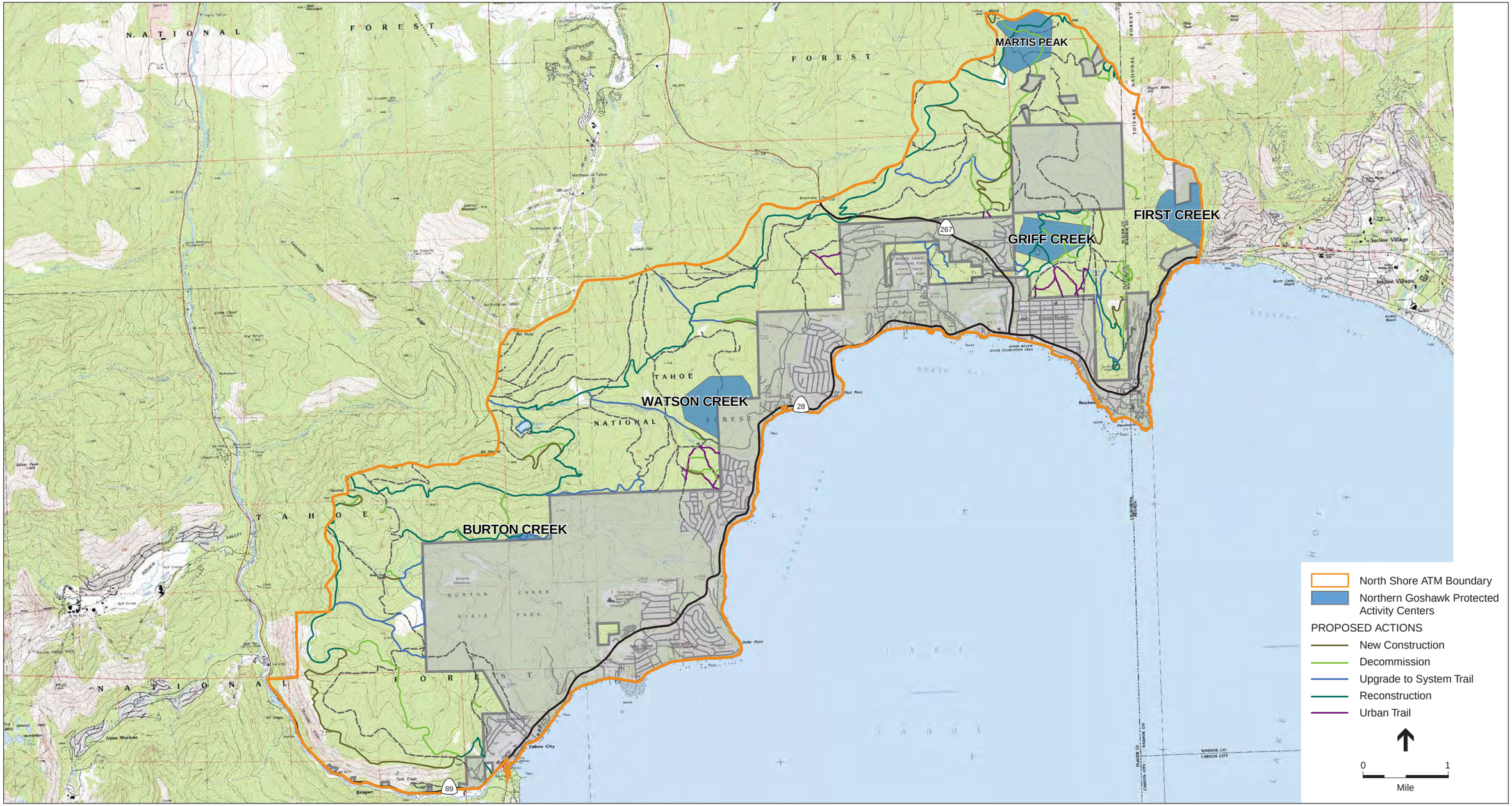
Figure 2-2

California Spotted Owl Protected Activity Centers



SOURCE: USGS 7.5' Topographic Quadrangle; LTBMU, 2006; and ESA, 2006

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Figure 2-3

Northern Goshawk Protected Activity Centers

Air Quality Measures

AIR-1: Water exposed soil. In areas where mechanized equipment might be used, exposed soil will be watered with adequate frequency to keep soil moist at all times.

AIR-2: Revegetate disturbed areas. Revegetate disturbed areas immediately after the completion of construction to reduce wind erosion.

AIR-3: Limit vehicle speeds. In areas where mechanized equipment might be used, vehicle speeds will be limited to 15 miles per hour on unpaved surfaces.

AIR-4: Comply with federal air quality standards. In areas where mechanized equipment might be used, construction activities will comply with U.S. Environmental Protection Agency (EPA) air quality standards for dust and condensed fumes, so that emissions do not exceed hourly levels as regulated per processing weight.

SECTION 3
Environmental Consequences

3.1 Effects Relative to Significant Issues

No issues were raised during the public scoping process that were considered to be "significant" in the extent of geographic distribution, the duration of effects, or the intensity of interest or resource conflict. However, the LTBMU has identified the following issues for analysis based on their importance to similar projects completed in the Lake Tahoe Basin.

Issue 1: Establish an Adaptable, Sustainable Trail System that Meets Current and Future Recreation Needs

Measure: Redevelopment of the trail system to establish adaptable, sustainable trails that meet current and future recreation needs.

A sustainable trail system will be established upon completion of the proposed action. Both sustainable development and environmentally sustainable principals are incorporated into this plan. Sustainable development is the process of balancing human needs with protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future. Environmental sustainability is the ability of the environment to function indefinitely. Establishment of a sustainable trail system preserve access on trails to National Forest System Lands into the indefinite future through trail location, providing needed/desired recreation opportunities, and following trail design principals.

Conflict between trail use groups is a major factor that affects how groups use trails, if trails meet user expectations and can negatively affect resources as users create more desirable opportunities. As outdoor recreation continues to grow use conflicts will increase in the absence of management actions. If the behavior of other users on the trail appears dangerous or threatening, such perceptions affect a user's enjoyment. Safety issues are affected by a combination of factors including the ratio of user group to trail type to the total number of trail users (Chavez et al., 1993). Use conflicts arise whenever incompatible activities occur concurrently, both temporally and spatially. Incompatibility between activities occurs when one activity adversely affects the other (Bury et al., 1983). Redevelopment of the trail system to include information about allowed uses and trail characteristics can help users to establish reasonable expectations for their trail experience and inform users of proper trail etiquette, which in turn will reduce the occurrence of use conflict. Trails that follow design standards also can reduce use conflicts by increasing sight lines, reducing speed

differentials between users, separating uses in confined trail corridors and by developing trails that meet current needs. Trail planning and development will involve a design cadre made up of representatives from each trail use group. Further, trail construction will occur by both multiple-use volunteer groups and with professional trail crew. Intermixing of use groups is essentially important to increased understanding and reduction of use conflicts (Moore, 1994)

Establishment of trail systems that conform to design standards allows for increased adaptability to future uses. Adaptability is an important aspect of meeting sustainable objectives. Trails that follow design standards pose minimal risk to water quality and for soil erosion. Further, through GIS analysis and close coordination with resource specialists the trail system will be redeveloped and relocated away from sensitive habitat and important archaeological sites. Additionally, optional lines will provide for a range of opportunities for users from easy to difficult which will further meet current and future needs. The main alignment of the trail provides for sustainable access through the forest. Interconnecting the existing trail system will create desirable loop opportunities. Coordinating multiple resources and employing ecosystem based planning, the trail system will be relocated to the highest capability land possible while meeting trail use needs. The trail system becomes adaptable as a result of designing trails to become "invisible" within the ecosystem. Trails will meet many uses far into the future because less maintenance will be required and the trails meet primary objectives for access onto National Forest System lands. Incorporation of alternative alignments will provide challenge for some users while reducing potential use conflicts. Providing for a spectrum of uses from paved interpretive trails to primitive backcountry trails will provide for a spectrum of recreation opportunities. All of these factors provide for an adaptable and sustainable trail system.

Alternative 1 (Proposed Action)

The proposed action focuses on reducing trail coverage within and increasing the functionality of SEZs and reducing risks to water quality. However, the proposed action would also establish a larger and more logical trail system, characterized by increased safety and improved maintenance.

System trails would be increased from approximately 33.2 to 54.8 miles. The proposed action was designed in large part on the basis of a comprehensive analysis of the 37.8 miles of nonsystem trails; these trails were examined to determine which would improve access and provide logical continuity with system trails. System trails will be clearly signed for their designated use, thus reducing the existing uncertainty for trail use.

Motorized uses would be concentrated in the King's Beach area and eliminated throughout the majority of the action area. Overall, 6.6 miles of motorized trails would be decommissioned or reclassified as multiple-use trails in the action area. Approximately 4.3 miles of trail would be constructed or reclassified as motorized use. These changes would focus motorized use in a single area and reduce or eliminate use conflicts associated with motorized user groups. If two incompatible activities are separated, temporally or spatially, conflict is less likely (Bury et al., 1983).

Approximately 2.2 miles of newly constructed motorized trails are proposed to augment the existing motorized trails near King's Beach, increasing trail continuity and the range of options for motorized users in that area while reducing impacts to SEZs and water quality by moving motorized uses further away from sensitive resources. The previously existing trails would be decommissioned, reconstructed, or converted to system status. The new designations would provide a more logical, accessible, and cohesive motorized trail system.

The remaining trail system in the action area would be designated as multiple use trails, totaling 50.0 miles of trails. Allowable uses would include mechanized uses such as mountain bikes as well as non-mechanized uses such as pedestrian and equestrian uses. Trails that allow mountain bike use such as 19E00, 18E04, 17E12, 17E16, 17E17, 17E44, 17E09, 18E18 and 18E23 will be designed to reduce use conflicts. In some cases, short sections of trail may be separated opportunities that meet use specific needs, particularly in areas where speed differential between uses is high and the potential for one use to startle another use is high. Sections of trail that are separated will be reviewed by specialists prior to construction. Trails will not be separated within sensitive areas such as stream environment zones or sensitive wildlife habitat. In addition, two trails, the Martis Peak Vista Trail and the Stateline Lookout Trail, will provide universal access recreational opportunities for handi-capable users which will result in a trail system providing opportunities for a broad spectrum of users.

Certain trail aspects (e.g., width) may exclude certain uses. While it is true that a wide trail will result in greater levels of impact than a narrow one, it is important to consider that a trail properly designed to accommodate targeted use groups is unlikely to exhibit greater erosion or water quality impacts as a result of any single use group. Accordingly, the frequency of maintenance is unlikely to increase due to any single use group. Current knowledge and trail construction techniques indicate similar trail design and maintenance needs for all three groups. The implication is that the maintenance costs associated with a particular trail system will be the same weather the entire system is used by al use groups or partitioned into separate sections for each.

Sections of separated trails are often referred to as optional alignments and can provide for more challenging opportunities for different use groups. Providing for challenging optional alignments can reduce the occurrence of user created trails, use conflicts and resource degradation. Use of natural features such as rocky outcrops and even downed logs can provide challenge for multiple use groups such as mountain bicyclists, trail runners, motorcycles, and all terrain vehicles. Development of optional alignments would meet the mountain bicyclist growing use group needs thus improving trail experiences for all uses by reducing use conflicts, reducing resource impacts, and providing for desired experiences.

In conclusion, the Proposed Action Alternative is designed to establish a sustainable trail system and an adaptable trail system. Impacts to resources will be minimized through by avoidance, relocation of trails to higher capability lands and integrated planning. The No Action alternative would not relocate trails that bisect important wildlife habitat, archaeological sites or that traverse stream environment zones. Further, the occurrence of user created (nonsystem) trail construction would likely continue under the No Action Alternative because the current trail system lacks interconnectivity and loop opportunities. The Proposed Action Alternative would establish a sustainable trail system through the following actions:

- Redeveloping the trail system to meet design standards
- Relocating trails to higher capability lands
- Providing opportunities for a spectrum of uses
- Providing a trail system that meets current and future needs
- Elimination of trails with high impacts to resources
- Establishing an interconnected trail system with loop opportunities

Alternative 2 (No Action)

The existing trails in the action area (system and nonsystem) are disconnected and poorly signed, and some sections are in poor repair. There are few indications of what uses (e.g., mechanized, motorized) are allowed on the various trails, increasing the chance of surprise encounters. Some user-created trails do not connect with other trails, creating dead ends that can reduce enjoyment of pedestrian and equestrian experiences. Wear and degradation of some trails could pose a safety risk to certain user groups. In light of documented user conflicts, there are some safety concerns involving use of trails by both motorcycles and mountain bikes. Additional user conflicts occur between motorcycles and pedestrians/equestrians and between mountain bikes and pedestrians/equestrians. These conflicts are more pronounced on trails where the speed differential between use groups is great and where sight lines are short. Degree or amount of startling encounters of use groups can highly affect use experiences and contribute to use conflicts. Trails in the project area have characteristics that lead to use conflicts.

The No Action Alternative would not establish a sustainable trail system as a result of the following factors:

- The continued existence of nonsystem trails
- Lack of logical trail connections and loop opportunities
- The continued proliferation of user created trails
- Bisected sensitive wildlife habitat
- Approximately 25% of the trail system within the action area does not meet design standards
- Trails that would continue to exist on low capability lands where options exist to relocate trails to higher capability lands

Interpretation and Conclusion

Establishment of sustainable and adaptable trails is measured of stable ecosystem function. Locating trails on the highest capability lands and following proven design principals will ensure that degrading trails are reconstructed to become sustainable.

Because goals are different both within and between user groups, users inevitably encounter others with different goals. These goals sometimes conflict, thus potentially affecting the enjoyment of one or both users.

Although considerable research has been conducted on goal conflict, it has tended to focus on identification of specific points of conflicts; scholarly examination of the efficacy of resolution methodologies is sorely lacking in the literature. It appears that education/outreach is most widely used; in some cases physical modifications have been implemented. Examples of physical modifications to constrain specific user groups or to reduce potential for intergroup conflicts include design features such as sharp corners, pinch points, and grade modifications, as well as scheduled days for certain user groups. Rigorous segregation of user groups has been rarely used. Currently, in the absence of corroborative study, the field of managing user group conflict remains more an art than a science.

The Forest Service's mandate to support multiple uses would seem to suggest that the greatest extent of trail for the widest range of user groups would best fulfill the objective of an enjoyable user experience (or quality, as defined by TRPA's threshold evaluation). However, not all trail sections exhibit the same enjoyment for all user groups. Moreover, both safety and users' enjoyment can be reduced by the mere presence of a different user group (Cessford, 2002).

It might seem that designation of individual trails or clusters of trails for specific user groups would address the issue of conflicting goals; however, the availability of trails necessarily imposes a constraint on this approach. Even within a given user group, a wide range of trails would be necessary to fulfill users' needs, and such a range of trails for the multiple user groups is not possible without some sharing of trails. A scarcity of trail types for any given user group could tend to increase illegal trail use, or *poaching*. Such out-of-designation activities are particularly difficult to control through enforcement, and they increase the likelihood of user conflicts, impairing the quality of all users' experience.

That being said, limiting trail use may be a viable solution to potential use-group conflicts on some trails. For example, several trails in the action area have experienced historically low usage by motorized users. Closing these trails to motorized uses has a very limited adverse effect on motorized user groups, while increasing the perceived safety and enjoyment for pedestrians and equestrians.

Some of the key reasons use conflicts exist on trails is due to a lack of understanding between use groups, speed differential between use groups, predictability, perceived resource impacts, lack of management, and the potential to startle other uses. With these in mind, motorized uses and mountain bicyclists are often targeted by other groups as the source of resource conflicts.

Motorized uses are targeted due to noise, perceived resource impacts, lack of understanding from other use groups, and speed differential between use groups. Mountain bicyclists are targeted due to the potential to startle other uses, perceived resource impacts, speed differential between use groups, and lack of understanding by other use groups.

The notion of perceived characteristics as bearing heavily on experiential quality is crucial. Because user trail enjoyment is such a subjective and variable attribute, it is difficult to quantify, difficult to address, and is influenced by perception and behavior. Safety, too, aside from actual incidents, can be largely a matter of user perception. Accordingly, the encounters between user groups can be modified and enhanced through education and understanding. The Forest Service endorses a policy of increased user awareness and trailhead education. For example, signage encourages users to be respectful of other users, explains trail etiquette (e.g., how to interact with other user groups), and illustrates the use designation of trails so that different user groups may be better prepared for potential interactions before they begin a trail.

The potential for conflict between user groups that is most relevant to the action area may be the interaction between mechanized (e.g., mountain bikes) and nonmechanized (i.e., equestrian/pedestrian) uses since each of these user groups will have access to the *multiple use* trails in the action area. Accordingly, it is useful to examine these interactions in some detail.

Mountain bikes are perceived by other user groups to be a potential safety hazard when sharing trails with equestrians and pedestrians (Chavez et al., 1993; Jacoby, 1990). But studies have shown that, although safety was a primary concern of users surveyed for the studies, and mountain bike use had risen in the areas surveyed, the actual level of safety problems was minimal (Chavez et al., 1993).

Cessford (2002) compared the perception with the reality of conflicts between hikers and mountain bikers. The study examined the effects of mountain bikes on hiker enjoyment, evaluating hikers that both had and had not actually experienced encounters with mountain bikes. Surprisingly, the hikers expressing the more negative perceptions of mountain bikers were those who had not had encounters. Hikers who did encounter bikes responded more negatively if they had not expected to do so than if they had. The role of perception in influencing the quality of user experience is evidenced by these findings, which carry interesting implications for the importance of trailhead signage and user education.

Cessford (2002) also found that many respondents considered that bikes travel too fast when passing people or rounding bends. These perceptions may make hikers or equestrians feel unsafe. At the same time, it is important to acknowledge that speed can be an important component of the mountain bikers' enjoyment. Balancing such conflicting goals is the challenge of a recreation manager.

Some changes in trail use patterns are fairly recent developments. Accordingly, before closing trails to certain groups, it may be wiser to investigate more effective methods of user group integration. Given the potential disadvantages of limiting trail use (e.g., excessive constraints on individual user groups, potential for trail poaching), designing a more logical trail system in conjunction with enhanced user education should be the first step in creating a good multiple use trail system.

In designing a "good" multiple use trail system it is very important that user needs are being met. If user needs are not met, then unplanned or unwanted conditions will persist. Users will create opportunities or use existing trails in ways that are not compatible for other users. Further, involving users in the development and construction of trails systems is essential to increased understanding between use groups and for development of techniques and designs to not only reduce conflict but meet use needs. Simply by following trail design principals will establish a sustainable, adaptable trails system. Separation of short sections of trails can reduce or eliminate use conflict by addressing use needs while eliminating the main factors that contribute to conflict through design. The Forest Service used these design principals when developing the Proposed Action Alternative, as described in Section 1.

In conclusion, the Proposed Action Alternative would establish a larger and more logical trail system, characterized by increased safety and improved maintenance. System trails will be clearly signed for their designated use, thus reducing the existing uncertainty for trail use. User conflicts will be reduced by segregating user groups and focusing motorized use in a single area Optional trail alignments on multiple use trails will reduce the occurrence of user created trails, use conflicts, and resource degradation. Universal access opportunities will increase. Under the No Action Alternative, user conflicts will continue because the trail system will remain disconnected, poorly signed, and in disrepair. Recreational access and the trail experience for the majority of user groups would not improve.

Issue 2: Erosion and Maintenance

Measure: Evaluation of erosion potential.

Alternative 1 (Proposed Action)

The proposed action is designed to establish a sustainable trail system. Correspondingly, implementation of the action alternative would result in a reduction in erosion through trail conversion, reconstruction, and an overall reduction in trail mileage. Trails would be reconstructed to meet design standards and use needs which will reduce the occurrence of user created trails and maintenance frequency.

The proposed action includes decommissioning (i.e., closing and rehabilitating) approximately 14.5 miles of existing trails, converting 13.4 miles to the Forest Service trail system for monitoring and maintenance, classifying 5.0 miles of existing nonsystem trails as urban trails, repairing and reconstructing 26.3 miles of trails, and several other measures designed to reduce impacts on soil resources and water quality. Additionally, up to 9.6 miles of new trail construction would occur to facilitate a more logical and coherent transportation system and to reroute trails that are currently located in sensitive areas, such as stream environment zones.

When combined, trail decommissioning and new construction would result in a net reduction of 4.9 miles of trails, including 6.6 fewer miles of motorized trails, in the transportationshed. Although the total length of trails would decrease, the length of maintained trails would increase because 9.7 miles of the 14.5 miles of trails proposed for decommissioning are nonsystem trails.

In addition, 13.4 miles of nonsystem trails would be converted to system trails, 5.0 miles of existing nonsystem trails will be classified as urban trails, and all new trails will be brought into the National Forest system. Please see Tables 1-1 through 1-8 and Figures 1-2 through 1-4 in Section 1 for trail details. Fewer total miles of trails, combined with a higher proportion of trails brought into the National Forest system, will result in an increase in system trails that are actively monitored and maintained, thereby reducing erosion problems originating from the trail system in the action area. New system trails will be designed to minimize erosion and water quality degradation. This improved trail system will also require less frequent maintenance and associated disturbance. The occurrence of problem areas on trails is also expected to decrease; this should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas.

Decommissioning trails would result in increased infiltration capacity for the transportationshed. The surfaces would be restored and natural revegetation would occur. In areas of previous SEZ coverage, decommissioning would help restore a properly functioning streamside habitat.

Mountain bikes would be limited to trails that have been designed to sustain the impacts from pedestrian, equestrian, mechanized and, in some cases, OHV use. The BMPs to be installed (see Appendix B) are endorsed by the Forest Service (see *Trail Specifications Handbook*), TRPA, and the Lahontan Region California Regional Water Quality Resource Control Board (Lahontan). These BMPs have been shown to be effective under a variety of conditions.

Alternative 2 (No Action)

There are currently 33.2 miles of system trails in the action area. These trails receive maintenance as prioritized and scheduled during the summer months. Many of the trails are in close proximity to streams and SEZs; such trail segments have caused chronic erosion features beyond the capacity that routine maintenance measures can address. Many of the BMPs that are mentioned in this EA and described in Appendix B exist on the current trail system. Some remain fully functional, some have been superseded by newer technology, and some must be rebuilt.

There are 37.8 miles of user-created, nonsystem trails. These trails do not receive any maintenance. They are generally devoid of erosion control features. Furthermore, because these trails were not properly designed, appropriate slopes, soils, and locations were not considered.

Interpretation and Conclusion

Placing any trail on the landscape causes physical impacts. Depending on the characteristics of the landscape (e.g., soils, precipitation, aspect), a trail can have a range of impacts on soils and water quality. These impacts exist even in the absence of use. It should be emphasized that the greatest level of impact results from creation of the trail; subsequent to creation, initial trail use has the highest level of impacts, often leading to a more stable, “settled” condition (Cessford 1995).

Trail design can reduce but not eliminate these impacts. Wilson and Seney (1994) concluded that trail degradation occurred regardless of specific uses and that such degradation was more dependent on geomorphic processes than on type and amount of activity. Considering these findings, **the most effective method of minimizing impacts is choosing an appropriate route and avoiding situations conducive to impacts**.

The proposed action is intended to achieve just such a reduction of impacts. By reducing the number of stream crossings, lowering SEZ coverage, and rerouting trails to avoid chronic erosion features and steep gradients, the proposed action would minimize adverse effects while continuing to support multiple recreational uses.

Although impacts on trails vary by user group, these impacts cannot be easily quantified. Cessford (2002) summarized a number of studies that highlighted the difficulties of attributing a greater degree of impact to any specific user group. Instead, it appears that different users affect trail systems in different ways. Under differing sets of conditions (e.g., uphill versus downhill, wet versus dry, rock versus loam), particular uses can have relatively lesser or greater impacts.

For example, Weaver and Dale (1978) found that motorcycles typically had greater impacts than either equestrians or pedestrians traveling uphill, whereas horses typically had greater impacts than the other two groups traveling downhill. Moreover, the study showed complex relationships between levels of impact and a wide array of influencing factors, such as age of trail, habitat type, and slope; it also suggested that neither equestrians nor motorcycles can be characterized as causing either greater or lesser impacts under all circumstances.

Traditionally, user groups have been categorized as motorized or nonmotorized. However, this division is not particularly efficacious in analyzing impacts relating to erosion, water quality, or soil disturbance/compaction. For example, weight and force associated with a particular use are crucial to evaluating levels of impact. The weight and force attributable to equestrian use may be equivalent to those attributable to some OHVs, while motorcycles and mountain bikes may have similar impacts under some sets of circumstances (Weaver and Dale, 1978; Wilson and Seney, 1994).

It is important to note that each user group carries its own array of impacts, each of which can vary with habitat type, individual user characteristics (e.g., temperament, skill level, values), and trail conditions. Weaver and Dale (1978) found that pedestrians in all situations caused less damage than other user groups; however, they are more prone to diverge from established routes, thereby causing collateral damage (e.g., cutting switchbacks, which can lead to serious erosion problems). Studies have examined the erosion caused by mountain bikes versus other users and concluded that the trail damage caused by mountain bikes was difficult to distinguish from the impacts of other uses. Other studies (Chavez et al., 1993) have concluded that determining the amount of trail degradation due to mountain bikes or any single user group is difficult when multiple groups use a trail.

Mountain bikes, like motorcycles, have been shown to have lesser impacts than equestrians when traveling downhill; however, these impacts increase with braking or skidding, which can create gullies that may subsequently lead to channelization during runoff. The amount of braking and

skidding is associated with the rider's skill level and goals; accordingly, this impact may be subject to wide variation as well as modification (e.g., through user education). When traveling uphill, mountain bikes create lesser impacts than motorcycles because they cannot generate as much force (i.e., torque) as motorcycles (Keller 1990; Cessford 2002).

Equestrians tend to wear hardened surfaces faster than pedestrians. Weaver and Dale (1978) found that equestrians caused the most damage of all user groups on level ground, but that motorcycles caused more damage on sloping grassland.

Each user group causes impacts, and all impacts require maintenance. The frequency of maintenance is not dictated so much by the impact type as by the degree to which the impact has exceeded allowable thresholds. The assessment of maintenance needs encompasses geomorphic impacts as well as user group–related impacts. Consequently, maintenance may be required if shortcuts have developed, if armoring has degraded, or if channels have formed.

Certain aspects (e.g., width) of trail design may exclude certain uses. While it is true that a wide trail will result in greater levels of impact than a narrow one, it should be pointed out that a trail properly designed to accommodate targeted use groups is unlikely to exhibit greater erosion or water quality impacts as a result of any single user group. Accordingly, the frequency of maintenance is unlikely to increase due to any single user group. Current knowledge and trail construction techniques indicate similar trail designs and maintenance needs for all three groups. The implication is that the maintenance costs associated with a particular trail system will be the same whether the entire system is used by all user groups or partitioned into separate sections for each.

In conclusion, the Proposed Action Alternative is designed to eliminate and reduce erosion through trail conversion, decommissioning, reconstruction, and an overall reduction in trail mileage. Fewer total miles of trails, combined with a higher proportion of trails brought into the National Forest system, will result in a system trails that are actively monitored and maintained, thereby reducing erosion problems originating from the trail system in the action area. The Proposed Action Alternative would further reduce maintenance by redevelopment of the trail system to meet design standards. Trails would be reconstructed or relocated to establish alignments that are sustainable and while the overall mileage of maintained trail would increase, it is expected that the maintenance requirements would reduce once the planned trail system was implemented. Under the No Action Alternative, chronic erosion problems will continue because routine maintenance cannot address them. Deferred maintenance needs would be addressed and "caught up" under the No Action Alternative; however, chronic trail problems would be addressed with "band aid" solutions that would require intensive maintenance. Nonsystem trails will not receive maintenance. These are generally devoid of erosion control features. Therefore, erosion will continue or worsen due to a lack of maintenance on nonsystem trails.

Issue 3: Stream Damage/Water Quality

Measure: Coverage of SEZs. Total number of stream crossings and the number of unarmored crossings.

Alternative 1 (Proposed Action)

Water quality and SEZ functionality within the transportationshed would improve as a result of decommissioning unnecessary trails, upgrading trail structures, rerouting portions of poorly located trails, and incorporating useful nonsystem trails into the trail system.

Under the current trail use pattern, 1.9 miles of trails (25,080 square feet of coverage) are within SEZs. Under the Proposed Action Alternative, 0.9 miles of trail (11,880 square feet of coverage) would be removed and restored, and 0.1 mile of trail (1,320 square feet of coverage) would be constructed, within SEZs. These changes would result in a net reduction of 0.8 miles of trail (10,560 square feet of coverage) within SEZs and a 42 percent decrease in the length of trails in SEZ for this transportationshed. Although the total length of trail in SEZs would decrease, the length of National Forest System Trail within SEZs would increase. This discrepancy is because most trails proposed for decommissioning are nonsystem trails, and all new trails will be brought into the National Forest system. Fewer total miles of trail within SEZs, combined with a higher proportion of trail brought into the National Forest system, is expected to benefit aquatic and riparian habitats and SEZs overall. Although some loss of riparian habitat will occur as a result of new trail construction/reroutes, a net increase in riparian vegetation cover is expected as a result of a net decrease in trail coverage. Moreover, perennial stream crossings will be reduced from 19 existing crossings to 14 crossings under the proposed action. System trails will be designed to minimize erosion and water quality degradation, and this improved trail system will require less frequent maintenance and associated disturbance to adjacent vegetation and streams. Also, the occurrence of problem areas on trails is expected to decrease; this should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas. Table 3-1, below, provides an overview of impacts to stream environment zones, both existing and proposed.

TABLE 3-1
EXISTING AND PROPOSED EFFECTS TO STREAM ENVIRONMENT ZONES IN THE NORTH SHORE TRANSPORTATIONSHED

	Existing Impacts	Proposed					Change in Impacts[1]
		Decommission	New	Reconstruct	Upgrade	Urban Trail	
Linear Impacts (miles)	1.9	0.9	0.1	0.2	0.4	0.1	-0.8
Area impacts (square feet)	25,080	11,880	1,320	2,640	5,280	1,320	-10,560
Area impacts (acres)	0.58	0.27	0.03	0.06	0.12	0.03	-0.24

NOTES: 1. Change in Impacts = New - Decommission

Some activities will involve work within ephemeral, seasonal, and perennial streams. Short-term accelerated erosion and sedimentation in streams from nearby construction activities could occur; these potential disturbances could affect in-stream habitat quality and fish and amphibian populations. However, impact avoidance measures pertaining to SEZs (particularly, in-channel excavation work) will be implemented to avoid or minimize potentially adverse effects on aquatic and riparian resources. For example, in-stream activities would only be conducted when the streams are dry or during minimum flow (base flow) periods. Also, implementing measures SOIL-4 (minimize ground and vegetation disturbance), SOIL-5 (mulch and restore soil productivity in disturbed areas), SEZ-2 (control sediment and restore soil productivity within SEZs), and SEZ-8 (limit staging of materials and equipment) are expected to maintain native riparian habitat composition, structure, and function. Without such measures, decommissioning activities may result in temporary construction-related water quality effects, including generating pollutants that could be discharged with runoff from the disturbed areas. Although flooding can occur within each SEZ, the proposed action would not include any modification to floodplain characteristics or the course and direction of currents and channel alignments. Figure 2-1 depicts the general locations of SEZs within the transportationshed.

The proposed action would result in long-term beneficial effects to aquatic habitat that supports waterfowl, fish, amphibians, and other aquatic species. Although some new trail construction will occur within SEZs, riparian/SEZ habitat quantity and quality will increase overall (Table 3-1); and, erosion and associated runoff of contaminants, sediment, and nutrient inputs to aquatic resources would be reduced.

Alternative 2 (No Action)

Under the No Action alternative, the current impacts on SEZs and stream crossings would continue. Some upgrades would occur in the course of routine maintenance, but major reroutes and decommissioning would not be implemented. Approximately 73 high or medium risk chronic erosion features would not be repaired and would continue to worsen over time. Many nonsystem trails would continue to be used, but funding is not provided to maintain these sections. Coverage of SEZs would not be reduced.

Interpretation and Conclusion

The primary purpose of the proposed action is establish a sustainable trail system while protecting resources, reducing impacts to water quality, reducing maintenance needs, and reducing erosion from trails. The proposed action is designed to remediate the potential adverse impacts of the existing trail system on water and soils. It is intended to improve the functioning of SEZs by reducing trail coverage within them. The proposed action would result in long-term net water quality benefits associated with decommissioning and relocation out of SEZs/riparian areas. Generally, an immediate improvement in the existing condition is realized after treatment. Erosion and associated runoff of contaminants, sediment, and nutrients would be reduced, resulting in decreased pollutant inflow to Lake Tahoe and an associated increase in water quality. Decommissioning trails eliminates or reduces existing soil disturbances caused by users and continued maintenance operations and allows for revegetation of existing trail surfaces. The proposed action would relocate trails to less sensitive

locations outside of the SEZ and the prior location would be decommissioned and restored where possible. The primary benefits to water quality and SEZ habitats come from decommissioning, reroutes, and the placement of new trails primarily outside of SEZs. Additional benefits would occur with the addition of 13.4 miles of nonsystem trails and 5.0 miles of urban trails into the National Forest System Trail so that maintenance and upgrades, which are critical for a low impact functioning trail, would be conducted on these previously unmaintained trails.

The proposed action improves water quality and reduces coverage and increases functionality of SEZs. It is also necessary to balance these concerns with a sound recreational trail system. In do doing, designers of a trail system must consider users' goals and objectives. People have traditionally gravitated towards water and watercourses; the existing trail system reflects this trend. To remove the entire trail system from all SEZs would be both impractical, from a technical standpoint, and unrealistic, from a sociological standpoint. Moreover, it would likely result in an increase of damaging, user-created trails.

The action alternative reduces the coverage of SEZs by 10,560 square feet, or 0.8 linear miles. The magnitude of this decrease becomes even more evident in light of the overall increase in trail mileage. The amount of new disturbance in SEZs is only 1,320 square feet, contrasted with a total restoration effort of 11,880 square feet. This restoration offsets new disturbance by a ratio of 9:1, resulting in a large net benefit to the stream environment. The remaining SEZ coverage will be upgraded using BMPs that have been proven most effective for reducing impacts in SEZs.

The BMPs that have been proven in the field to be most effective in reducing impacts on SEZs involve placement of fill. In the Basin, regulatory agencies (e.g., RWQCB) frequently use quantity of fill placed into SEZs as a measure of environmental impact. Several of the upgrades specified in the proposed action (see Appendix B) require placing fill in SEZs to reduce impacts on water quality. Examples of BMPs requiring fill placement are bank armoring, causeways, fords, and rock culverts. The proposed action entails 14 native ford crossings that entail large rock placement in SEZs to armor banks against degradation and to protect water quality. A total of 700 square feet of rock is expected to be placed in SEZs with implementation of the proposed action in order to stabilize banks, reduce erosion and reduce sedimentation of surface waters.

In conclusion, water quality under the Proposed Action Alternative will improve due to a reduction in trail coverage in low capability areas such as SEZs. Water quality and SEZ functionality within the transportationshed would improve as a result of decommissioning unnecessary trails, upgrading trail structures, rerouting portions of poorly located trails, and incorporating arterial nonsystem trails that can be upgraded to meet standards into the trail system. Under the No Action alternative, the current impacts on SEZs and stream crossings would continue. Some upgrades would occur in the course of routine maintenance, but major reroutes and decommissioning would not be implemented. Many chronic erosion features would not be repaired and would continue to worsen over time. Many nonsystem trails would continue to be used, but funding to maintain these sections would not be obtained. Coverage of SEZs would not be reduced.

3.2 Environmental Consequences of the Proposed Action Relative to Significance Thresholds (10 Criteria for FONSI)

In 1978, the Council on Environmental Quality promulgated regulations for implementing NEPA. These regulations include a definition of *significantly* as used in NEPA (40 CFR 1508.27). The elements of this definition are critical to reducing paperwork through use of a Finding of No Significant Impact (FONSI) when an action will not have a significant effect on the human environment and is therefore exempt from requirements to prepare an EIS. *Human environment* is a comprehensive phrase that includes the natural and physical environments and the relationship of people with those environments. Many of the analyses focus on different resource areas such as air quality, water quality, wildlife, vegetation, recreation, and others. It is important to note that for each of the 10 FONSI criteria, all of the relevant resource areas (i.e., human environment as defined by NEPA) have been considered.

Context

The significance of an action must be analyzed in several contexts, such as the whole of society (e.g., ethical considerations, national interests); affected region; affected interests; and locality. Significance varies with the setting. In the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

The context of the action alternative is the Basin. Even in a local context, the action alternative would not pose significant short- or long-term effects. The action alternative is designed to minimize and avoid adverse impacts to the extent that such impacts are less than significant, even at the local level.

Intensity

Intensity refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following points should be considered in evaluating intensity.

1) Impacts May be both Beneficial and Adverse

A significant effect may exist even if, on balance, effects are believed to be beneficial. The action alternative would not result in significant adverse short-term or long-term effects. Implementation of the action alternative would result in long-term beneficial effects on soils, SEZs and water quality, vegetation, wildlife, and fisheries resources in the Basin. Potential short-term adverse effects on these same resources during implementation of trail treatments are avoided or minimized through the Design Features described in Section 2. These potential short-term impacts, even if considered separately from the beneficial effects, have been minimized to less-than-significant levels.

Soils

The long-term effects of the action alternative on soil resources would be beneficial. Generally, an immediate improvement to existing conditions would be realized after treatment. Trail decommissioning would result in long-term decreases of erosion and sedimentation because of increased soil cover and infiltration capacity. Generally, trails increase the amount of impervious coverage in a watershed, thereby increasing the likelihood of offsite adverse cumulative effects such as increased peak flows that can destabilize channels. Removal of trails from the forest landscape would reduce the percentage of impervious coverage. Impervious coverage is reduced by tilling and recontouring, allowing for infiltration rather than the concentration of storm water. Tilling increases the infiltration capacity of the soil within the tilled area. Overall, the procedure results in a more "roughened" condition with greater infiltration capacity.

In addition, development of a trail system that incorporates design principals for sustainability will reduce maintenance needs, which in turn will reduce a major sediment generating activity. Trail maintenance loosens surfaces that have been compacted to reshape and recompact trail features such as drainages. Every effort is made to compact as much as possible, however some settling does occur and some soil is lost in the process. Trails that follow sustainable design principals are developed to minimize the need for constructed drainage features and for eventual maintenance. While every trail needs maintenance, implementation of the proposed trail system will result in a substantially reduced maintenance frequency.

Exposure of buried rock and the addition of woody debris and mulch increase ground cover, slow surface runoff, and increase infiltration. Natural drainage features are reestablished, providing for more naturally functioning hillslope hydrology. Improvements in physical soil properties that directly affect plant growth will increase soil productivity. The effective blocking of access points facilitates the eventual establishment of vegetation. Trail decommissioning also reduces potential illegal trail use through sensitive areas (e.g., meadows, SEZs, and riparian areas). Accordingly, short-term effects are minimal, and the long-term effect is the ecological restoration of a previously disturbed feature. Trail relocation through reroutes, closures, and new construction (as identified in the action alternative) will additionally reduce impacts by moving uses to less sensitive areas. It is anticipated that the proposed trail system may also curb illegal use and off-trail impacts on soils by implementing logical connections to supplement the existing trails.

Although it is unlikely, short-term accelerated erosion and sedimentation may result from construction activities associated with the proposed trail treatments, primarily trail decommissioning, rerouting, and new construction. Construction procedures used during decommissioning include ripping compacted trail surfaces and redistributing fillslope and cutslope soil materials. These procedures would cause vegetation to be uprooted and soil to be disturbed beyond the area of the existing trail surface, but not beyond the area of the trail prism. Rerouting and new construction involve the removal of vegetation and soil contouring to create a trail prism. The reroutes and new construction would be situated to reduce impacts on SEZs and water quality; however, there could be a short-term increase in erosion rates associated with new trail construction. During the initial settling of new trail segments, sedimentation and compaction

would occur. Abandoned sections of trail will be decommissioned as part of the rerouting process. The disturbances may cause a minor short-term increase in erosion rates until decommissioned areas have been revegetated.

The impact Design Features described in Section 2 will avoid or minimize potential short-term adverse effects from accelerated erosion and sedimentation associated with trail decommissioning activities. Considered separately from the long-term beneficial effects, these short-term potential effects are less than significant.

Stream Environment Zones and Water Quality

The primary purpose of the proposed action is establish a sustainable trail system while protecting resources, reducing impacts to water quality, reducing maintenance needs, and reducing erosion from trails. The proposed action is designed to remediate the potential adverse impacts of the existing trail system on water and soils. It is intended to improve the functioning of SEZs by reducing coverage by trails. The proposed action would result in long-term net water quality benefits associated with decommissioning and relocation out of SEZs/riparian areas. Generally, an immediate improvement in the existing condition is realized after treatment. Erosion and associated runoff of contaminants, sediment, and nutrients would be reduced, resulting in decreased pollutant inflow to Lake Tahoe and an increase in water quality. Decommissioning trails eliminates or reduces existing soil disturbances caused by users and continued maintenance operations and allows for revegetation of existing trail surfaces. The proposed action would relocate trails to less sensitive locations outside of the SEZ and the abandoned trails would be decommissioned and restored. The primary benefits to water quality and SEZ habitats come from decommissioning, reroutes, and the creation of a more logical trail system.

Under the current trail use pattern, approximately 1.9 miles of trails are within SEZs. Under the proposed action, 0.9 miles of trail will be removed and restored, and 0.1 mile of trail will be constructed within SEZs. This would result in a net reduction of 0.8 mile of trail within SEZs and a 42 percent decrease in the length of trails in SEZ for this transportationshed. Although the total length of trail in SEZs would decrease, the length of National Forest System Trail within SEZs would increase. This is because most trails proposed for decommissioning are nonsystem trails, and all new trails will be brought into the National Forest system. A combination of fewer total miles of trail within SEZs and a higher proportion of trail brought into the National Forest system is expected to benefit aquatic and riparian habitats. Although some loss of riparian habitat will occur as a result of new trail construction/reroutes, a net increase in riparian vegetation cover is expected as a result of a net decrease in trail coverage. System trails will be designed to minimize erosion and water quality degradation; and, this improved trail system will require less frequent maintenance and associated disturbance to adjacent vegetation and streams. Also, the occurrence of problem areas on trails is expected to decrease; this decrease should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas. Additional benefits will occur with the addition of 13.4 miles of nonsystem trails and 5.0 miles of urban trails into National Forest System Trails so that maintenance and upgrades, which are critical for a low impact functioning trail, will be able to be accomplished on these previously unmaintained trails.

The action alternative would not involve groundwater extraction or major excavations that could intercept or otherwise interfere with groundwater flow or groundwater quality. The action alternative would result in a reduction of surface runoff rates and would improve water infiltration into the soil. Additionally, trail recontouring eliminates interception and routing of surface water to drainage channels. This improves subsurface drainage from existing conditions. Consequently, the proposed action would benefit groundwater flow.

Some activities will involve work within ephemeral, seasonal, and perennial streams. Short-term accelerated erosion and sedimentation in streams from nearby construction activities could occur; these potential disturbances could affect in-stream water quality. However, the Design Features pertaining to SEZs (particularly, in-channel excavation work) will be implemented to avoid or minimize potentially adverse effects on aquatic and riparian resources. For example, in-stream activities would only be conducted when the streams are dry or during minimum flow (base flow) periods. Also, implementing measures SOIL-4 (minimize ground and vegetation disturbance), SOIL-5 (mulch and revegetate disturbed areas), SEZ-2 (control sediment and revegetate within SEZs), and SEZ-8 (limit staging of materials and equipment) are expected to maintain native riparian habitat composition, structure, and function. Without such measures, decommissioning activities may result in temporary construction-related water quality effects, including generating pollutants that could be discharged with runoff from the disturbed areas. Although flooding can occur within each SEZ, the proposed action would not include any modification to floodplain characteristics or the course and direction of currents and channel alignments. Figure 2-1 depicts the general locations of SEZs within the project area. Considered separately from the long-term beneficial effects, these short-term potential effects are less than significant.

The proposed action would result in long-term beneficial effects on aquatic habitat that supports waterfowl, fish, amphibians, and other aquatic species. Although some new trail construction will occur within SEZs, riparian/SEZ habitat quantity and quality will increase overall; and, erosion and associated runoff of contaminants, sediment, and nutrient inputs to aquatic resources would be reduced.

Vegetation, Wildlife, and Fisheries

The proposed action would have short-term adverse impacts on biological resources in some locations. The proposed action is expected to result in several long-term net benefits to biological resources, including an increase in habitat quality and/or total habitat for several terrestrial and aquatic species, a net reduction of noise and mechanized/motorized traffic disturbance in and near some sensitive habitats, a net reduction of 0.8 miles of trail within SEZs, and less human access to some sensitive areas supporting special-status species. The impact Design Features described in Section 2 will be implemented to minimize or avoid short- and long-term adverse effects on biological resources. Any short-term impacts on biological resources during construction will be minimized and localized; moreover, construction activities at each location will be completed in a short period. The proposed action was designed to avoid or minimize long-term effects on biological resources over the long term while meeting the purpose and need of the project. It is expected that adverse effects in some locations will be offset by long-term net benefits. These effects are summarized below.

The BE/BA prepared for this project analyzed potential direct and indirect effects of the proposed action on species listed as endangered or threatened, or proposed for listing, under the federal Endangered Species Act of 1973 as amended (ESA); species designated as sensitive by the Regional Forester in Region 5; and species designated as special-interest species by TRPA. The BE/BA is incorporated by reference; pertinent conclusions of the BE/BA are incorporated into the summary below. However, the BE/BA should be consulted for information on the known occurrences and status of each special-status species in the project area, as well as a detailed analysis of potential beneficial and adverse effects on each species. The BE/BA is available for review at the LTBMU Supervisor's Office.

Vegetation Communities and Special-Status Plant Species

The proposed action includes decommissioning (i.e., closing and rehabilitating) approximately 14.5 miles of existing trail, converting 13.4 miles to managed National Forest System Trails for monitoring and maintenance, classifying 5.0 miles of existing nonsystem trails as urban trails, repairing and reconstructing 26.3 miles of trails, and several other measures designed to reduce impacts on soil resources and water quality. Additionally, up to 9.6 miles of new trail construction would occur, to facilitate a more logical and coherent transportation system and to reroute trails that are currently located in sensitive areas, such as SEZs.

As stated before, trail decommissioning and new construction would result in a net reduction of 4.9 miles of trail, including 6.6 fewer miles of motorized trail, in the transportationshed. Although the total length of trail would decrease, the length of National Forest System Trail would increase. This is because 9.7 miles of the 14.5 miles of trails proposed for decommissioning are nonsystem trails. In addition, 13.4 miles of nonsystem trails will be converted to system trails, 5.0 miles of existing nonsystem trails will be classified as urban trails, and all new trails will be brought into the National Forest system. Fewer total miles of trail, combined with a higher proportion of trail brought into the National Forest system, is expected to benefit vegetation communities as system trails are actively monitored and maintained. A net increase in vegetation cover is expected as a result of less trail coverage. System trails will be designed to minimize erosion and water quality degradation. This improved trail system will also require less frequent maintenance and associated disturbance to adjacent vegetation. The occurrence of problem areas on trails is also expected to decrease; this should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas.

Most disturbances to vegetation resulting from trail decommissions would occur within the existing trail prism. Some small-diameter trees or snags could be felled across trails to discourage continued access; no live trees greater than 24 inches diameter at breast height (dbh) will be felled. Snags larger than 24 inches will be avoided unless they are deemed a hazard (see measure SOIL-4). Vegetation disturbances associated with trail decommissioning would be minimized and short-term, and disturbed areas would be revegetated according to measure SOIL-5. In the long term, disturbances to vegetation along these trails as a result of mechanized, motorized, or pedestrian use would be eliminated; and, vegetation communities are expected to benefit from plant establishment and succession on decommissioned trails in the action area.

Trail upgrades are not expected to adversely affect vegetation communities, because these upgrades will occur within the existing trail prism. Trail upgrades could benefit vegetation communities. Upgrades will result in an improved trail system that will require less frequent maintenance and associated disturbance to adjacent vegetation. Also, trail upgrades designed to reduce erosion and improve water quality are expected to reduce the occurrence of problem areas on trails; this should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas.

Some vegetation will be removed or disturbed to construct new trails/reroutes. However, no live trees greater than 24 inches dbh will be felled. Snags larger than 24" will be avoided unless they are deemed a hazard. The felling of some green trees or snags, or disturbances to herbaceous or shrub species, would not significantly contribute to changes in stand structure or vegetation composition in the action area.

Impacts on threatened, endangered, Forest Service sensitive, and TRPA special-interest plant, lichen, and fungi species will be avoided or minimized to the maximum extent practicable (see Measure BIO-1). Based on the analysis presented in the BE/BA, suitable habitat for 23 plant, lichen, and fungi species that are designated as Forest Service and/or TRPA special-interest species occurs within the action area. 12of these species are associated with aquatic and riparian habitats (i.e., SEZs). The remaining 11 species are associated with various upland habitats found in the action area, but not necessarily within areas proposed for project activities. Potential effects of the proposed action on those species are analyzed in the BE/BA, which is hereby incorporated by reference.

Comprehensive surveys for these species have not been conducted throughout the transportationshed, but all areas that may be potentially impacted by the proposed action were surveyed from 2004 through 2006. None of the special-status plant, lichen, or fungi species analyzed in this document were observed during the 2004-2006 surveys. One population of *Arabis* sp. was documented near Forest Service road 16B73, but it could not be conclusively determined to species.

Most project activities, including reconstruction and decommissioning, will occur within the existing trail prism, and areas proposed for trail reroutes and new construction have been completely surveyed. However, all areas proposed for new construction and re-routing will be re-surveyed immediately prior to construction activities to account for any minor changes in trail alignments. Any sighting of special-status plant, lichen, or fungi species before or during project implementation will be reported to the Forest Service botanist. Where these species are detected, they will be delineated and avoided during project activities

These species would not be directly affected by the proposed action because project activities avoid all suitable habitat or, in areas where suitable habitat is impacted, pre-construction surveys will allow avoidance of any populations present. The proposed action is expected to enhance habitat for riparian-associated species in the long-term. Under the proposed action, a net reduction of 0.8 miles of trails within SEZs will occur, including a net reduction of trails within suitable habitat for several special-status plants. Fewer total miles of trail within SEZs, combined with a higher proportion of trail brought into the National Forest system, is expected to benefit aquatic and riparian habitats. Although some loss of riparian habitat will occur as a result of new

trail construction/reroutes, a net increase in riparian vegetation cover is expected as a result of a net decrease in trail coverage. System trails will be designed to minimize erosion and water quality degradation; and, this improved trail system will require less frequent maintenance and associated disturbance to adjacent vegetation and streams. Also, the occurrence of problem areas on trails is expected to decrease; this should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas.

Overall, the proposed action is expected to have long-term beneficial effects on vegetation communities and special-status plant species: specifically, the proposed action would entail a net increase in upland and riparian vegetation and reduced disturbance. Additionally, off trail travel is expected to decrease as a result of establishment of a trail system that better meets user needs. Considered separately from the long-term beneficial effects, any short-term potential adverse effects are less than significant.

Special-Status Terrestrial Wildlife Species and Habitat

The effects of trail decommissioning, new construction and reroutes, upgrades, and changes in use designations on special-status wildlife species and habitat can be categorized into short-term and long-term effects. These are described below. The BE/BA should be consulted for information on the known occurrences and status of each special-status species in the project area and a detailed analysis of potential beneficial and adverse effects on each species. Potential effects of the proposed action on riparian and aquatic wildlife habitat are addressed below in *Aquatic Resources, Riparian Habitat, and Special-Status Fish*.

Short-Term Effects

In the short term (i.e. during implementation of project activities), activities associated with trail construction, decommissioning, and upgrades could temporarily disturb wildlife foraging and breeding habitat. Disturbances to wildlife habitat resulting from trail construction, decommissioning, and upgrades would be limited to the existing or proposed trail prism and adjacent areas. The felling of some green trees or snags (less than 24 inches in dbh), or disturbances to herbaceous or shrub species along the existing trail prism, are not expected to significantly contribute to changes in habitat structure or composition in the project area. Habitat disturbances would be minimized and short-term, and disturbed areas would be restored in accordance with Measure SOIL-5. These short-term effects on species habitat would be limited to removal of a small number of individual trees, and would likely be offset by the long-term benefit of an improved trail network that avoids sensitive wildlife areas (see *Long-Term Effects* below).

Removal of green and standing-dead trees could result in habitat loss for those individuals dependant on these habitat elements. Removing large trees or snags could reduce the number of potential nesting, foraging, and denning sites available to wildlife species that require large trees, snags, and/or down logs (e.g., California spotted owl, northern goshawk, Townsend's big-eared bat, American marten). However, only small-diameter trees or snags would be felled during the proposed action; no live trees larger than 24 inches dbh

would be felled. Snags larger than 24 inches will be avoided unless they are deemed a hazard. When tree-felling is used in trail decommissions, it will be sporadic and only implemented as necessary to block trails and cover the trail surface in a non-continuous manner. In addition, most new trail construction would occur in habitat types that have relatively lower canopy cover and tree density when compared to the existing conditions (see **Table 3-2** for specific impacts to habitat types). In effect, the proposed action would decommission several trails that are in sensitive habitat while reducing the overall trail mileage within the action area. Based on these considerations, the proposed action is not expected to significantly contribute to changes in overall habitat structure, distribution, or composition in the action area.

TABLE 3-2
EXISTING AND PROPOSED EFFECTS TO WHR HABITAT TYPES IN THE NORTH SHORE TRANSPORTATIONSHED

WHR Type	Existing Acres Impacted	Proposed					Change in Acres Impacted[1]
		PD	NC	RC	PU	UT	
SMC	24.54	8.27	6.05	14.27	7.89	2.53	-2.22
RFR	4.35	0.75	0.98	3.89	0.83	0	+0.23
LPN	3.08	1.78	0.18	2.16	0.25	0	-1.60
JPN	6.67	0.49	0.62	1.45	2.12	1.83	+0.13
WFR	0.08	0	0	0.06	0	0	0
SCN	0.15	0.07	0	0.15	0	0	-0.07
ASP	0.29	0	0	0.23	0.02	0	0
MRI	0.35	0.09	0	0	0.12	0	-0.09
MCP	4.09	1.89	1.28	2.44	1.57	0.03	-0.61
WTM	0	0	0	0	0	0	0
AGS	0.11	0.03	0.01	0.10	0	0	-0.02
BAR	0.07	0	0	0.08	0	0	0

NOTES: 1. Change in Acres Impacted = NC – PD

Key:
PU- Planned Upgrade
PD- Planned Decommission
RC- Reconstruct/Repair
NC- New Construction
UT- Urban Trail
MT- Motorized Trail

SMC- Sierran mixed conifer
RFR- Red fir
LPN- Lodgepole pine
JPN- Jeffrey pine
WFT- White fir
SCN- Subalpine conifer
ASP- Aspen
MRI- Montane riparian
MCP- Montane chaparral
WTM- Wet meadow
AGS- Annual grassland
BAR- Barren

Although trail decommissioning and upgrade activities could temporarily disturb some wildlife species while they are being conducted, existing disturbances to habitat along these trails as a result of mechanized, motorized, or pedestrian use would be immediately eliminated or reduced.

Further, conducting surveys for some species (e.g., northern goshawk and California spotted owl) (see Measure BIO-5) and implementing LOPs (see Measure BIO-7) will further reduce the potential for adverse effects. Importantly, LOPs will be implemented in the known activity centers of species; therefore, short-term disturbances to those species in their known activity centers will be avoided during biologically sensitive periods.

Temporary (i.e. during implementation of project activities) disturbances to foraging, movement, and reproductive activities of special-status wildlife species resulting from noise or other project-related factors could occur. However, project activities within the action area will be dispersed and localized, and project activities at each location will be completed over a short period of time. Despite this short disturbance period, project-related noise could disturb individuals and possibly disrupt or prevent breeding activities in some locations. Disturbances resulting from trail decommissioning and upgrades would occur within and adjacent to the existing trail prism, which currently experience noise and other disturbances associated with motorized and nonmotorized traffic and maintenance. Where disturbances associated with project activities occur in or near habitat for sensitive wildlife species, LOPs will be implemented to avoid disturbances to these species during sensitive breeding periods (see Measure BIO-7). The proposed action is not expected to disturb the foraging, reproductive, or movement behavior of most wildlife species above existing disturbance levels.

During development of the proposed action, the project was designed to avoid most construction-related activities within designated sensitive wildlife habitat (e.g., protected activity centers [PACs]). However, some activities will occur within and near sensitive habitats. There are five California spotted owl PACs and Home Range Core Areas (HRCAs), and one interim PAC/HRCA, in the action area, as well as five historical nest sites; spotted owl HRCAs are 1,000-acre land allocations that include the 300-acre PAC. There are five northern goshawk PACs and 20 historical nest sites in the action area. Some project activities will occur within some of these areas. Table 3-3 (see Ecologically Important Areas, below) summarizes elements of the proposed action that will occur within California spotted owl PACs and HRCAs; Table 3-4 (see Ecologically Important Areas, below) summarizes elements that will occur within northern goshawk PACs. As described above, temporary disturbances associated with construction-related activities within spotted owl and northern goshawk PACs will be subject to LOPs to avoid disturbances to these species during sensitive breeding periods. Potential effects (including long-term effects) of the proposed action on California spotted owl and northern goshawk are discussed further in the following sections.

Long-Term Effects

Long-term effects of the new trail system on terrestrial wildlife will depend on several factors such as the type and location of change in trail management, species affected, and the spatial scale over which changes in use patterns are considered. Within the action area, 14.5 miles of trail would be decommissioned and 9.6 miles of new trail construction/reroutes would occur under the proposed action. This would result in a net reduction of 4.9 miles of trail, including 0.8 miles within SEZs/riparian habitats, as well as a reduction of 6.6 miles of motorized trails. Also, 13.4 miles of nonsystem trail would be upgraded and brought into the forest system; and 5.0 additional miles would be designated as urban trail. A net reduction of trail coverage within designated sensitive habitat, including PACs, HRCAs, and SEZs collectively, will occur.

The proposed action will provide a net reduction in the amount of acres impacted in the Sierran mixed conifer, lodgepole pine, subalpine conifer, montane riparian, montane chaparral, and annual grassland habitat types. This will benefit those species, such as California spotted owl and northern goshawk that utilize these habitat types by shifting recreational use from high capability habitat to low capability habitat.

Trail decommissioning and upgrades are expected to improve terrestrial wildlife habitat; these improvements are expected to offset short-term adverse effects (e.g., temporary construction-related disturbances) associated with decommissioning and upgrades described above. Disturbances to habitat along these trails as a result of mechanized, motorized, or pedestrian use would be reduced; and, vegetation communities are expected to benefit from plant establishment and succession on decommissioned trails in the action area.

At specific locations where new trails will be constructed or rerouted, increased motorized or nonmotorized recreation in these areas would occur. The effects of recreation on wildlife depend on several factors, including the type, magnitude, frequency, and predictability of recreation activity; location and timing of activity; and the sensitivity of a species based on its life history characteristics (see Knight and Cole 1995). It is assumed that individuals of all terrestrial wildlife species analyzed in the BE/BA for this EA are sensitive, to some degree, to increases in motorized and nonmotorized use.

Overall, assuming that the amount of trail coverage is proportional to use, the proposed action is not expected to increase motorized and nonmotorized recreation use significantly above background levels in the action area. There will be a decrease in trail coverage within the transportationshed; however, the new trail system could attract more users if it is perceived publicly as more logical, safer, and more enjoyable than the existing system. At a more local scale (i.e., in or near specific locations where trail management will change), certain types and concentrations of recreation use would increase or decrease. Depending on the sensitivity of wildlife species to these changes, the local suitability and use of habitat for each species would increase or decrease accordingly. Based on the analysis of direct and indirect effects of each species presented in the following sections, northern goshawk and California spotted owl would be most affected by the proposed action in the long-term. Effects of the proposed action on these species are summarized below.

Northern Goshawk. Northern goshawk is considered highly sensitive to recreation disturbance. Although project activities will occur within northern goshawk PACs (Table 3-4), these activities are expected to benefit this species in the long term. The new trail system would include 0.8 miles of motorized trail coverage within the Griff Creek northern goshawk PAC. However, 1.0 miles of motorized use trails would be decommissioned within this PAC, and motorized use would be completely absent from goshawk PACs in other locations. Overall, the proposed action would result in a net decrease of 1.9 miles of trail coverage within goshawk PACs, and, through decommissioning and reclassifying use from motorized to nonmotorized, a decrease of 1.7 miles of motorized use trails.

Northern goshawk is particularly sensitive to human disturbance through the pair bonding and nest initiation phase (mid-February through late May), usually abandoning nesting attempts in areas of disturbance. In 1998, Keane documented temporary or permanent territory abandonment on three occasions in the Basin as a result of humans harassing active nests (Tahoe Regional Planning Agency 2001). In these cases, access to the nest sites was facilitated by trails or roads traveling through the territories. Accordingly, reduction of motorized and nonmotorized access to northern goshawk territories is expected to reduce this risk. Also, any change in trail management near northern goshawk PACs that could facilitate increased motorized or mechanized access is unlikely to affect northern goshawks during the sensitive pair bonding period, because these trails would typically be inaccessible due to snow cover during this period.

California Spotted Owl. The new trail system would include 2.3 miles of motorized trail coverage within the Griff Creek spotted owl PAC (PC128) and its associated HRCA. However, 1.5 miles of trails would be decommissioned within this PAC/HRCA, including 1.3 miles of motorized use trail, and motorized use would be completely absent from spotted owl PAC/HRCAs in other locations. Overall, the proposed action would result in a net decrease of 1.5 miles of trail coverage within spotted owl PACs and HRCAs, and, through decommissioning and reclassifying use from motorized to nonmotorized, a decrease of 0.7 miles of motorized use trails within spotted owl PACs and HRCAs.

The frequency and intensity of some activities in the Griff Creek PAC could increase as a result of increased motorized access and associated recreational activities, such as driving, camping, shooting, or hiking off-road into suitable nesting habitat. If owls nest there, increased motorized and nonmotorized trail access within the PAC could disturb nesting birds and reduce their breeding productivity. Foraging activities of adults and juveniles during and after the breeding season could be disturbed, and parental care (e.g., incubating eggs, feeding young) could be compromised if breeding adults spend considerable time avoiding perceived intruders. Because of existing levels of development and recreation in the Basin and a likely increase in future recreation demand, substantial expansion or increase of the spotted owl population may be unlikely. Therefore, adverse impacts on spotted owl breeding pairs in the Basin could affect a considerable proportion of the breeding population and its trajectory. However, the background disturbance level within the Griff Creek spotted owl PAC includes existing motorized uses.

Trail decommissioning and elimination of motorized access in the remaining PAC/HCRAs will improve habitat quality and potentially enhance breeding productivity there.

Because the structural habitat requirements of California spotted owl are similar to those of northern goshawk, northern goshawk PACs include suitable spotted owl habitat (and frequently overlap with spotted owl PACs). Overall, the proposed action will reduce the total trail coverage and the amount of motorized access within northern goshawk and spotted owl PACs/HRCAs combined (see Tables 3-3 and 3-4). This reduction is expected to increase the amount of suitable habitat available to California spotted owl.

American Marten. Of all forest carnivore species addressed in the BE/BA, American marten is the only one likely to occur in the action area. Suitable habitat is present throughout the action area, and this species probably occurs in the action area. The most likely long-term effect of the proposed action on American marten is a shift in local habitat use and distribution of individuals in response to trail construction/reroutes, decommissioning, and changes in use designation in specific locations. American martens are expected to abandon or avoid areas where trails are constructed, particularly motorized trails. If new trails/reroutes are constructed within or near an individual's home range, its survival or reproductive productivity could be reduced. In areas where trails are decommissioned or motorized use is eliminated, habitat suitability for and probability of occupancy by American martens would increase.

Most conifer forest and riparian habitats in the action area are probably suitable for American marten. Also, because the structural habitat requirements of marten are similar to those of California spotted owl and northern goshawk, PACs and HRCAs probably include high-quality marten habitat. Overall, a reduction of total trail coverage within the action area, particularly in mature forest habitats (e.g., northern goshawk and spotted owl PACs/HRCAs combined), is expected to increase the amount of suitable habitat available to American marten. This reduction of trail coverage, particularly in mature forest habitat, is expected to offset potential adverse impacts associated with new motorized access in other locations.

The proposed action is not expected to result in a net adverse impact on special-status wildlife species and habitats, and it will benefit some species (e.g., northern goshawk). Although the proposed action could adversely affect California spotted owl, northern goshawk, and American marten individuals locally (as discussed above), the magnitude and intensity of potential adverse effects in some locations (i.e., the Griff Creek spotted owl PAC) relative to potential benefits in other locations are not expected to substantially affect the regional populations. Also, the total amount of mature forest habitat suitable for California spotted owl, northern goshawk, and American marten in the action area is expected to increase; this is a long-term benefit for these species. Considered separately from beneficial effects of the proposed action, potential adverse effects are less than significant.

Aquatic Resources, Riparian Habitat, and Special-Status Fish

The primary purpose of the proposed action is establish a sustainable trail system while protecting resources, reducing impacts to water quality, reducing maintenance needs, and reducing erosion from trails. The proposed action is designed to remediate the potential adverse impacts of the existing trail system on water and soils. It is intended to improve the functioning of SEZs by reducing coverage by trails. The proposed action would result in long-term net water quality benefits associated with decommissioning some trails and relocating others out of SEZs/riparian areas. Generally, an immediate improvement in the existing condition is realized after treatment. Erosion and associated runoff of contaminants, sediment, and nutrients would be reduced, resulting in decreased pollutant inflow to Lake Tahoe and improved water quality. Decommissioning trails eliminates or reduces existing soil disturbances caused by users and continued maintenance operations and facilitates revegetation of existing trail surfaces. The proposed action would relocate trails to less sensitive locations outside SEZs, and abandoned trail

segments would be decommissioned and restored. The primary benefits to water quality and SEZ habitats come from decommissioning, reroutes, and the creation of a more logical trail system. Additional benefits would occur with the conversion of 13.4 miles of nonsystem trails and 5.0 miles of urban trails into National Forest System Trails so that maintenance and upgrades, critical for minimizing impacts of functioning trails, will be able to be undertaken on these previously unmaintained trails.

Under the current trail use pattern, 1.9 miles of trails are within SEZs. Under the proposed action, 0.9 miles of trail will be removed and restored, and 0.1 mile of trail will be constructed within SEZs. This would result in a net reduction of 0.8 miles of trail within SEZs and a 42 percent decrease in the length of trails in SEZ for this transportationshed. Although the total length of trail in SEZs would decrease, the length of National Forest System Trail within SEZs would increase. This is because most trails proposed for decommissioning are nonsystem trails, and all new trails will be brought into the National Forest system. Fewer total miles of trail within SEZs, combined with a higher proportion of trail brought into the National Forest system, is expected to benefit aquatic and riparian habitats. Although some loss of riparian habitat will occur as a result of new trail construction/reroutes, a net increase in riparian vegetation cover is expected as a result of a net decrease in trail coverage. System trails will be designed to minimize erosion and water quality degradation; and, this improved trail system will require less frequent maintenance and associated disturbance to adjacent vegetation and streams. Reduction of maintenance activities will benefit water quality because these activities have the potential to generate sediment. Also, the occurrence of problem areas on trails is expected to decrease; this should reduce the frequency of off-route travel and disturbance by pedestrian and mechanized users attempting to avoid problem areas.

Some activities will involve work within ephemeral, seasonal, and perennial streams. Short-term accelerated erosion and sedimentation in streams from nearby construction activities could occur; these potential disturbances could affect in-stream habitat quality and fish and amphibian populations. However, the impact avoidance measures pertaining to SEZs (particularly, in-channel excavation work) will be implemented to avoid or minimize potentially adverse effects on aquatic and riparian resources. For example, in-stream activities would only be conducted when the streams are dry or during minimum flow (base flow) periods. Also, implementing measures SOIL-4 (minimize ground and vegetation disturbance), SOIL-5 (mulch and revegetate disturbed areas), SEZ-2 (control sediment and revegetate within SEZs), and SEZ-8 (limit staging of materials and equipment) are expected to maintain native riparian habitat composition, structure, and function. Without such measures, decommissioning activities may result in temporary construction-related water quality effects, including generating pollutants that could be discharged with runoff from the disturbed areas. Although flooding can occur within each SEZ, the proposed action would not include any modification to floodplain characteristics, or the course and direction of currents and channel alignments. Trails within the SEZ will be designed to withstand seasonal and episodic flooding without degradation to the surrounding ecosystem.

The proposed action would result in long-term beneficial effects on aquatic habitat that supports waterfowl, amphibians, fish, and other aquatic species. Although some new trail construction will occur within SEZs, riparian/SEZ habitat quantity and quality will experience a net increase, and erosion and associated runoff of contaminant, sediment, and nutrient inputs to aquatic resources would be reduced. Considered separately from the long-term beneficial effects, any short-term potential effects are less than significant.

2) The Degree of Effects on Public Health or Safety

The proposed action would not affect public health and would increase public safety through the establishment of a more logical trail system, with allowable uses clearly indicated at trailheads.

There are some concerns regarding the safety of multiple-use trails, primarily involving the shared use of trails by motorized users, mountain bikes, equestrians, and pedestrians. Motorized uses have been segregated to increase safety and concentrate use. See the discussion on safety earlier in this section (page 3-1).

3) Unique Characteristics of the Geographic Area such as Proximity to Historic or Cultural Resources, Park Lands, Prime Farmlands, Wetlands, Wild and Scenic Rivers, or Ecologically Critical Areas

Heritage Resources

There are 56 previously identified heritage resources (or, cultural resources) within 25 meters of existing trails. Additionally, two heritage resources are within 25 meters of proposed reroutes.

All previously unsurveyed areas that could be affected by the proposed action were surveyed for heritage resources. By far the vast majority of the proposed North Shore Trail ATM trail actions had been previously surveyed. As such it was only necessary to inventory relatively small, disjointed sections of trail and road prisms within the larger project area. All resources located as a result of the survey were formally recorded. All resources adjacent to the project area will be flagged and avoided according to the Standard Resource Protection Measures in the Forest Service's Programmatic Agreement (PA) for Compliance with Section 106 of the National Historic Preservation Act for Undertakings in the Pacific Southwest Region. In addition, for known heritage resource sites, the proposed action will implement site-specific heritage treatment recommendations as outlined in the Heritage Resources Inventory Report for the North Shore Trail ATM. Previously and newly identified heritage resources will be monitored to see if they are being affected by existing trails or could potentially be affected by the proposed action.

No further cultural resource investigations are warranted unless buried archaeological remains are found during construction or other activities, or unless the project design is altered. Should any artifacts or an unusual amount of bone, shell, or nonnative stone be uncovered during construction or other ground-disturbing activities, a professionally qualified archaeologist should be consulted immediately for evaluation of the find.

Ecologically Important Areas

There are five California spotted owl PACs/HRCAs, and one interim PAC/HRCA, in the action area, as well as five historical nest sites. All six PACs/HRCAs occur within 0.25 mile of a proposed project activity. Two of these PAC/HRCAs overlap with three northern goshawk PAC/HRCAs. **Table 3-3** summarizes the length and type of trail proposed for treatment within each spotted owl PAC and HRCA.

- **Griff Creek Spotted Owl PAC/HRCA (PC128).** Currently there are 3.4 miles of existing trails within this PAC and 3.3 miles of existing trail within the associated HRCA. 1.4 miles of trails (18E18E, 18E18A, and 1818F) will be decommissioned within this PAC, and an additional 0.1 miles of trails (18E18E, 18E18A, and 18E18F) will be decommissioned within the HRCA. 1.9 miles of trail (18E18C, 18E18B, and 18E18) will be repaired and/or reconstructed within this PAC, while 0.9 miles of trail (18E18C, 18E18B, 18E18D, 18E18, and 18E16) will be repaired and/or reconstructed within the HRCA. No trails will be classified as urban trails within the PAC; however, 1.8 miles of trails (18E18.2A, 18E18.2, 18E18.4B, 18E18.4, 18E18.4A, and 18E18.2B) will be classified as urban trails within the HRCA. Approximately 0.1 miles of nonsystem trails (18E18.1) will be converted to system trails within the PAC, while 0.5 miles of trails (18E18.6 and 18E16B) will be converted to system trails within the HRCA. No new trail construction will occur within the PAC; however, construction of 0.6 miles of new motorized trail will occur within the HRCA. The decommissioning of 18E18E, 18E18A, and 1818F will remove seasonal motorized disturbance from the current core of the spotted owl PAC and move it to the less sensitive HRCA. However, motorized use will still occur elsewhere within the PAC. The net effect of the proposed action within this PAC/HRCA is expected to be moderately beneficial and long term, primarily because motorized activity will no longer take place within close proximity of the historical nest site.
- **Carnelian Spotted Owl PAC/HRCA (PC103).** Currently there are 0.5 miles of existing trails within this PAC and 3.3 miles of existing trail within the associated HRCA. No trails will be decommissioned within this PAC; however, 0.4 miles of trails (18E28A) will be decommissioned within the HRCA. 0.5 miles of trail (19E00) will be repaired and/or reconstructed within this PAC, while 1.7 miles of trail (19E00) will be repaired and/or reconstructed within the HRCA. No trails will be classified as urban trails within the PAC; however, 0.8 miles of trails (18E32.4, 18E32.5, and 18E32.6) will be classified as urban trails within the HRCA. No trails will be converted to system trails within the PAC; however, 0.4 miles of trail (18E28A) will be converted to system trails within the HRCA. No new trail construction will occur within the PAC; however, construction of 0.4 miles of new multiple use trail (18E28A) will occur within the HRCA. This new construction will replace the decommissioned trail (18E28A) and move the trail further away from the PAC. The net effect of the proposed action within this PAC/HRCA is expected to be nominally beneficial and long term.
- **Mount Pluto Spotted Owl PAC/HRCA (PC 142).** Currently there are 0.7 miles of existing trails within this PAC and 1.5 miles of existing trail within the associated HRCA. . No trails will be decommissioned within this PAC or its HRCA. 0.7 miles of trail (19E00)

will be repaired and/or reconstructed within this PAC, while 0.9 miles of trail (19E00) will be repaired and/or reconstructed within the HRCA. No trails will be classified as urban trails within the PAC or the HRCA. No trails will be converted to system trails within the PAC; however, 0.6 miles of trail (18E28A) will be converted to system trails within the HRCA. No new construction will occur within this PAC or its associated HRCA. The proposed action is not expected to have a long term effect on this PAC/HRCA.

- **Burton Creek Spotted Owl PAC/HRCA (PC129).** Currently there are 2.5 miles of existing trails within this PAC and 3.4 miles of existing trail within the associated HRCA. Approximately 0.6 miles of trails (17E44.5) will be decommissioned within this PAC, while 0.2 miles of trails (17E44.5 and 19E00.2) will be decommissioned within the HRCA. Approximately 1.3 miles of trail (17E44 and 19E00) will be repaired and/or reconstructed within this PAC, while 2.6 miles of trail (17E44 and 19E00) will be repaired and/or reconstructed within the HRCA. No trails will be classified as urban trails within the PAC or the HRCA. Approximately 0.5 miles of nonsystem trails (17E44.4 and 17E12) will be converted to system trails within the PAC, while 0.6 miles of trails (17E44.4 and 17E12) will be converted to system trails within the HRCA. No new trail construction will occur within the PAC; however, construction of 0.3 miles of new multiple use trail (17E11) will occur within the HRCA. This is due to the fact that new trail 17E11 would be constructed within the northern edge of the HRCA. The decommissioning of 17E44.5 will remove seasonal disturbance from the current core of the spotted owl PAC. The net effect of the proposed action within this PAC/HRCA is expected to be moderately beneficial and long term.
- **Twin Crags Spotted Owl PAC/HRCA (PC086).** Currently there are no existing trails within this PAC and 1.3 miles of existing trail within the associated HRCA. No trails will be decommissioned within this PAC; however, 1.3 miles of trails (19E00) will be decommissioned within the HRCA. No trails will be repaired and/or reconstructed within the PAC or the HRCA. No trails will be classified as urban trails within the PAC or the HRCA. No trails will be converted to system trails within the PAC or the HRCA. Construction of 0.6 miles of new multiple use trail (19E00) will occur within the PAC, while 0.5 miles of new multiple use trail (19E00) will be constructed within the HRCA. This new construction will replace the decommissioned trail and will occur along the southwestern boundary of the PAC. It will not occur in the core of the PAC. Because new construction will occur within the PAC where no trails currently exist, there is a potential for adverse effects on spotted owls within the PAC. However, total trail mileage within the combined PAC/HRCA will be reduced by 0.2 miles, and because the new trail will be located at the margin of the PAC, potential effects associated with the trail would be minimized.
- **Painted Rock Spotted Owl PAC/HRCA (PC085) (Interim).** Currently there are 0.2 miles of existing trails within this PAC and 1.4 miles of existing trail within the associated HRCA. No trails will be decommissioned within this PAC; however, 0.2 miles of trails (19E00) will be decommissioned within the HRCA. Approximately 0.2 miles of trail (19E00) will be repaired and/or reconstructed within this PAC, while 1.2 miles of trail (19E00) will be repaired and/or reconstructed within the HRCA. No trails will be classified as urban trails within the PAC or the HRCA. No trails will be converted to system trails

within the PAC or the HRCA. No new trail construction will occur within the PAC; however, construction of 0.3 miles of new multiple use trail (19E00) will occur within the HRCA. Trail 19E00 will be moved from an area of low capability and chronic erosion problems to an area of higher capability The net effect of the proposed action within this PAC/HRCA is expected to be moderately beneficial and long term.

TABLE 3-3
LENGTH (MILES) OF TRAIL PROPOSED FOR TREATMENT UNDER THE PROPOSED ACTION WITHIN CALIFORNIA SPOTTED OWL PACS AND HRCAS.

California Spotted Owl PAC or HRCA[1]	Existing Total Trail Miles	Existing Motorized Use Trail Miles	Proposed						Change in Total Trail Miles[2]	Change in Motorized Use Trail Miles[3]
			NC	PD	PU	RC	UT	MT		
Griff Creek HRCA (PC128)	3.3	0.2	0.6	0.1	0.5	0.9	1.8	0.8	+0.5	+0.6
Griff Creek PAC (PC128)	3.4	2.8	0	1.4	0.1	1.9	0	1.5	-1.4	-1.3
Carnelian HRCA (PC103)	3.3	0	0.4	0.4	0.4	1.7	0.8	0	0	0
Carnelian PAC (PC103)	0.5	0	0	0	0	0.5	0	0	0	0
Mount Pluto HRCA (PC142)	1.5	0	0	0	0.6	0.9	0	0	0	0
Mount Pluto PAC (PC142)	0.7	0	0	0	0	0.7	0	0	0	0
Burton Creek HRCA (PC129)	3.4	0	0.3	0.2	0.6	2.6	0	0	0.1	0
Burton Creek PAC (PC129)	2.5	0	0	0.6	0.5	1.3	0	0	-0.6	0
Twin Crags HRCA (PC086)	1.3	0	0.5	1.3	0	0	0	0	-0.8	0
Twin Crags PAC (PC086)	0	0	0.6	0	0	0	0	0	+0.6	0
Painted Rock HRCA (PC085)	1.4	0	0.3	0.2	0	1.2	0	0	0.1	0
Painted Rock PAC (PC085)	0.2	0	0	0	0	0.2	0	0	0	0
Total	21.5	3.0	2.7	4.2	2.7	11.9	2.6	2.3	-1.5	-0.7

NOTES: 1. Lengths provided for PACs only are for activities that occur inside the PAC perimeter. Lengths provided for HRCAs only are for activities that occur outside of a PAC but within its associated HRCA.
2. Change in Total Trail Miles = NC – PD
3. Change in Motorized Use Trail Miles = MT – Existing Motorized Use Trail Miles

Key:
PAC- Protected Activity Center
HRCA- Home Range Core Area
PU- Planned Upgrade
PD- Planned Decommission
RC- Reconstruct/Repair
NC- New Construction
UT- Urban Trail
MT- Motorized Trail

There are five northern goshawk PACs and 20 historical nest sites in the action area. Some project activities will occur in or near some of these PACs. All five PACs occur within 0.25 mile of a proposed project activity. Three of these PAC/HRCAs overlap with two California spotted owl PACs and HRCAs. In addition, the CNDDB documents two occurrences within the action area. The first, occurrence # 304, is a nest site within an open Sierran mixed conifer stand located east of Martis Peak and west of the Nevada state line. It was last known to be active in 1992 and has been surveyed from 1992–1999. Project related activities near this occurrence include trail repair and/or reconstruction (19E00) and trail decommissioning (18E24.6A, 18E12.1, and 19E00.1) The second, occurrence # 427, consists of a nest site within Sierran mixed conifer forest 0.10 mile east of the tributary to Burton Creek in Burton Creek State Park. The nest was active in 2004 and 2005. No project related activities will occur near this nest site. **Table 3-4** summarizes the length and type of trail proposed for treatment within each northern goshawk PAC.

- **Griff Creek Northern Goshawk PAC 04.** Currently there are 1.8 miles of existing trails within this PAC. 1.0 miles of trail (18E18E, 18E18A, and 18E18F) will be decommissioned within this PAC. 0.8 miles of trails (18E18B, 18E18, and 18E18C) will be repaired and/or reconstructed. No trails will be classified as urban trails or converted to system trails within the PAC. No new construction will occur within this PAC. There will be a slight, beneficial effect to northern goshawk through decommissioning trails within this PAC.
- **Martis Peak Northern Goshawk PAC 06.** Currently there are 1.5 miles of existing trails within this PAC. Approximately 0.9 miles of trail (18E24.6A and 18E12.1) will be decommissioned within this PAC. 0.6 miles of trails (19E00) will be repaired and/or reconstructed. No trails will be classified as urban trails or converted to system trails within the PAC. Goshawk detections and the historical nest site are closer in proximity to trails proposed for decommission than to trails proposed for construction. Therefore, there will be a slight, beneficial effect to northern goshawk through decommissioning trails within this PAC.
- **Watson Creek Northern Goshawk PAC 14.** There are no existing trails within this PAC and no project actions are planned for the PAC. The proposed action will move trail 17E09 slightly closer (approximately 150 feet) to the PAC than the current trail alignment, but the riparian corridor in that area will be modestly improved through decommissioning of trails within it. There may be very limited negative effects to northern goshawk due to trail actions adjacent to the PAC. However, the proposed action would benefit suitable foraging habitat within the nearby SEZ.
- **Burton Creek Northern Goshawk PAC 16.** Currently there are 0.4 miles of existing trails within this PAC. No trails will be decommissioned within this PAC. Approximately 0.2 miles of trails (17E44) will be repaired and/or reconstructed. No trails will be classified as urban trails within the PAC. Approximately 0.2 miles of nonsystem trails (17E44.4) will be converted to system trails. No new construction will occur within this PAC. The proposed action will be slightly beneficial to northern goshawks through trail maintenance within the core of this PAC.

- **First Creek Northern Goshawk PAC 20.** There are no existing trails within this PAC and no project actions are planned for the PAC. Trail decommissioning is planned approximately 0.25 miles from this PAC and may have a very limited beneficial effect for northern goshawk.

TABLE 3-4
LENGTH (MILES) OF TRAIL PROPOSED FOR TREATMENT UNDER THE PROPOSED ACTION WITHIN NORTHERN GOSHAWK PACS.

Northern Goshawk PAC[1]	Existing Total Trail Miles	Existing Motorized Use Trail Miles	Proposed						Change in Total Trail Miles[2]	Change in Motorized Use Trail Miles[3]
			NC	PD	PU	RC	UT	MT		
Griff Creek PAC (PAC 04)	1.8	1.8	0	1.0	0	0.8	0	0.8	-1.0	-1.0
Martis Peak PAC (PAC 06)	1.5	0.7	0	0.9	0	0.6	0	0	-0.9	-0.7
Watson Creek PAC (PAC 14)	0	0	0	0	0	0	0	0	0	0
Burton Creek PAC (PAC 16)	0.4	0	0	0	0.2	0.2	0	0	0	0
First Creek PAC (PAC 16)	0	0	0	0	0	0	0	0	0	0
Total	3.7	2.5	0	1.9	0.2	1.6	0	0.8	-1.9	-1.7

NOTES: 1. Lengths provided for PACs only are for activities that occur inside the PAC perimeter.
2. Change in Miles Impacted = NC – PD
3. Change in Motorized Use Trail Miles = MT – Existing Motorized Use Trail Miles

Key:
PAC- Protected Activity Center
HRCA- Home Range Core Area
PU- Planned Upgrade
PD- Planned Decommission
RC- Reconstruct/Repair
NC- New Construction
UT- Urban Trail
MT- Motorized Trail

Other ecologically important areas that occur within the action area are discussed below.

- *Summer and critical fawning habitat for the Loyalton-Truckee mule deer herd.* A total of 789 acres of designated critical fawning habitat is mapped in the action area just north of Watson Lake in the vicinity of Mt. Pluto and Northstar-at-Tahoe Ski Resort. Currently there are 0.67 acres of existing trails within critical fawning habitat. No trails will be decommissioned, classified as urban trails, or newly constructed. Approximately 0.43 acres of trails will be repaired and/or reconstructed within critical fawning habitat, while 0.24 acres of nonsystem trails will be converted to system trails. Therefore, there will be no change in the acres of impacted critical fawning habitat within the action area.

The most likely indirect effect of the proposed action on mule deer is a shift in local habitat use and distribution of individuals in response to trail construction/reroutes, decommissioning, and changes in use designation in specific locations. Mule deer could abandon or avoid foraging areas where trails are constructed, particularly motorized trails, if these trails sustain substantial use. However, mule deer could also use these trails as travel corridors if they do not sustain substantial use by humans. The new trail system will support less motorized access. In areas where trails are decommissioned, or motorized use is eliminated, habitat suitability for and probability of occupancy by mule deer would increase. Overall, a reduction of total trail coverage within the action area could benefit mule deer by reducing human disturbance

- *Designated willow flycatcher habitat.* Under the proposed action, some trail decommissioning, trail upgrades, and urban trail designations will occur within and adjacent to some habitat mapped as suitable (by LTBMU) for willow flycatcher; no new trail construction will occur within or adjacent to mapped suitable habitat. If trail decommissioning and upgrades occur near willow flycatcher territories, individuals could experience temporary disturbances during project implementation; and breeding productivity could be adversely affected. However, pre-project surveys will be conducted within potential habitat to determine presence or absence and breeding status of willow flycatchers at these locations. If willow flycatchers are detected, an LOP between June 1 and August 31 will be imposed. Because LOPs would be established in these areas, project activities within these areas would occur outside of the nesting seasons and not adversely affect nesting attempts.

  The proposed action is not likely to substantially disturb or cause a loss of suitable habitat for willow flycatcher. Although project activities within SEZs could temporarily disturb some suitable habitat, the proposed action is designed to avoid or minimize potential adverse effects on riparian habitats in the action area and prevent a net loss of riparian habitat. Particularly, implementing measures SOIL-4 (minimize ground and vegetation disturbance), SOIL-5 (mulch and revegetate disturbed areas), SEZ-2 (control sediment and revegetate within SEZs), and SEZ-8 (limit staging of materials and equipment) are expected to maintain native riparian habitat composition, structure, and function. Moreover, the proposed action would benefit willow flycatcher in the long-term by reducing 0.8 miles of trail within SEZs (i.e., reducing trail coverage in SEZs by 42% for this transportationshed). Fewer total miles of trail within SEZs, combined with a higher proportion of trail brought into the National Forest system, is expected to benefit aquatic and riparian habitats.

- *Six known osprey nest trees*. There are six known osprey nest trees within the action area, although one tree fell in recent years and the top of another nest tree fell during winter 2005. This conspicuous species has not been detected incidentally during recent surveys for other species in the project area. Nesting ospreys are highly vocal and visible when disturbed. Suitable foraging habitat occurs in the action area. If ospreys are found nesting in the project area before or during project activities, an LOP within 0.25 mile of the nest site will be implemented immediately, effective between March 1 and August 15. Also, because no large trees or snags will be removed, potential nesting opportunities for osprey will not be reduced.

- *Two Golden Eagle TRPA threshold sites*. Suitable nesting habitat for golden eagle occurs within the action area near Mount Pluto and Martis Peak. These are TRPA threshold sites. Golden eagles probably forage in the action area. However, this species is mobile and able to avoid temporary disturbances to foraging habitat. The proposed action is not expected to affect golden eagle prey availability.

Park Lands and Prime Farmlands

There are no park lands or prime farmlands within the action area. The action area borders Burton Creek State Park.

4) The Degree of Controversy over Environmental Effects

There is obvious controversy over the impacts of the various user groups. The literature suggests that the total impacts of hikers and mountain bikes are very similar; however, they differ across different indices (see discussion of erosion impacts earlier in this section).

Extensive public involvement efforts (see *Public Involvement* above) have been conducted to help resolve significant controversies regarding the environmental effects of the proposed action.

5) The Degree to which the Possible Effects on the Human Environment are Highly Uncertain or Involve Unique or Unknown Risks

The proposed action does not involve effects on the human environment that are highly uncertain or that involve unique or unknown risks. The introduction outlines the proposed action's history of planning and public involvement, through which key issues have been identified.

The actions of trail upgrades, new trail construction, trail decommissioning, and trail maintenance have well-known and documented effects; there are no unknown risks from these actions.

6) The Degree to which the Action may Establish a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration

The proposed action would not establish a precedent for future actions with significant effects, nor would it represent a decision in principle about a future consideration. The LTBMU is implementing the ATM for Forest Service trails in nine different action areas in the Basin. A separate EA will be conducted for each project area. Each EA process will include sending a scoping letter to interested or affected agencies and individuals in order to identify issues and concerns associated with the proposed action. As necessary, the Forest Service will meet with agencies and members of the public during the scoping process. Each EA will provide an independent assessment of potential effects on the human environment associated with the proposed action.

7) Whether the Action is Related to other Actions with Individually Insignificant but Cumulatively Significant Impacts

Cumulative impacts are defined in 40 CFR Sec. 1508.7 as the impacts:

> *"on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."*

Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into smaller component parts. The purpose of the ATM is to reduce watershed disturbances and improve water quality in the Basin while improving habitat for sensitive species. The LTBMU will implement the ATM in nine different project areas within the Basin. The proposed action assessed in this EA is the implementation of the ATM on one of the nine project areas. Implementation of the proposed action is a component of the larger action of implementing the entire ATM. Implementation of the proposed action, when taken together with implementation of the entire ATM and other reasonably foreseeable actions within the Basin, is not expected to result in any adverse cumulative effects; rather, it is expected to result in overall beneficial cumulative effects on the environment through addressing existing environmental impacts.

The cumulative effects of the proposed action are based on the direct and indirect effects of the project when considered in combination with the effects of past, present, and reasonable foreseeable actions in the action area and vicinity. Relevant past actions include historic logging, livestock grazing, fire suppression, and urban development in the action area and vicinity which have changed the landscape substantially. Over the past 150 years, development and other human activities have encroached upon and removed biological resources throughout the action area, including coniferous forests, riparian woodlands and SEZs, and wetlands and other aquatic habitat. Approximately two-thirds of the Basin's forest was cut between 1860 and 1930. By 1898, the last of the Comstock-era mills had closed because of lack of available lumber. However, forest regeneration after 1930 has resulted in a landscape pattern where second growth and remnant old growth stands combine to provide ideal habitat for many species, including California spotted owl, northern goshawk, and American marten. Cattle and sheep also grazed in the Lake Tahoe Basin extensively for the 40 years following the Comstock era. There were 13 dairies that used most meadows in the Basin for forage. In the mid-1980s, a drought stressed the forested stands and the LTBMU estimated that 300 million board feet of timber were standing dead or dying in the Basin.

Urban development has resulted in the permanent loss of habitats, in particular SEZs and wetlands. Between 1960 and 1980, the Basin's population grew fivefold, and the number of houses increased from 500 to 19,000. By 1970, 49,000 subdivided lots were created, and hundreds of miles of roads were built. As the Basin became more populated, fire suppression efforts increased. This allowed vegetation biomass accumulation over time, threatening more severe fires when they occurred. By 1990, recreation in the area developed into a $1 billion

economy employing more than 20,000 people. More than 200,000 tourists visit the Basin on peak holidays, and visitor days are estimated to exceed 23 million annually (Sierra Nevada Ecosystem Project 1996). Recreation use in the action area is intensive and consistent year-round. The action area is popular for mountain biking, hiking, camping, equestrian use, OHV use, snowmobile use, and cross-country and backcountry skiing.

Past road decommissioning, upgrade, and conversion projects in the area have led to increases in recreational access and opportunities, improvements in forest health, and benefits to water quality. The surfacing (chip seal) of Road 73 improved access to recreational opportunities but also resulted in an increase in vehicular traffic along the road. Previous road decommissioning and conversion projects have benefited biological resources and water quality by reducing the total coverage of roads in the area. Road to trail conversions have improved recreational opportunities by reducing user conflicts through trail use segregation.

Several site specific projects are planned in the action area at this time. The Lake Forest Area A Erosion Control project is being implemented in the Dollar Point and Upper Highlands area of the Tahoe Basin. This project consists of storm water quality improvements, including sediment source control, hydrologic control, and treatment of storm water, as well as restoration of meadow systems and two streams, Lake Forest Creek and Polaris Creek. This project is expected to have long-term beneficial effects to water quality and biological resources. The North Shore PUD bike path is planned from Tahoe Vista to Dollar Point. It would be approximately 9 miles long with roughly a half a mile on LTBMU lands. Within the urban interface, it has the potential to increase use and cause increased user created trails in the area. Though no other site specific projects are planned in the action area at this time, expected future activities in the action area and vicinity include fuel reduction projects (e.g., prescribed burning, vegetation and biomass removal), increased recreation levels (e.g., hiking, biking, cross-country ski trails), and restoration projects. These activities could potentially magnify both positive and negative localized direct and indirect effects in the short term, but are not expected to have an adverse cumulative effect in the long term because each project will have a primary objective of either minimizing or mitigating existing impacts.

Cumulative Watershed Effects

The proposed action is part of a series of trail upgrade and decommissioning projects designed to improve water quality in the Basin. As discussed previously, the long-term effect of these actions is expected to improve water quality within the Basin. Each of these projects may cause a slight short-term increase in sediment production in the Basin as a result of activities associated with trail construction, upgrades, and decommissioning. However, because these projects are in separate watersheds, implemented during separate years, and because design measures and BMPs are incorporated to avoid or minimize construction-related effects, the cumulative short-term effects would be less than significant.

The LTBMU determined that a traditional approach to Cumulative Watershed Effects (CWE) analysis does not accurately represent beneficial and negative impacts to watershed resources. Additionally, the proposed action would result in long-term net benefits to watershed resources.

Additionally, trail contributions to the equivalent roaded area (ERA) methodology used in the CWE calculations would be negligible and does not reflect the increased sediment influx to streams associated with poorly located, misused, or poorly maintained trails. Similarly, the CWE/ERA values do not capture the benefits of trail improvements reflected in trail projects such as this one. Implementation of all the proposed Forest Service trail upgrades and decommissioning projects will provide long-term cumulative water quality benefits to Forest Service–managed watersheds by reducing sediment delivery to stream channels and transport to Lake Tahoe. Cumulative reductions in erosion and sediment delivery will contribute to the long-term goal of reducing nutrients discharged to the lake. More detailed consideration of the cumulative watershed effects is presented below.

The geographic boundary of this cumulative effects evaluation is the watersheds within which the upgraded and new trail systems occur. This analysis boundary (the North Shore transportationshed) is chosen to encompass the area where other past, present, or reasonably foreseeable actions could work in concert with the proposed project to affect stream and Lake water quality. The cumulative effects evaluation area includes the following watersheds: Tahoe State Park, Burton Creek, Barton Creek, Lake Forest Creek, Dollar Creek, Cedar Flats, Watson Creek, Carnelian Bay, Carnelian Canyon, Tahoe Vista, Griff Creek, Kings Beach, and East Stateline Point.

The relevant past, present, and foreseeable actions are described in the introduction to this section. The Comstock-era activities and activities through 1930 caused disturbances that introduced a substantial amount of sediment and nutrients into the Lake, which in turn affected water quality. In the project area, these effects had been reduced as vegetation density steadily increased on National Forest System lands after 1930. A CWE calculation was prepared for the analysis area in 1996 (Lake Tahoe Basin Management Unit and Tahoe Regional Planning Agency 1996). That analysis showed that of the 13 watersheds in the analysis area, all were below the CWE threshold of concern (TOC) except for Kings Beach and East Stateline Point. The most conservative projections of CWE through 2005 similarly showed that only these two watersheds would be above the TOC. The high CWE value for these two watersheds was due primarily to the level of housing and related development on private land that is adjacent to, rather than conditions on, National Forest System lands.

In addition to the CWE indicator, other factors associated with housing, wastewater, and developments related to population growth and recreation use in these watersheds has had an effect on Lake Tahoe water quality, as reflected in the reduction of water clarity (Coats 2004; Reuter and Miller 2000). In the project area, Tahoe City, Lake Forest, Carnelian Bay, Tahoe Vista, Kings Beach, and Crystal Bay all lie downstream of the National Forest System lands, and their development and growth has affected stream and Lake water quality. Such development introduces nutrients and sediment to the streams and Lake through a range of processes (Coats 2004; Reuter and Miller 2000). Federal, state and local governments and agencies have responded to this water quality reduction with a variety of programs. Early initiatives included sewage treatment and its export outside the basin (Coats 2004). Many subsequent and current programs, initiatives, and projects seek to reduce sediment along with associated nutrients into the Lake. These initiatives and projects include the ATM (of which the proposed action is a component),

watershed restoration, fuels treatments to reduce the risk of catastrophic wildfire, acquisition of environmentally sensitive lands, building restrictions, best management practices for erosion and stormwater control in developed areas, and the on-going development of a Total Maximum Daily Load (TMDL) of storm water pollutants for the Basin. Individually and cumulatively these activities are reducing sediment and nutrient loads to streams and the Lake within the transportationshed.

As noted above, the standard Forest Service CWE calculation does not address the effects associated with recreational trails or their upgrading. Consequently, Breibart (2005) evaluated the soil erosion and sediment delivery contribution and potential improvements associated with the North Shore Trail ATM project. Five high-risk trail segments were examined in the field. Observations and measurements on the trail and landscape characteristics were then used in the Watershed Erosion Prediction Project (WEPP) computer program (Breibart 2005). This program outputs the amount of sediment eroded based on the local site parameters. The program, however, is considered to work best as a comparative tool between different designs rather than as an absolute predictor of the amount of erosion that will occur (Breibart 2005). The WEPP model provides relevant information to evaluate CWE impacts for the North Shore Trail ATM.

The field observations combined with the WEPP analysis indicate that some existing trail segments experience substantial soil erosion but do not deliver that sediment to the stream system. Other existing trail segments experience substantial erosion and do deliver sediment to the stream system. The analysis also evaluated the effects of various design criteria on the quantity of soil erosion. It conclusively showed that the range of designs and BMPs included in North Shore Trail ATM project would be effective in substantially reducing both soil erosion and sediment delivery to streams. The proposed action, which proposes to use some of the same BMP's used in the WEPP analysis, would therefore contribute to an improvement to water quality in the transportationshed streams (and therefore in Lake Tahoe). These positive effects would begin as vegetation within decommissioned trail segments becomes established and begins to mature. The cumulative impact of the proposed project, in combination with the other projects and programs to reduce adverse effects on water quality in the transportationshed, would be to improve stream and Lake water quality over the near and long-term.

Cumulative Vegetation, Wildlife, and Fisheries Effects

Although the primary purpose of the proposed action is to improve Lake Tahoe's water clarity and quality and to protect soil resources while still providing safe and enjoyable recreation access to the National Forest, the proposed action, when taken together with implementation of the entire ATM, is also designed to avoid or minimize potential adverse effects on biological resources. The long-term cumulative effects of the proposed action on wildlife and fisheries are expected to be beneficial, and include a net increase in foraging and breeding habitat quantity and quality for several species, less trail coverage in sensitive habitats, and reduced erosion and sedimentation in aquatic habitats.

The cumulative context for the evaluation of potential cumulative effects on vegetation, wildlife, and fisheries is the action area (the North Shore transportationshed). This analysis boundary is chosen to encompass the area where other past, present, or reasonably foreseeable actions could work in concert with the proposed project to affect biological resources.

The relevant past, present, and foreseeable actions are described in the introduction to this section. Over the past 150 years, development and other human activities have encroached upon and removed biological resources throughout the action area, including coniferous forests, riparian woodlands and SEZs, and wetlands and other aquatic habitat. Urban development has resulted in the permanent loss of habitats, in particular SEZs and wetlands. The Comstock-era logging activities removed a significant percentage of the coniferous forests in the action area. However, forest regeneration after 1930 has resulted in a landscape pattern where second growth and remnant old growth stands combine to provide ideal habitat for many species, including California spotted owl, northern goshawk, and American marten. Future projects and activities in the action area are expected to benefit habitats and biological resources both cumulatively and in the long term, although short term localized impacts may occur. These include forest fuel reduction projects which will improve the health of forest ecosystems; maintenance activities on the trail system; and various restoration projects designed to improve or replace wildlife habitat.

As discussed in detail in the BE/BA, although the proposed action could temporarily disturb certain wildlife species' foraging and breeding habitats, these short-term effects would likely be offset by the long-term benefits to wildlife habitat associated with the improved trail system. While the proposed project may affect California spotted owl, northern goshawk, and American marten individuals locally, the magnitude and intensity of potential adverse effects in some locations are not expected to substantially affect the regional populations. Also, the total amount of mature forest habitat suitable for California spotted owl, northern goshawk, and American marten in the action area is expected to increase as a result of less motorized and nonmotorized trail coverage in PACs and HRCAs overall; this increase will benefit these species. Therefore, the proposed action is not expected to result in significant adverse cumulative effects on these species.

As discussed in the BE/BA, a net reduction of trail coverage within designated sensitive habitat, including PACs, HRCAs, and SEZs, collectively, will occur with implementation of the proposed action. The proposed action will also provide a net reduction in the amount of acres impacted in the Sierran mixed conifer, lodgepole pine, subalpine conifer, montane riparian, montane chaparral, and annual grassland habitat types. This will benefit those species that utilize these habitat types by shifting recreational use from high capability habitat to low capability habitat.

Trail decommissioning and upgrades are expected to improve terrestrial wildlife habitat; these improvements are expected to offset short-term adverse effects (e.g., temporary construction-related disturbances) associated with decommissioning and upgrades described above. Disturbances to habitat along these trails as a result of mechanized, motorized, or pedestrian use would be reduced; and, vegetation communities are expected to benefit from plant establishment and succession on decommissioned trails in the action area.

The long-term cumulative effects of the proposed action is expected to be beneficial to vegetation resources, and include a net increase in vegetation cover, including cover within sensitive habitat resources such as SEZs, and a reduction of off-route travel and disturbance by pedestrian and mechanized users.

Cumulative Recreation Effects

The proposed action is the second of a series of nine ATMs to improve the trails within the Basin. Although the primary purpose is to reduce trail impacts on SEZs and water quality, a secondary concern is providing a cohesive trail system for enhanced recreation in the Basin.

The cumulative context for the evaluation of potential cumulative effects on recreation resources is the action area (the North Shore transportationshed). This analysis boundary is chosen to encompass the area where other past, present, or reasonably foreseeable actions could work in concert with the proposed project to affect recreation resources.

There will be a cumulative beneficial impact on recreation resources. The proposed action is designed to reduce the impacts of the expected increases in recreational demands within the Basin. Although individual user groups may lose access to specific trails or areas, and may experience an overall net reduction in trail mileage available to them, the proposed project, and the ATM as a whole, is expected to benefit recreation resources through a more logical trail system, characterized by increased safety and improved maintenance. These changes would focus motorized use in a single area and reduce or eliminate user conflicts associated with motorized user groups and allow for connections to the road system. Additionally, the proposal would interconnect the trail system to create more loop opportunities and connections to the Tahoe Rim Trail. A spectrum of opportunities would be provided through optional alignments and interconnected trails. Finally, both the Martis Peak Vista Trail and the Stateline Lookout Trail will provide universal access recreational opportunities for handi-capable users

Cumulative Air Quality Effects

The cumulative context for the evaluation of potential cumulative effects on air quality is the Lake Tahoe Basin. This analysis boundary is chosen to encompass the area where other past, present, or reasonably foreseeable actions could work in concert with the proposed project to affect air quality.

Adverse impacts on air quality are limited to the construction activities during implementation of the proposed action, and are short-term and temporary. The proposed action may result in temporary increases in ozone precursors and PM10 due to activities associated with trail construction, upgrades, and decommissioning. These impacts will be reduced by implementation of Measures AIR-1 through AIR-4. The short duration of these impacts constrains the likelihood of cumulative impacts. Prescribed burning, one of the major sources of air emissions in the Lake Tahoe Air Basin, would be unlikely to coincide with construction activities associated with the proposed action. The proposed action would be conducted in mid- to late summer after the soil dries out sufficiently, while controlled burns would be conducted during the fall after soil moisture increases from early rains. The proposed action would not contribute to adverse cumulative air quality effects within the Lake Tahoe Air Basin.

8) The Degree to which the Action may Adversely Affect Districts, Sites, Highways, Structures, or Objects Listed in or Eligible for Listing in the National Register of Historic Places or may Cause Loss or Destruction of Significant Scientific, Cultural, or Historical Resources

The heritage analysis is incorporated by reference. This analysis is a part of the project record and is available for review at the LTBMU Supervisor's Office. The action alternative is designed through avoidance or minimization measures to reduce effects on eligible sites to a less-than-significant level.

There are 56 identified heritage resources within 25 meters of existing trails. Additionally, two heritage resources are located within 25 meters of proposed reroutes.

All previously unsurveyed areas that could be affected by the proposed action were surveyed for heritage resources. By far the vast majority of the proposed North Shore Trail ATM trail actions had been previously surveyed. As such it was only necessary to inventory relatively small, disjointed sections of trail and road prisms within the larger project area. All resources located as a result of the survey were formally recorded. All resources adjacent to the project area will be flagged and avoided according to the Standard Resource Protection Measures in the Forest Service's Programmatic Agreement (PA) for Compliance with Section 106 of the National Historic Preservation Act for Undertakings in the Pacific Southwest Region. In addition, for known heritage resource sites, the proposed action will implement site-specific heritage treatment recommendations as outlined in the Heritage Resources Inventory Report for the North Shore Trail ATM. Previously and newly identified heritage resources will be monitored to see if they are being affected by existing trails or could potentially be affected by the proposed action.

No further cultural resources investigations are warranted unless buried archaeological remains are found during construction or other activities, or unless the project design is altered. Should any artifacts or an unusual amount of bone, shell, or nonnative stone be uncovered during construction or other ground-disturbing activities, a professionally qualified archaeologist should be consulted immediately for evaluation of the find.

9) The Degree to which the Action may Adversely Affect an Endangered or Threatened Species or its Habitat that has been Determined to be Critical Under the Endangered Species Act (ESA) of 1973

The potential for the proposed action to adversely affect a federally listed species, a species designated as a candidate for federal listing, or designated or proposed critical habitat were analyzed in the BE/BA; that assessment is hereby incorporated by reference. There is no proposed or designated critical habitat in or near the action area; therefore, critical habitat will not be affected.

Lahontan cutthroat trout (*Onchorhynchus clarki henshawi*) is listed as threatened under the ESA and designated as a special-interest species by TRPA. No current occurrences of Lahontan cutthroat trout are documented in the North Shore action area. Streams and lakes within the action area were historically suitable for and/or occupied by this species. However, because exotic fish species currently inhabit these streams and lakes within the action area, and efforts to remove or control exotic fish in these areas have not been implemented, these habitats are considered unsuitable for Lahontan cutthroat trout. The Truckee River is located just outside the southern boundary of the North Shore transportationshed. However, project-related activities will not impact this waterbody. Based on the analysis in the BE/BA, the proposed action will not affect Lahonton cutthroat trout or its habitat. Please refer to the BE/BA for a detailed analysis of potential effects of the proposed action on this species.

Bald eagle (*Haliaeetus leucocephalus*) is listed by USFWS as threatened under the ESA. It has been proposed for delisting but, to date, the bald eagle remains listed as threatened. Wintering and breeding bald eagles are not known to occur in the action area. Project activities will not occur near known nest sites, wintering habitat, or suitable roosting and foraging habitat. Based on the analysis in the BE/BA, the proposed action will not affect bald eagle or its habitat Please refer to the BE/BA for a detailed analysis of potential effects of the proposed action on this species.

Mountain yellow-legged frog (*Rana mucosa*) is designated as a candidate for listing under the ESA. Mountain yellow-legged frog is not known to occur in the action area. Although project activities within SEZs could temporarily disturb some aquatic and riparian habitat, the proposed action is designed to avoid or minimize potential adverse effects on riparian habitats in the action area and increase riparian habitat quantity and quality. Based on the analysis in the BE/BA, the proposed action will not affect mountain yellow-legged frog or its habitat, nor is it likely to result in a trend toward federal listing or loss of viability of this species. The proposed action is expected to benefit mountain yellow-legged frog by improving the quality of riparian and aquatic habitat. Please refer to the BE/BA for a detailed analysis of potential effects of the proposed action on this species.

Slender moonwort (*Botrychium lineare*) is designated as a candidate for listing under the ESA. Slender moonwort is not known to occur in the action area, although suitable habitat exists for this species in riparian areas/SEZs, wet meadows, the margins of streams and lakes, and other wetland habitats. Although project activities within SEZs could temporarily disturb some aquatic and riparian habitat, the proposed action is designed to avoid or minimize potential adverse effects on riparian habitats in the action area and increase riparian habitat quantity and quality. Based on the analysis in the BE/BA, the proposed action may affect but not likely to adversely affect slender moonwort and its habitat, nor is it likely to result in a trend toward federal listing or loss of viability of this species. The proposed action is expected to benefit slender moonwort by improving the quality of riparian and aquatic habitat. Please refer to the BE/BA for a detailed analysis of potential effects of the proposed action on this species.

10) Whether the Action Threatens a Violation of Federal, State, or Local Law or Requirements Imposed for the Protection of the Environment

The proposed action would not threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment. With the very limited exceptions discussed below, the proposed action is consistent with the Forest Plan, the National Forest Management Act, TRPA ordinances, RWQCB and air pollution control district regulations, and other applicable local codes and ordinances.

Creating new motorized access within the Griff Creek California spotted owl PAC may not be consistent with the conservation strategy and the management standards and guidelines for California spotted owl established in the Sierra Nevada Forest Plan Amendment record of decision (ROD). The intent of the standards and guidelines includes avoiding disturbances to nesting activities. Under the ROD, LOPs are not generally required for road and trail maintenance and use, except where proposed activities are likely to result in nest disturbance. Therefore, although implementing an LOP is not usually a feasible avoidance measure for long-term road/trail use, the intent of the standards and guidelines for these species includes avoiding nesting disturbances to these species from road use. Nesting has not been documented within this PAC; therefore, effects of the proposed action on nesting activities are not known.

Analysis of project effects on management indicator species (MIS) habitat is required as part of the NEPA process for implementation of LRMPs. Wildlife MIS identified in the LTBMU LRMP are bald eagle, American peregrine falcon, northern goshawk, California spotted owl, willow flycatcher, blue grouse, mallard, pileated woodpecker, mule deer, black bear, Lahontan cutthroat trout, rainbow trout, and brook trout. These species are known to occur or potentially occur in the project area. Effects of the proposed action on fish and wildlife (including MIS) habitats in general are discussed in the analysis of Significance Factor 1 (above). Potential direct, indirect, and cumulative effects on each MIS are addressed in Appendix A of the BE/BA. Based on that analysis, the proposed action is not likely to adversely affect or result in a loss of viability for any MIS.

3.3 Environmental Consequences of the Proposed Action Relative to Environmental Thresholds

This section assesses the proposed action alternative for consistency with the Environmental Threshold Carrying Capacities for the Lake Tahoe Region that have been adopted by TRPA and that are contained in Appendix E of the Land and Resource Management Plan (USDA Forest Service 1988).

Water Quality. The proposed action is consistent with the Environmental Threshold Carrying Capacities for water quality. The Forest Plan established numerical standards for reducing the annual input of nitrogen to Lake Tahoe from all sources by 25 percent and for decreasing inputs of sediment, phosphorus, iron, and other nutrients necessary for aquatic algae growth to the shallow nearshore areas of the lake. Numerical standards were also established for reducing these constituents in surface runoff and tributary inflows to the lake. Nitrogen and phosphorus are the

principal constituents of concern in water quality problems associated with declining water clarity in Lake Tahoe. The proposed action will result in long-term reductions in the quantity of eroded soil and sediment transported to the lake. Eroded soil can contain nitrogen compounds and is a significant source of phosphorus and iron.

Soil Conservation. The proposed action is consistent with the Environmental Threshold Carrying Capacities for soil conservation. The Forest Plan established numerical standards for restoring the natural functioning of 25 percent of the existing disturbed, developed, or subdivided SEZs and attaining a 5 percent total increase in the area of naturally functioning SEZs. One purpose of the proposed action is to restore disturbed trail segments and the SEZs through which they pass.

Air Quality. The proposed action is consistent with the Environmental Threshold Carrying Capacities for air quality. These thresholds consist of numerical and management standards for ozone, carbon monoxide, visibility, and nitrate deposition. The proposed action may result in temporary increases in ozone precursors and PM10 due to activities associated with trail construction, upgrades, and decommissioning. These short-term construction-related effects are minor and are considered to be individually and cumulatively less-than-significant impacts.

Vegetation Preservation. The proposed action is consistent with the Environmental Threshold Carrying Capacities for vegetation preservation. Implementation of the proposed action would not conflict with the numerical and management standards established to maintain common vegetation, uncommon plant communities, and sensitive plant species. Short-term potential adverse effects on sensitive plant species associated with construction activities will be minimized. Although the proposed action may result in minor effects on overall vegetative composition, it would result in long-term benefits from decreased disturbance to trailside vegetation associated with current trail use.

Wildlife. The proposed action is consistent with the Environmental Threshold Carrying Capacities for Wildlife. Implementation of the proposed action would not conflict with the numerical and management standards established to maintain Special Interest Species and Habitats of Special Significance. Short-term potential adverse effects on northern goshawk associated with construction activities will be minimized. The proposed project is expected to result in long-term benefits from decreased disturbance within habitat suitable for northern goshawk.

Fisheries. The proposed action is consistent with the Environmental Threshold Carrying Capacities for fisheries. Implementation of the proposed action would not conflict with numerical and management standards established to maintain stream and lake habitat, instream flows, and Lahontan cutthroat trout populations. Short-term potential adverse effects on fisheries associated with construction activities will be avoided or minimized. The proposed action would result in long-term improvements to fish habitat as a result of reduced erosion and associated runoff of contaminants and sediment.

Noise. The proposed action is consistent with the Environmental Threshold Carrying Capacities for noise. Noise is likely to be unchanged as a result of the proposed action. An improved and more logical trail system my increase recreation use over time; however, this effect is likely to be consistent with the overall increase in recreation projected within the Basin over time.

Recreation. The proposed action is consistent with the Environmental Threshold Carrying Capacities for recreation. The proposed action does not interfere with the TRPA regional plan policy to ensure that a "fair share" of the total Basin capacity is available to the general public for outdoor recreation. As described above, the proposed action does not create significant adverse effects on motorized and nonmotorized recreational uses. Also, the proposed action is consistent with the TRPA regional plan policy to preserve and enhance the high-quality recreational experience, including preservation of high-quality undeveloped shore zone and other natural areas. Implementation of the proposed action ultimately enhances the overall recreational experience in the Basin by improving and maintaining a system of trails, while improving the water quality of the lake and associated recreational and scenic values.

Scenic Resources. The proposed action is consistent with the Environmental Threshold Carrying Capacities for scenic resources. The proposed action will not adversely affect visual resources in the Basin.

Built Environment. The proposed action does not involve the building of structures and does not affect and is not affected by the Environmental Threshold Carrying Capacities for the built environment.

SECTION 4
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Appendix A
Scoping Summary Report

ESA

NORTH SHORE AREA ACCESS AND TRAVEL MANAGEMENT PLAN EA

Scoping Summary Report

Introduction

The U.S. Department of Agriculture (USDA) Forest Service/Lake Tahoe Basin Management Unit (LTBMU) sought input regarding a proposal to implement an Access and Travel Management Plan (ATM) for trails located in the North Shore area on National Forest Lands within the Lake Tahoe Basin. The plan includes new trails, reroutes, and trail closures in order to develop a trail system that is integrated with forest ecology, minimizes impacts, and provides sustainable recreation access for multiple uses on National Forest Lands. An environmental assessment (EA) will be prepared and circulated for comment before a decision is made.

The initial scoping (request for comments) period began on October 24, 2005, and ended on November 30, 2005. Public scoping included a public scoping meeting held on November 3 at the North Tahoe Conference Center in Kings Beach and a scoping letter mailed on October 28, 2005, to interested parties requesting comments and issues by November 30, 2005, for consideration in the North Shore ATM EA. Parties contacted in the scoping process include all the outdoor retailers on the North Shore of Lake Tahoe (via phone calls) as well as The Sierra Club and League to Save Lake Tahoe. Additionally, public notices were placed in the *Tahoe Daily Tribune*, the *Tahoe World*, and the *North Lake Tahoe Bonanza* on October 28, 2005. Copies of these notices are on file.

Input was received from the following organizations and individuals on the date indicated. The majority of comments were collected at the public scoping meeting.

- Mike Schwartz – October 12, 2005
- Assorted Unsigned Public Meeting Attendees – November 3, 2005
- Steve Lingren – November 3, 2005
- Rob McDougall – November 3, 2005
- Rob Parks – November 3, 2005
- Mike and Pam Lefrancois – November 14, 2005

Summary of Comments

Definitions

- **Non-issue** is an opinion or comment.
- **Non-significant issue** meets one of the following criteria:
  - The issue is outside the scope of the proposed action.
  - The issue is already decided by law, regulation, Forest Plan, or other higher level decision.
  - The issue is irrelevant to the decision to be made.
  - The issue is conjectural and not supported by scientific evidence.
- **Significant issues considered for alternative development** are "significant" in the extent of 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.
- **Significant issues considered for alternative development but eliminated from detailed study**. These issues meet the criteria for significance; however, they were dismissed based on reasons described in each response.

Comments

Comments received are categorized based on their relevance to the ATM (see definitions above) and organized based on issue areas, including issues surrounding mixed use on trails (e.g., providing trails for mountain bikes and motorized recreational vehicles), alternative trail alignments, proposed trail closures, and coordination with State parks (specifically, Burton Creek State Park).

Non-issues

Mixed Use on Trails

Two comments (NI-1 and NI-2) describe preserving mixed uses on the trail system, with an emphasis on maintaining or enhancing mountain biking opportunities within the ATM. The comments are general in nature and do not identify specific issues.

NI-1. "Our experiences mountain biking here in Kings Beach indicate that there are many great trails to choose from, but there is definitely some room for improvement. Use conflict, erosion are the first issues that come to mind and I have just recently learned about the wildlife areas too. These are all important to us."

"We want to work with you closely on the trails we use most often. The current plan illustrating the Kings Beach trails is somewhat vague and seemingly incomplete and as

such does not appear to be a definitive guide for the plan. We fear it could alter the mountain biking experience significantly in several areas without proper implementation." (Mike and Pam Lefrancois)

Forest Service Response: Thank you for your comment. The ATM will include a detailed description of the proposed improvements for the trails in the Kings Beach area as well as how these improvements meet purpose and need of the ATM.

NI-2. "The TRT reroute above Tahoe City would improve mountain bike opportunities and loop potential because riders will use trail more frequently and in both directions. The current trail is very rocky and not enjoyable to ride. Some sections must be walked for long distances when riding uphill." (Mike Schwartz)

Forest Service Response: Thank you for your comment. We have identified a reroute that is included in the plan to address this concern. The rerouted trail will have vistas of Truckee River Canyon and provide for a two way travel for non-motorized users.

Omissions and Errors on Scoping Maps

One comment (NI-3) notes omissions and errors with the scoping maps, including not identifying a section of roadway and not accurately identifying the differences between singletrack and jeep trails in some areas. The omissions are not significant in that no changes are proposed for the omitted roadway segment and that labeling errors will be corrected.

NI-3. "This ROAD *[3. BLUE, see map attached to letter]* did not show up on your map but is an obvious error. The differences between singletrack and jeep trails are not accurately noted on map. These errors should be corrected due to their significance." (Mike and Pam Lefrancois)

Forest Service Response: We are aware of the mapping error and corrections have been made. No changes are proposed for the omitted section of road.

Concurrence with ATM

Two comments (NI-4 and NI-5) gave general support to specific improvements described within the ATM, including support to repair/reconstruct one segment and to adopt and manage another.

NI-4. "This trail *[8. RED, see map attached to letter]* is noted as "repair/reconstruct". With the removal of much singletrack elsewhere rehabbing trail 8 will help mitigate the impacts. It currently seems heavily eroded in parts by dirt bikes and is difficult to ascend on a mountain bike. Improvements to trail 8 would also compliment the new trail planned above it." (Mike and Pam Lefrancois)

Forest Service Response: Thank you for your comment. This trail segment will be reconstructed to meet USFS trail construction standards, which will include upgrading

the segment to reduce the potential for erosion, while maintaining an enjoyable trail experience for multiple users.

NI-5. "This trail *[4. BLUE, see map attached to letter]* is noted as "adopt and manage". This is a frequently used route for both ascents and descents and it is good to see attention to it. The majority of it follows an old decommissioned road at a reasonable grade." (Mike and Pam Lefrancois)

Forest Service Response: Thank you for your comment.

Non-significant Issues

Enhancing/Preserving Mixed Use on Trails

Three comments (NS-1, NS-2, and NS-3) focused on maintaining or enhancing mixed use on trails. One comment (NS-1) looked to enhancing mountain bike recreation uses by incorporating stunts or technical trail features into trails, another (NS-2) focused on emphasizing mountain biking in areas that are predominately used for mountain biking, and the final (NS-3) looks to ensure that motorized and non-motorized traffic are kept separate in the ATM. These issues were deemed to be non-significant because these issues are decided by Forest Service regulation (i.e., design standards) or are outside the scope of the proposed action.

NS-1. "Consider new mountain bike recreation uses and incorporate challenging features such as stunts or technical trail features into trails where possible to mitigate off trail riding." (Rob McDougall)

Forest Service Response: One of the elements of the purpose and need for the North Shore ATM is to "preserve multiple use trail opportunities." This includes providing the public a diverse motorized, mechanized, and hiking trail experience. It may be possible to design specific segments of the new mechanized trail system to include stunts and/or technical features that comply with Forest Service design standards. These design features shall be determined on a site specific basis for each trail segment.

NS-2. "Mountain bike emphasis on trails (such as Antone Meadows area) that receive predominant mountain bike uses." (Unsigned)

Forest Service Response: Antone Meadows is located within Burton Creek State Park and is therefore outside of the geographic scope of the proposed action (which includes National Forest lands). However, the proposed action has designated mechanized use trails in the areas that surround Antone Meadows. Trails that connect with the state park trail system will be preserved and upgraded.

NS-3. "Separate motorized from non-motorized uses." (Rob Parks)

Forest Service Response: The ATM will specifically designate where motorized and mechanized uses may take place within the plan area.

Trail Accessibility

One comment (NS-4) addressed a trail accessibility issue near Martis Peak. Any actions at Martis Peak are outside the scope of the proposed action (it is not on National Forest System Lands). In addition, new signage that designates the trail head on National Forest System Lands would address this issue and would improve the user experience within the ATM Plan Area. However, placing new signage at this location is deemed non-significant because it is incorporated into the Proposed Action and any alternatives; it is not considered a potentially significant issue under NEPA that would drive the development of an alternative.

NS-4. "Consider trailhead at Martis Peak." (Steve Lingren)

Forest Service Response: The top of Martis Peak is not within National Forest boundaries, so it is therefore outside of the geographical scope of the Proposed Action. However, signage to designate the trail head on National Forest System Lands will be considered in the Proposed Action and any alternatives.

Alternative Trail Alignments

Four comments (NS-5 through NS-8) addressed alternative trail alignment issues. Comment NS-5 looks for alternative trail opportunities outside of the scope of the proposed action, while comment NS-6 requests that the ATM identify new trail alignments that would begin at the highest points on the Tahoe Rim Trail. Comments NS-7 and NS-8 propose new alignments within ecologically sensitive areas. Comment NS-5 was determined to be a non-significant issue because it addresses an alignment outside of the scope of the proposed action while comment NS-6 is vague and may conflict with Forest Service regulations. Comments NS-7 and NS-8 are considered non-significant because they do not meet the purpose and need of the North Shore ATM (to develop a trail system that is integrated with forest ecology, minimizes impacts, and provides sustainable recreation access for multiple uses on National Forest Lands).

NS-5. "Look at west side of Martis Peak for trail connection opportunities." (Rob McDougall)

Forest Service Response: The land west of the Martis Peak Lookout is not National Forest System Land and not managed by the Lake Tahoe Basin Management Unit and is outside of the scope of this project.

NS-6. "Link new trails with highest points on TRT." (Rob McDougall)

Forest Service Response: Proposed new trails would facilitate a travel network as detailed within the ATM. This includes providing greater opportunities for loop trails that interconnect with the Tahoe Rim Trail. While new trail construction at the highest points on the TRT may not be always possible due to local gradients (which may exceed Forest Service trail construction standards), efforts were made to provide a logical, multiple use trail experience within the ATM.

NS-7. "This trail *[5. GREEN, see map attached to letter]* is suggested to mitigate the needed removal of the nearby singletrack. A proper mountain bike trail would have minimal erosion and wildlife impacts and help replace one of the longest and most enjoyable sections of singletrack in our back yard." (Mike and Pam Lefrancois)

Forest Service Response: A relocated trail is proposed east of the creek on higher capability lands to replace trails proposed for decommission. The trail you refer to as #5 in your comments crosses critical wildlife habitat and therefore does not meet the purpose and need of the North Shore ATM.

NS-8. "This trail *[10. GREEN, see map attached to letter]* is suggested because of the great opportunity posed by your project. Kings Beach has incredible lake views and a connecting trail here would create one-of-a-kind trail. Also consider maintaining access to the spur trail off of trail 1 as the ridge views here are part of what makes these trails great." (Mike and Pam Lefrancois)

Forest Service Response: Decommissioning the trail segments in this area would alleviate erosive conditions and compacted soils. A new trail within this area would potentially reduce the effectiveness of the goal for this area, which is to conserve soil resources and reduce erosion. Therefore, this alignment does not meet the purpose and need of the North Shore ATM.

Trail Decommissioning

Three comments (NS-9 through NS-11) address trail decommissioning issues. The comments are opposed to decommissioning certain trail segments because they are viewed as providing access to important segments of the current trail system. Comment NS-10 also states that decommissioning a trail segment may result in new trails being created by users in place of the decommissioned trails. Comment NS-11 addresses a trail alignment (and proposes an alternative alignment) that is outside of the scope of the proposed action. Comments NS-9 and NS-10 are considered non-significant because the North Shore ATM proposes alternative trail alignments that will maintain or enhance current trail accessibility and the trail decommissions are needed to comply with Forest Services policies to improve water quality and protect natural resources within the ATM plan area. Comment NS-11 is a non-significant issue because it addresses a trail segment that is outside of the scope of the proposed action.

NS-9. "This trail *[7. RED, see map attached to letter]* is noted as "repair/reconstruct". Your plan eliminates trail 6 as our preferred access to trail 4 therefore trail 7 must be improved accordingly at the very least. The trail gradient is extremely steep and needs significant realignment to be suitable for ascent mountain bikers." (Mike and Pam Lefrancois)

Forest Service Response: This portion of trail will be reconstructed to meet USFS trail construction standards, including reducing the overall gradient of the trail segment through the installation of switchbacks. These improvements should significantly improve the accessibility of this trail segment.

NS-10. "This trail *[9. BLUE, see map attached to letter]* is noted as "planned decommission". This is another critical connection between the east and west trails we use. It could be significantly reconstructed and improved without decommission. As local residents, we often access the trails from Fox and Chipmunk. Ascending on trail 9 to trail 6 is a frequent route. Also, the removal of this trail will complicate access to the west side trails from the "sign/parking" area planned nearby. It is anticipated that use-created trails would appear here in absence of a formal route from east to west." (Mike and Pam Lefrancois)

Forest Service Response: This trail segment is within or adjacent to a Stream Environment Zone. Decommissioning this trail segment (along with others in the immediate area) would have a cumulative beneficial effect to local water quality, which meets the purpose and need of the North Shore ATM. An east-west connection between the Kings Beach area to Highway 267 will be maintained through the proposed reconstruction and adoption of existing trail segments in the area. Trail management, including monitoring, will help ensure that trail decommissions are effective. The trail is being relocated to higher capability land east of the creek to protect resources and preserve future trail access.

NS-11. "This trail *[1. BLUE, see map attached to letter]* is noted as "planned decommission". This trail is the ONLY singletrack trail in the higher elevations of my map and as such is a destination point on most rides. The trail can certainly use improvement or relocation, but not providing an alternative is a significant impact. Reconstruction and/or relocating the trail and excluding motor bikes seems like a reasonable alternative. Perhaps trail 2 [see map attached to letter] could be an acceptable alternative." (Mike and Pam Lefrancois)

Forest Service Response: Trails 1 and 2 are not located on National Forest System Lands and therefore is outside of the geographic scope of this project. Trail 1 will be removed from the project maps.

Coordination with State Parks

One comment (NS-12) addresses accessibility and coordination issues with the Burton Creek State Park trail system. This issue is non-significant because the ATM was designed to interconnect with the Park's trail system where it occurs within the scope of the proposed action (i.e., on National Forest System Lands).

NS-12. "It is important for the Burton Creek State Park trail system to function well with the Forest Service trail system." (Mike Schwartz)

Forest Service Response: The proposed new and reconstructed trail segments surrounding Burton Creek State Park will allow for a better loop system and connection between the State Park Trail and the TRT. In addition, the proposed improvements will improve water quality and the trail experience for all users of the system.

Summary of Non-Significant Issues

I have reviewed the public scoping input and this summary report. I appreciate the questions and comments provided by the public. I agree with this report that the **12** non-significant issues, questions, comments or issues responded to above do not meet the NEPA definition for significance relative to the decision being considered by the Forest Service. As defined by NEPA, an "issue" is a point of debate, dispute, or disagreement regarding anticipated effects of the proposed action. An issue is considered not significant if it is either outside the scope of the proposed action; has already been decided by law, regulation, or other higher level decision, if it is irrelevant to the decision to be made or if the issue is conjectural and not supported by scientific or factual evidence.

Though I have decided that the above issues are not significant as defined by NEPA, I do appreciate the concerns they represent. In this case, I am confident that the planned mitigations and specific design features being proposed for the project will resolve these issues.

Terri Marceron
Forest Supervisor, Lake Tahoe Basin Management Unit

Appendix B
National Trail Management Classes

ESA

National Trail Management Classes

Updated 1/31/2005

Trail prescriptions describe the desired management of each trail, based on Forest Plan direction. These prescriptions take into account user preferences, setting, protection of sensitive resources, and other management activities. To meet prescription, each trail is assigned an appropriate Trail Class. These general categories are used to identify applicable Trail Design Parameters and to identify basic indicators used for determining the cost to meet national quality standards.[1]

The General Criteria below define each Trail Class and are applicable to all system trails. Subsequent sections provide Additional Criteria specific to Motorized Trails, Pack and Saddle Trails, Snow Trails, and Water Trails.

Trail Class descriptions define "typical" attributes, and exceptions may occur for any attribute. Apply the Trail Class that most closely matches the managed objective of the trail.

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
General Criteria Physical Characteristics to be Applied to All National Forest Sytem Trails					
Tread & Traffic Flow	◆ Tread intermittent and often indistinct ◆ May require route finding ◆ Native materials only	◆ Tread discernible and continuous, but narrow and rough ◆ Few or no allowances constructed for passing ◆ Native materials	◆ Tread obvious and continuous ◆ Width accommodates unhindered one-lane travel (occasional allowances constructed for passing) ◆ Typically native materials	◆ Tread wide and reltively smooth with few irregularities ◆ Width may consistently accommodate two-lane travel ◆ Native or imported materials ◆ May be hardened	◆ Width generally accommodates two-lane and two-directional travel, or provides frequent passing turnouts ◆ Commonly hardened with asphalt or other imported material
Obstacles	◆ Obstacles common ◆ Narrow passages; brush, steep grades, rocks and logs present	◆ Obstacles occasionally present ◆ Blockages cleared to define route and protect resources ◆ Vegetation may encroach into trailway	◆ Obstacles infrequent ◆ Vegetation cleared outside of trailway	◆ Few or no obstacles exist ◆ Grades typically <12% ◆ Vegetation cleared outside of trailway	◆ No obstacles ◆ Grades typically <8%
Constructed Features & Trail Elements	◆ Minimal to non-existent ◆ Drainage is functional ◆ No constructed bridges or foot crossings	◆ Structures are of limited size, scale, and number ◆ Drainage functional ◆ Structures adequate to protect trail infrastructure and resources ◆ Primitive foot crossings and fords	◆ Trail structures (walls, steps, drainage, raised trail) may be common and substantial ◆ Trail bridges as needed for resource protection and appropriate access ◆ Generally native materials used in Wilderness	◆ Structures frequent and substantial ◆ Substantial trail bridges are appropriate at water crossings ◆ Trailside amenities may be present	◆ Structures frequent or continuous; may include curbs, handrails, trailside amenities, and boardwalks ◆ Drainage structures frequent; may include culverts and road-like designs

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
General Criteria Physical Characteristics to be Applied to All National Forest Sytem Trails					
Signs	◆ Minimum required ◆ Generally limited to regulation and resource protection ◆ No destination signs present	◆ Minimum required for basic direction ◆ Generally limited to regulation and resource protection ◆ Typically very few or no destination signs present	◆ Regulation, resource protection, user reassurance ◆ Directional signs at junctions, or when confusion is likely ◆ Destination signs typically present ◆ Informational and interpretive signs may be present outside of Wilderness	◆ Wide variety of signs likely present ◆ Informational signs likely (outside of Wilderness) ◆ Interpretive signs possible (outside of Wilderness) ◆ Trail Universal Access information likely displayed at trailhead	◆ Wide variety of signage is present ◆ Information and interpretive signs likely ◆ Trail Universal Access information is typically displayed at trailhead ◆
Typical Recreation Environs & Experience[2]	◆ Natural, unmodified ◆ ROS: Often Primitive setting, but may occur in other ROS settings ◆ WROS: Primitive	◆ Natural, essentially unmodified ◆ ROS: Typically Primitive to Semi-Primitive setting ◆ WROS: Primitive to Semi–Primitive	◆ Natural, primarily unmodified ◆ ROS: Typically Semi-Primitive to Roaded Natural setting ◆ WROS: Semi-Primitive to Transition	◆ May be modified ◆ ROS: Typically Roaded Natural to Rural setting ◆ WROS: Transition	◆ Can be highly modified ◆ ROS: Typically Rural to Urban setting ◆ Commonly associated with Visitor Centers or high-use recreation sites ◆ Not present in Wilderness

[1] For user-specific design criteria and specifications, refer to Forest Service Handbook and other applicable agency references.

[2] Typical Recreation Environment & Experience descriptors are provided to assist with understanding Trail Classes. They represent typical or commonly occurring Trail Class and ROS or WROS setting combinations, but are not intended to indicate combinations that are "allowed" or "not allowed". The appropriate Trail Class should be determined by local managers at the trail-specific level, based on Forest Plan direction and other considerations. While less developed trails may occur in any ROS setting, they typically occur in less developed ROS settings. Similarly, more highly developed trails tend to occur in more highly developed ROS settings, but may occur in less developed ROS settings (with the exception of Trail Class 5 which in not consistent with Primitive settings).

Additional Criteria

The following sections provide Additional Criteria specific to Pack and Saddle Trails, Motorized Trails, Snow Trails and Water Trails. These criteria are to applied in addition to the General Criteria above, which are applicable to all system trails.

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
Additional Criteria for Pack and Saddle Trails Apply in addition to Trail Class General Criteria					
Pack and Saddle Trails	◆ Typically, not managed for pack and saddle stock traffic ◆ Maintenance and availability likely intermittent	◆ Trailway narrow. Some brush encroachment may exist, though bump* trees are generally removed ◆ Tread surface rough, with frequent protrusions and obstacles that limit speed and maneuverability of pack and saddle stock ◆ Tread rarely or not graded. Obstacles cleared if they substantially restrict the managed use and difficulty level ◆ Tread surface commonly loose native material, such as sand, mud, rock etc. ◆ Switchbacks and turns accommodate pack stock though may require slower speeds ◆ Crossings may be wet fords if base material is stable; possibly with simple hardening or armoring for resource protection. Simple bridges present if required for resource protection. ◆ Trails have infrequent markers or route identifiers, located primarily at junctions. ◆ Signing size and type appropriate for managed speeds and use.	◆ Trail wide and suitable for pack and saddle stock to pass periodically. ◆ Occasional moderate tread protrusions and short awkward sections, which require speed adjustments ◆ Tread infrequently graded. Obstacles cleared if they substantially hinder the managed use and difficulty level. ◆ Tread surface generally native materials, with occasional on-site fill or imported materials, if more stable surface is desired. ◆ Crossings may be wet fords; likely with hardening and armoring or simple bridges for resource protection and to ensure appropriate access. ◆ Trails have frequent markers and are readily followed ◆ Signing size and type appropriate for managed uses.	◆ Trail wide and suitable for the managed use type, and may consistently accommodate two-way passage. ◆ Tread surface generally smooth with only small protrusions, which moderately affect speed and ease of travel. ◆ Tread graded as needed. ◆ Tread surface may include imported aggregate ◆ Crossings are typically either hardened or armored or a substantial bridge. ◆ Trails have frequent markers and are easily followed ◆ Signing size and type appropriate for managed uses	Not managed for Pack and Saddle Stock.

* “Bump trees” are any trees located closely enough to the trail that they may be hit or bumped by standard-sized pack boxes carried by packstock travelling the route.

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
Additional Criteria for Motorized Trails Apply in addition to Trail Class General Criteria					
Motorized Trails Motorcycle/ATV (etc.)	◆ Typically, not managed for motorized public traffic ◆ Typically, open only to administrative motorized use or non-motorized public access. ◆ Maintenance and availability likely intermittent. ◆ Barriers, signs and gates are maintained to restrict use.	◆ Trailway narrow. Provides one-lane passage for managed use type. ◆ Tread surface rough, with frequent protrusions and obstacles that limit speed and maneuverability of vehicle. ◆ Tread rarely or not graded. Obstacles cleared if they substantially restrict the managed use and difficulty level. ◆ Tread surface commonly loose native material, such as sand, mud, rock etc. ◆ Frequent tight turns that may require speed adjustments or backing ◆ Crossings may be wet fords if base material is stable; possibly with simple hardening or armoring for resource protection. Simple bridges present if required for resource protection. ◆ Trails have infrequent markers or route identifiers, located primarily at junctions. ◆ Signing size and type appropriate for managed speeds and use.	◆ Trail wide and suitable for one lane and occasional two-lane passage for managed use types. ◆ Occasional moderate tread protrusions and short awkward sections, which require speed and maneuvering adjustments. ◆ Tread infrequently graded. Obstacles cleared if they substantially hinder the managed use and difficulty level. ◆ Tread surface generally native materials, with occasional on-site fill or imported materials, if more stable surface is desired. ◆ Crossings may be wet fords; likely with hardening and armoring or simple bridges for resource protection and to ensure appropriate access. ◆ Trails have frequent markers and are readily followed. ◆ Signing size and type appropriate for managed speeds and potential nighttime use (signs likely reflectorized).	◆ Trail wide and suitable for the managed use type, and may consistently accommodate two-way passage. ◆ Tread surface generally smooth with only small protrusions, which moderately affect speed and ease of travel. (Some roughness may be desired and incorporated to control/limit speed.) ◆ Tread graded as needed. ◆ Tread surface may include imported aggregate or intermittent paved sections if more stable surface is desired. ◆ Crossings are typically either hardened or armored or a substantial bridge. ◆ Recommended speeds or speed limits may be posted. ◆ Trails have frequent markers and are easily followed. ◆ Signing size and type appropriate for managed speeds and potential nighttime use (signs reflectorized).	Not managed for motorized trail vehicles.

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
Additional Criteria for Snow Trails Apply in addition to Trail Class General Criteria					
Snow Trails **OSV/Ski**	Not managed for OSV or skiers as primary use type.	◆ Periodic reassurance markers. ◆ Infrequently compacted, if ever. ◆ Typically, small roadside or road-end trailheads with minimal facilities. Trailhead plowed when access is substantially limited, but not necessarily after every snowfall. ◆ Trailway is narrow; provides one-lane passage and infrequent two-lane passage for managed use types. ◆ Winter-specific signs may be present as described in General Criteria (above).	◆ Periodic reassurance markers, or readily followed corridor. ◆ Periodic compaction or grooming. ◆ Typically, basic roadside parking or road-end trailheads with simple facilities. Trailhead plowed to ensure reasonable access by trail users shortly after heavy snowfalls. Simple shelters may be present. ◆ Trailway provides unhindered one-lane passage and commonly two-lane passage, for managed use types. ◆ Winter-specific signs may be present as described in General Criteria (above). Additionally, simple maps or directional information may be present at trail junctions and prominent points along the trail.	◆ Intervisible reassurance markers or easily followed corridor. ◆ Frequent regular grooming. ◆ Typically, substantial trailheads with toilets and other facilities for winter users. Trailhead regularly plowed to ensure access for most vehicles during and immediately after snowfall. ◆ Shelters likely present. ◆ Trailway is wide and may consistently provide two-way passage for managed use types. ◆ Winter-specific signs may be present as described in General Criteria (above). Additionally, maps and directional information are likely posted at junctions and other points along trail.	Not managed for OSV or skiers as primary use type.

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
Additional Criteria for Water Trails Apply in addition to Trail Class General Criteria					
Water Trails For Portage sections of Water Trails, see "General Criteria" above. Note: Many facilities and features described in this row are commonly associated with hiking/portage trails, Concentrated Use Areas or Developed Sites (as compared to the Water Trail itself), and are described here primarily for guidance in applying appropriate Trail Class.	◆ Designated water route, shown on maps and used to access other trails or portages, but with no trail structures, facilities, signs, or recurring maintenance needs along the route. ◆ Maintenance consists of occasional patrols and resource protection. ◆ Signs and/or parking facilities at initial access points only, and likely associated with other trails or sites. ◆ In densely vegetated areas, users will commonly need to lift vessel over logs, shoals, or matted vegetation.	◆ Very few markers or route designators, and likely none in wilderness. ◆ Low profile structures or facilities occasionally present; primarily to reduce beach and bank impacts. Structures typically consist of native material hardening of portage/water entry points. ◆ Signs or parking facilities at initial access point only, and may be associated with another trail or site. ◆ On water trails where dense vegetation and obstructions occur, path is typically narrow, shallow, and may occasionally require user to lift over obstacles or break path through some vegetation and duck under overhanging branches.	◆ Buoys or markers possible to identify route ◆ Typically, facilities on motorized or non-wilderness trails to provide improved access and to reduce beach and bank impacts. ◆ Well-developed parking and launch facilities at primary access points, but facilities and structures rare along trail. ◆ Interpretive and informational displays typically present at primary access points. ◆ On water trails where dense vegetation and obstructions occur (swamps), path is typically cleared wide enough for ready passage and maneuvering of at least one vessel, and usually two-way vessel passage, with only occasional low overhanging vegetation.	◆ Buoys or markers are high profile and may be inter-visible and/or route is readily followed. ◆ Highly developed launch facilities, docks, and amenities typically provided for user convenience. ◆ Well-marked approaches to facilities and portages ◆ Interpretive displays, maps, information kiosks and signs typically present at access points and along route. ◆ On water trails where dense vegetation and obstructions occur (swamps), path is consistently cleared wide enough for unhindered, easy passage of two or more vessels.	Not managed for watercraft as primary use type.

Trail Operation and Maintenance Considerations

Trail Operation and Maintenance Considerations are intended to complement the National Trail Class General Criteria. These considerations can be regarded as general guidelines to assist in developing trail prescriptions, and subsequent program management, operations and maintenance. Trail O&M Considerations offer a general starting point and will likely be adapted to reflect financial limitations and specific district, forest, or regional circumstances. The broad guidance outlined below reflects "typical" considerations for trails in different Trail Classes:

Trail Attributes	Trail Class 1 Minimal/Undeveloped Trail	Trail Class 2 Simple/Minor Development Trail	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail	Trail Class 5 Fully Developed Trail
Trail Management	Typically managed to accommodate: ◆ Low use levels. ◆ Highly skilled users, comfortable off-trail. ◆ Users with high degree of orienteering skill. ◆ Some travel modes and ability levels may be impractical or impossible, and may not be encouraged. ◆ Water Trails: Users require high level of navigation/orientation and paddling skills.	Typically managed to accommodate: ◆ Low-to-moderate use levels ◆ Mid-to-highly skilled users, capable of traveling over awkward condition/obstacles ◆ Users with moderate orienteering skill. ◆ Trail suitable for many user types, but challenging and involves advanced skills. ◆ Water Trails: Moderate to high level of navigation/orientation and paddling/piloting skills required.	Typically managed to accommodate: ◆ Moderate to heavy use. ◆ Users with intermediate skill level and experience. ◆ Users with minimal orienteering skills . ◆ Moderately easy travel by managed use types. ◆ Random potential for accessible use. ◆ Water Trails: Basic to moderate navigation and paddling/piloting skills required.	Typically managed to accommodate: ◆ Very heavy use. ◆ Users with minimal skills and experience. ◆ Users with minimal or no orienteering skills. ◆ Easy/comfortable travel by managed use types ◆ May be (or has potential to be made) accessible. ◆ Water Trails: Basic navigation and paddling/piloting skills required.	Typically managed to accommodate: ◆ Intensive use. ◆ Users with limited trail skills and experience. ◆ Trail typically meets agency requirements for accessibility ◆ Includes "Pedestrian Trails".
Maintenance Indicators	◆ Resource protection. ◆ Safety commensurate with targeted recreational experience.	◆ Resource protection. ◆ Safety commensurate with targeted recreational experience.	◆ Resource protection. ◆ User convenience. ◆ Safety commensurate with targeted recreational experience.	◆ User comfort and ease. ◆ Resource Protection. ◆ Safety commensurate with targeted recreational experience.	◆ User comfort and ease. ◆ Targeted high level of accessibility to key recreational opportunities. ◆ Safety commensurate with targeted recreational experience.
Maintenance Frequency & Intensity**	◆ Infrequent or no scheduled recurring maintenance. ◆ Maintenance interval is typically 5 or more years, or in response to reports of unusual resource problems requiring repair.	◆ Maintenance scheduled to preserve the trail facility and route location. ◆ Maintenance interval typically 3-5 years, or in response to reports of unusual problems.	◆ Trail cleared to make available for use early in use season, and to preserve trail integrity. ◆ Maintenance interval typically 1-3 years, or in response to reports of trail or resource damage or significant obstacles to managed use type and experience level.	◆ Trail cleared to make available for use at earliest opportunity in use season. ◆ Typically, maintenance performed at least annually.	◆ Maintenance performed at least annually, or as needed to meet posted conditions. ◆ Major damage or safety concerns (outside of UA conditions posted at trailhead) typically corrected or posted <24 hours of notice.

** See Trail Condition Assessment Survey Matrix (CASM) for survey interval and intensity.