Final Environmental Assessment

Lake Tahoe Vegetation Management

Nevada Division of State Parks

FEMA-1540-DR-NV, HMGP #1540-2-5

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FEMA

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APE	area of potential effect
BMP	best management practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
dbh	diameter at breast height
DHS	United States Department of Homeland Security
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GCR	General Conformity Rule
HMGP	Hazard Mitigation Grant Program
NAAQS	National Ambient Air Quality Standard
NDEM	Nevada Division of Emergency Management
NEPA	National Environmental Policy Act
NEWO	Nevada Fish and Wildlife Office
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PA	Programmatic Agreement
Park	Lake Tahoe Nevada State Park
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PM_{10}	particulate matter less than 10 micrometers in diameter
SHPO	State Historic Preservation Officer
sp.	species
State Parks	Nevada Division of State Parks
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

The Nevada Division of State Parks (State Parks) has applied through the State of Nevada Division of Emergency Management (NDEM) to the United States Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Region IX Hazard Mitigation Grant Program (HMGP) for funding to implement a vegetation management project in the Lake Tahoe Nevada State Park (Park) in Washoe County, Nevada. The HMGP was authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to provide grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

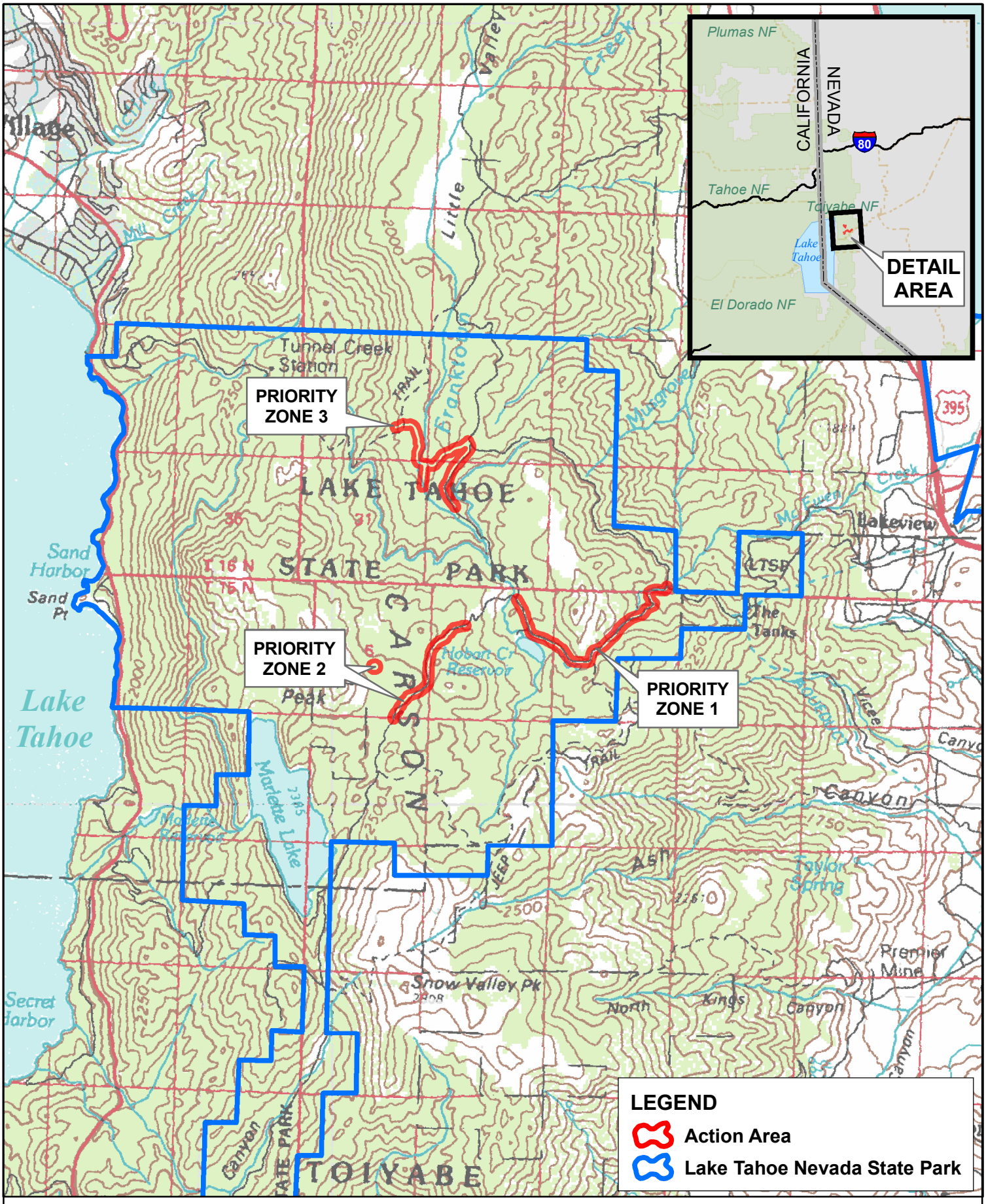
FEMA has prepared this Environmental Assessment (EA) to evaluate the impacts of the proposed HMGP project. The EA has been prepared according to the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 of the Code of Federal Regulations [CFR] Parts 1500–1508), and FEMA's implementing regulations (44 CFR Part 10).

The EA process provides steps and procedures to evaluate the potential environmental, social, and economic impacts of a proposed action and alternatives as well as an opportunity for the public and local, state/territorial, and other federal agencies to provide input and/or comment through scoping studies and a public comment period. These potential impacts are measured by their context and intensity, as defined in the CEQ regulations.

The objective of FEMA's HMGP is to reduce the loss of life and property due to natural disasters and to enable long-term hazard mitigation measures to be implemented during the immediate recovery from a disaster. Through this program, FEMA provides grants to states and local public entities to implement long-term hazard mitigation measures after major disaster declarations. In 2004, the Waterfall Fire burned 8,800 acres in the slopes above Carson City, NV; destroyed 15 homes and one commercial building; and burned 275 acres within the Park. The fire was declared a major disaster (FEMA-1570-DR-NV). This major disaster declaration allows FEMA to provide HMGP funds to NDEM for eligible hazard mitigation projects in any county of Nevada, including Washoe County. State Parks identified the east slope the Park (i.e., the areas of the Park outside of the Lake Tahoe basin) as having a long history and high risk of wildfire and seeks an HMGP grant to address this issue. Therefore, the purpose of this action is to provide HMGP funding to the Nevada Division of State Parks, through NDEM, to reduce the risk of wildfire in Lake Tahoe Nevada State Park.

Fire suppression techniques, repeated drought cycles, insect infestation, and diseases have combined in the vicinity of the action area (the east slope of the Park) to result in a thick forest with significant ladder fuels (lower branches on trees) and both dead and down and standing dead plant material. Due to the condition of this forest, it has the potential to carry intensely hot and devastating wildfires. The entire Park and the surrounding areas are susceptible to these wildfires.

The 13,631-acre Park (Figure 1) contains many structures, utilities, and resources that could be at immediate risk if a fire started in or migrated through the Park. In addition, surrounding areas could also be at risk of a fire starting within or carrying through the east slope area of the Park. The Park is adjacent to the communities of Incline Village to the northwest and the Lakeview subdivision of Carson City and Washoe County to the northeast. The Park is located close to the urban areas of Carson City and the community of Franktown. A 120-kilovolt power transmission line traverses the Park for approximately 4.62 miles, running through part of the Park's backcountry unit. The power transmission line supplies power to communities on the north side of Lake Tahoe. The Park contains the Marlette Lake Water System, a National Register Historic District, which currently supplies water to Virginia City, Silver City, Gold Hill, and Carson City. The Park has many prehistoric cultural resources and historic cultural resources from the Comstock-era. The meadows, streams, lakes, and high peaks contain diverse habitat types. The Park contains a large visitor center, camping and day-use facilities, a boat ramp, and many other facilities and infrastructure, such as sewage treatment plants, that could be affected or lost in the event of a wildfire. Therefore, action is needed to reduce wildfire risks within the east slope of the Park.


Plumas NF
CALIFORNIA
NEVADA
80
Tahoe NF
Toiyabe NF
Lake Tahoe
El Dorado NF
DETAIL AREA
PRIORITY ZONE 3
PRIORITY ZONE 2
PRIORITY ZONE 1
Tunnel Creek Station
LAKE TAHOE
STATE PARK
Sand Harbor
Sand Pt
Lake Tahoe
Hobart Cr Reservoir
Peak
Marlette Lake
Snow Valley Pk
Secret Harbor
Lakeview
The Tanks
Premier Mine
Taylor Spring
North Kings Canyon
TOIYABE
395
LEGEND
Action Area
Lake Tahoe Nevada State Park
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1 inch equals 1 mile
URS
Lake Tahoe Vegetation Management
15298898
Vicinity Map
Figure 1

3.1 ALTERNATIVES

3.1.1 Alternative 1: No Action

Inclusion of a no action alternative in the environmental analysis and documentation is required under NEPA. The no action alternative is defined as maintaining the status quo with no FEMA funding for any alternative action. The no action alternative is used to evaluate the effects of not providing eligible assistance for the action, thus providing a benchmark against which the "action alternatives" may be evaluated. For the purpose of this alternative, it is assumed that the State Parks would be unable to implement the proposed action for lack of federal assistance, and the wildfire hazard on the east slope of the Park would remain unmitigated. Economic losses from wildfires would occur on a periodic basis. Adverse environmental, health, and safety effects resulting from fires would not be mitigated.

3.1.2 Alternative 2: Proposed Action

State Parks proposes to create fuel breaks along several Park access roads. These fuel breaks would extend a maximum of 150 feet on either side of the centerline of the roads in three linear alignments referred to as Priority Zone #1, Priority Zone #2, and Priority Zone #3 (Figure 2). In addition, fuel reduction activities would occur at two primitive camping areas and at a historical structure, all of which are located adjacent to or near to the proposed linear fuel breaks.

In general, treatment activities would involve reducing the density of live trees, dead trees, downed logs, and general biomass within the priority zones. These activities would occur while avoiding sensitive resources. Historical and archaeological resources, except for circumstances described below, would be avoided with a 25-foot non-activity zone surrounding each site. Riparian areas, except for the specific circumstances described below, would be avoided with an approximate 15-foot non-activity zone.

Before treatment, a forester from the Nevada Division of Forestry would conduct a detailed examination of each action site's productivity, exposure, and terrain. This examination would result in detailed treatment specifications, such as determination of the exact trees to be cut, which trees would be left standing at each priority zone (leave trees), and where exclusion areas for sensitive resources would be created. This examination may result in variations from those described below in the density of live trees left standing (leave trees) in specific areas. At some locations, it may be desirable to have a higher density of leave trees on south-facing slopes and a lower density of leave trees on north-facing slopes.

Except where otherwise noted below, treatment areas would be thinned to approximately 20 leave trees per acre. Trees identified as being hazardous to public safety (hazard trees) would be removed. All standing dead trees would be cut with the exception of trees deemed valuable as wildlife snags. Live trees with a 24-inch diameter breast height (dbh) size or greater would be left to add to the forest old growth component, unless they are considered a hazard. Pine species would be given priority as leave trees. The resultant leave trees would represent an uneven-aged forest, to the extent practical. Stump height would not exceed 2 inches measured from the ground on the uphill side or 4 inches above natural obstacles. A fungicide (Sporax®) would be applied to all live-cut stumps greater than 3 inches in diameter, except for stumps in wet areas. Ladder fuels

would be removed as high as is safely possible by work crews, but no greater than one-third of the canopy would be removed. All dead and decadent shrubs (shrubs with less than 50 percent foliar cover), all shrubs growing directly beneath the drip line of leave trees, and a minimum of 50 percent of the remaining live brush would be removed to reduce horizontal fuel continuity. Some downed logs would be left in the treatment areas and would be preferentially located parallel to slope contours to slow and disperse water runoff throughout the area. Downed decaying logs would be reserved for wildlife, erosion control, and nutrient cycling.

Felled trees and cut debris would be kept out of waterways. Any material that falls or rolls into stream channels, open water, perennial streams, and intermittent streams as a result of the proposed action would be removed immediately.

Stems usable as fuel wood (cordwood) would be cut into approximate 18-inch lengths, moved to roadside areas, and stacked. Except where otherwise noted, this cordwood would be moved to staging areas and made available to the public. Standing dead trees designated as wildlife habitat or downed, decaying logs would be left undisturbed. All other biomass would be chipped, piled and burned, or burned in place.

All burning activities would be conducted under a prescription fire plan that would be developed and approved by the Nevada Division of Forestry. Burn piles would be approximately 4 feet tall and 5 feet in diameter. Burning sites for burn piles would be established in open canopy areas to prevent the scorching of live trees. Large pieces of wood that would not be able to completely burn in a 5-hour burn day would not be placed in burn piles. Feeder piles would be fed into the burn pile when the flame length permits it. The work crew supervisor would call the local Fire District before igniting any burn piles. A forester from the Nevada Division of Forestry would be on-site during the pile burning.

Chipped biomass would be broadcast in areas where an inadequate forest floor duff layer exists (less than approximately 4 to 5 inches of duff layer). In areas where a maximum duff layer (6 inches) already exists, excess chips would be moved to staging areas for future disposal or dissemination. Trimming, tree felling, and other cutting activities would be conducted using hand tools. Work crews would reach a maximum of 34 people working on vegetation management activities for the action at any one time. A forester from the Nevada Division of Forestry would be on-site during treatment activities. Staging areas would occur on the existing dirt roads. Chippers, log splitters, and other mechanized equipment would be used at staging areas. Activities such as the refueling of equipment would be conducted away from water bodies and camping areas and would be confined to staging areas.

Action activities would occur in the spring, summer, and fall after the ground has dried from the winter thaw. Treatment activities would likely occur for 75 days each year, over a 3-year period.

Specific treatment activities for each priority zone are described below.

Priority Zone #1

Priority Zone #1 would be subdivided into three areas. Area 1 would extend from the eastern terminus of this zone, at the sawmill steam boiler, to Hobart Reservoir. Area 2 would be at Hobart Campground, a primitive campground adjacent to Hobart Reservoir. Area 3 would extend from Hobart Reservoir to Sunflower Hill Junction at the western terminus of this zone.

In Area 1, aside from the general treatment specifications described above, approximately five dead trees per acre would be left as wildlife snags. Where available, a minimum of five downed logs larger than a 15-inch dbh and 20 feet in length would be retained per acre.

In Area 2, the treatment area would consist of a 150-foot radius along the outside of the "horseshoe" access road to the campsites except at Hobart Reservoir and Franktown Creek, where no treatment would occur. Aside from the general treatment specifications described above, all standing dead and hazard trees would be removed. No wildlife snags would be left in this area. Areas adjacent to the open water and streams at this site would be treated for aspen release only. All small-diameter, dense stands of lodgepole and fir would be removed. Removal of small lodgepole and fir saplings would not occur closer than 15 feet from open water. Ladder fuel removal would be a priority in areas adjacent to campground fire rings and may require the use of ladders or pole-saws to increase cutting height. A 15-foot radius around each campground fire ring would be cleared of all vegetation. Any ladder fuels entering this perimeter would be removed to a minimum of 15 feet above the ground. Dead shrub patches would be completely removed. Where available, a minimum of three downed logs larger than 15 inches dbh and 20 feet in length would be left per acre.

Area 3 encompasses an established aspen community. Treatment specifications would be designed to encourage growth of aspen stands. All aspen plants would be left with the exception of hazard trees and all leave trees would represent an uneven-aged forest. All conifer vegetation less than 24 inches dbh would be removed. Where available, a minimum of three downed logs larger than 15 inches dbh and 20 feet in length would be left per acre. Except for these downed logs, all other standing dead and dead and downed vegetation would be removed. Conifer vegetation greater than 24 inches dbh may have ladder fuels removed to 15 feet or as high as possible. Understory shrubs would be cut back to waist height. Damage to residual aspen trees and regeneration would be minimized to prevent spread of disease such as aspen cankers.

Priority Zone #2

Priority Zone #2 would extend linearly from the top of Sunflower Hill on Hobart Road to the junction of Hobart Road and Tahoe Rim Trail. In addition, this treatment zone would include Marlette Peak Campground. Aside from the general treatment specifications described above, treatment along the road would result in approximately five dead trees per acre to be left as wildlife snags. Where available, a minimum of five downed logs larger than 15-inch dbh and 20 feet in length would be retained per acre.

In Marlette Peak Campground, treatment areas would be 150 feet to the exterior of the existing wagon wheel campground layout (approximately 250 feet from the center of campground at the bear pole). Aside from the general treatment specifications described above, all standing dead vegetation would be removed, hazard trees within the 150-foot boundary would be removed, and ladder fuels would be removed to a minimum of 15 feet above the ground. A 15-foot radius around each fire ring in the campground would be cleared of all vegetation. Any ladder fuels within this perimeter would be removed to a minimum of 15 feet above the ground. Burn piles would not be located within the campground area.

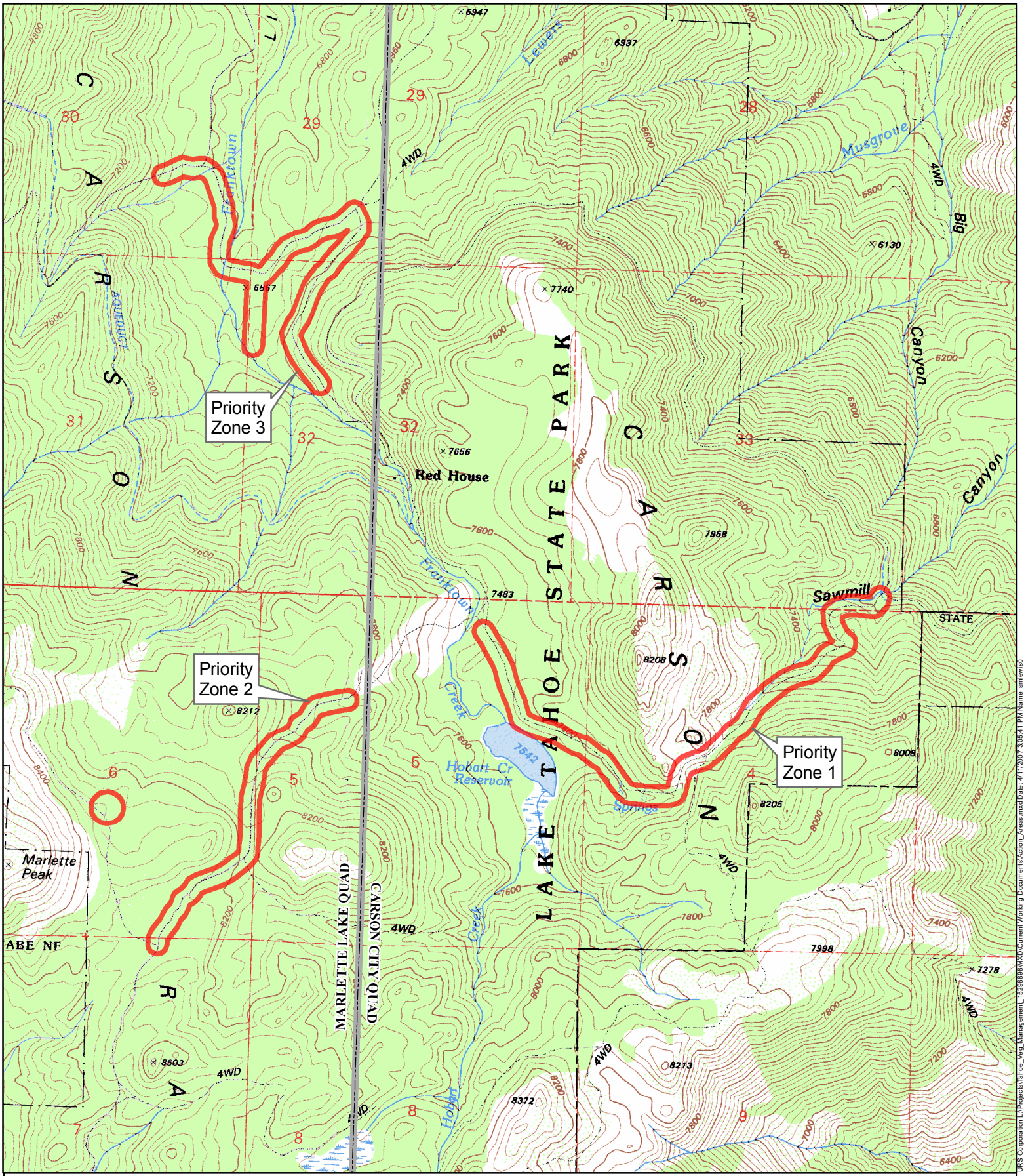
In this priority zone, cordwood moved to staging areas may or may not be made available to the public. Public access to this wood may be prohibitive and present unacceptable impacts to the park resources due to the distance the public would need to travel and the poor road conditions to access some of this zone. Cordwood vendors may be used instead for biomass disposal.

Considerations for cordwood vendors would be explored as implementation of the proposed action progresses.

Priority Zone #3

Priority Zone #3 would extend linearly along East Tunnel Creek Road and would include the area immediately surrounding the Hannah's Cabin historical site. Aside from the general treatment specifications described above, treatment along the road would result in approximately five dead trees per acre to be left as wildlife snags. Where available, a minimum of five downed logs larger than 15-inch dbh and 20 feet in length would be retained per acre.

A 25-foot radius non-activity zone would be flagged around the Hannah's Cabin structure with the exception of the removal of hazard trees and the removal by hand of dead and down biomass. In addition to the treatment specifications described above, the excessive amount of dead and down trees within 150 feet of the cabin would be removed outside of the non-activity zone. A splitting operation may be necessary to remove large-diameter trunks. Hazard trees within 100 feet of the cabin would be removed. All trees would be directionally felled away from the cabin site. Burn piles would not be located within 50 feet of the cabin site. Burn piles near the cabin site would not be greater than 4 feet in diameter and must completely burn in a 5-hour burn day.



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0 1,000 2,000 4,000

1 Inch = 2000 Feet

URS	Lake Tahoe Vegetation Management 15298898	Action Areas	Figure 2

This section describes existing conditions in the action area, evaluates the potential for the no action alternative and the proposed action to result in direct and indirect impacts on the environment, and discusses mitigation measures to avoid or minimize these impacts. This section focuses on the environmental resources for which some level of impact may result: geology, seismicity, and soils; air quality; water resources; biological resources; cultural resources; socioeconomics and public safety; land use and planning; transportation; noise; and visual resources. No other resource areas require evaluation pursuant to NEPA.

4.1 GEOLOGY, SEISMICITY, AND SOILS

4.1.1 Geology and Soils

Affected Environment

The action area is located east of the Tahoe Basin, in the western Carson Range of the Basin and Range physiographic province. This province is characterized by parallel mountain ranges and basins – an area of east-west extension, which has resulted in a series of north-south trending ranges and sediment-filled valleys bounded by high-angle normal faults. This landscape was formed by a combination of volcanic activity and a consequence of plate tectonics called block faulting. The Carson Range was formed by uplifting between 2 and 10 million years ago.

Geologic hazards in the region include a potential of landslides. Localized, small-sized landsides may occur on steeper mountain slopes if sufficient rainfall occurs on unprotected land surfaces. Landslide potential can be exacerbated by wildfires that destroy the stabilizing vegetative ground cover, thereby resulting in increased risk of landslide, mudslide, or debris flow during high-rainfall events.

The soils in the action area consist of primarily stony sands and loams that were weathered from volcanic andesites or granitic glacial deposits. In Priority Zone 1, the soils are roughly 75 percent Temo-Witefels-Rock outcrop association, which are bouldery coarse well-drained woodland sands formed from weathered granites. The zone also included poorly-drained Marla loamy sand in outwash fans, and some Inville variant gravelly sandy loam. In Priority Zone 2, the soils are approximately 50 percent Temo-Witefels-Rock outcrop association. The other half are Tallac very bouldery sandy loam, a well-drained soil weathered from glacial deposits. Finally, in Priority Zone 3, the soils are roughly 75 percent Jorge-Boomtown-Fugawee association, which consists of well-drained, very stony sandy loam, formed from weathered basic volcanic andesites. The remaining soils are Apmat gravelly sandy loams, which are found in alluvial glacial outwash of volcanic rocks (NRCS 2004).

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. During and after wildfires, soil of the east slope of the Park would be substantially less vegetated and would be highly susceptible to increased erosion; dry ravel; rock fall; debris flows; and flooding during precipitation events. The destabilization of the soils could

lead to an increase in the landslide hazard in the vicinity. These resulting geologic hazards would result in an increased to loss of life and property downstream of the fire. Post-fire mitigation to reduce this vulnerability would be costly and its effectiveness would be uncertain.

Alternative 2: Proposed Action

Under the proposed action, no impacts would occur to geology, and the potential for landslides would remain unchanged. The vegetation removal would not result in an overall loss of stabilizing vegetative ground cover. Implementation of the proposed action would not alter the potential for landslides.

Soils would be temporarily affected by implementation of the proposed action. Activities such as vegetation removal can cause compaction and leave soils exposed and susceptible to water and wind erosion. Areas that would be disturbed by action activities would be stabilized with erosion control measures to reduce any erosion that might occur. State Parks would minimize any ground disturbance from the impact of felling trees, from transporting biomass to staging areas, and from foot traffic from hand-thinning crews. Best management practices (BMPs) would be employed, such as chipping and spreading removed biomass to maintain an appropriate duff layer, which would eliminate or reduce soil erosion during the implementation of the proposed action and after the action is complete. All vehicle disturbances would be kept to hardened access roads.

The proposed action would reduce the hazard of large wildfires in the east slope of the Park. This would result in beneficial effects to soils in the Park, which would be susceptible to erosion, dry ravel, rock fall, and debris flows after large wildfires.

The proposed action would not result in an adverse impact to geology and soils.

4.1.2 Seismicity

Affected Environment

The Carson Range is a seismically active area, with noticeable earthquakes occurring frequently. Thirteen earthquakes of magnitude 6.0 or greater have occurred in the region since 1850. FEMA classifies the Reno/Lake Tahoe/Carson City region as Seismic Zone 4, which means it will experience earthquake ground shaking of greater than 0.5g peak horizontal acceleration (where "g" is the unit used to express gravitational force) and has a one in 500 chance per year of sustaining substantial building damage (i.e., 10 percent probability of experiencing ground shaking of at least 0.5g every 50 years). This is the highest hazard zone on this scale.

Executive Order (EO) 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, requires newly constructed buildings to meet standards for seismic safety set by the National Earthquake Hazard Reduction Program. However, EO 12699 applies only to construction of new buildings that are to be used or intended for sheltering persons or property. Because the HMGP project does not involve new building construction, EO 12699 does not apply.

Environmental Consequence

Alternative 1: No Action

Under the no action alternative, no impacts would occur to the existing seismicity.

Alternative 2: Proposed Action

Under the proposed action, the potential for earthquakes remains unchanged. An earthquake of 0.5g is unlikely to affect the proposed action. Evacuation routes would not be altered by implementation of the proposed action.

4.2 AIR QUALITY

Affected Environment

The Clean Air Act is a comprehensive federal law that regulates air emissions from area, stationary, and mobile sources. It authorizes the United States Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQSs) to protect public health and the environment. The NAAQSs include standards for the following six criteria pollutants: nitrogen dioxide, ozone, carbon monoxide, sulfur dioxide, particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and particulate matter less than 10 microns in diameter (PM_{10}). Areas where the monitored concentration of a pollutant exceeds the NAAQS are classified as being in nonattainment for that pollutant. The Clean Air Act requires that State Implementation Plans be developed for nonattainment areas. These plans are to address how compliance with the NAAQS would be achieved for criteria pollutants. If the monitored concentration is below the NAAQS, the area is classified as being in attainment.

The federal General Conformity Rule (GCR) was established by the USEPA and the U.S. Department of Transportation. The GCR requires the analysis for all federal actions of emissions of criteria pollutants, or their precursors, for which an area is designated nonattainment. The GCR includes a comprehensive set of exemptions found in 40 CFR 51.853. Each federal action must be reviewed to determine whether it qualifies for one of the GCR exemptions or whether further analysis is required under the GCR to establish conformity with the applicable State Implementation Plans.

Washoe County is classified as being in attainment or is unclassified for ozone, nitrogen dioxide, sulfur dioxide, lead, and particulate matter less than 2.5 microns in diameter. However, Washoe County is in serious nonattainment for concentrations of PM_{10} (USEPA 2007). Because the region is in nonattainment for a criteria pollutant, the GCR applies.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, air quality standards would not be directly affected. However, in the event of a wildfire within or carrying through the east slope of the Park, the resulting smoke

would cause temporary, adverse impacts to air quality. Smoke from a fire consists of carbon dioxide, water vapor, and particulates (some of which contain volatile organic compounds and carbon monoxide). In addition, support vehicles used in fighting the wildfire would cause a slight, temporary increase of particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and ozone precursors. Soils exposed by a wildfire would increase particulate matter levels through wind erosion.

Alternative 2: Proposed Action

Implementation of the proposed action would result in minor, short-term deterioration of air quality. The action-related effects to air quality would be limited to increases of fugitive dust, equipment-related fossil fuel combustion emissions, and smoke released from biomass burn piles. Fossil fuel combustion from equipment and vehicles used in action implementation would result in minor and short term emissions of carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds, and particulate matter. Pile burning activities would occur during a 5-hour period. Smoke from biomass burn piles would consist of carbon dioxide, water vapor, particulates (some of which contain volatile organic compounds and carbon monoxide). Prior to igniting burn piles, a forester from the Nevada Division of Forestry would notify the Washoe County Air Quality Management Division of the planned burning activities. Washoe County Air Quality Management Division requires no additional action from State Parks when conducting biomass pile burning, per the State of Nevada Revised Statutes. Because of the temporary nature of emissions from the proposed action, fugitive dust, equipment-related fossil fuel combustion emissions, and smoke released from biomass burn piles would not result in adverse affects to air quality.

The proposed action qualifies under an exemption of the GCR. Applicable exempt actions are described as those "which implement a decision to conduct or carry out a conforming program, such as prescribed burning actions, which are consistent with a conforming land management plan" (40 CFR Sections 51.853(c)(4) and 93.153(c)(4)). The proposed action would implement the phase one program of the East Slope Fuels Reduction Program land management plan. Therefore, the proposed action would be exempt from the GCR applicability requirement, would conform to the applicable State Implementation Plans, and a formal determination of the GCR is not required.

To minimize the effects on air quality, State Parks would maintain properly tuned mechanical equipment, minimize idling time of support vehicles, and employ dust control measures, such as watering work sites, as necessary.

Under the proposed action, no long-term impacts would occur to air quality in the action area.

4.3 WATER RESOURCES

4.3.1 Surface Water

Affected Environment

Hydrology and water resources in the Park are depended upon by towns and cities in the region.The Park is home to the historic Marlette Lake Water System, which supplies water to

Virginia City, Silver City, Gold Hill, and Carson City. This National Civil Engineering Landmark system was originally developed in the 1870's to supply water to the booming Comstock mining area, and today 100 percent of the municipal needs for Virginia City and around 30 percent of the annual needs of Carson City are still provided by this system. The system includes Marlette Lake, Hobart Reservoir, and a system of flumes and pipelines that transport an average of 16,925 acre feet/year of water.

Precipitation in the action area is around 17 inches annually, falling primarily as rain or snow in the winter months, although more snow can accumulate at higher elevations. Precipitation along the western slope of the Carson Range is collected by the water system. As shown in Figure 2, several ephemeral and perennial creeks and drainages occur in the Park. The streams and creeks in the general action area drain into the Washoe Valley.

The provision of high-quality municipal water is a critical function of the Park. Portions of the Marlette Lake Water System were damaged during the Waterfall Fire of 2004, and the system is still at risk of damage due to wildfire. In addition, the quality of surface water in the vicinity of the action area in the Park effects the downstream water quality in Washoe Valley. Intact vegetation, especially in the riparian area around streams, provides important controls for minimizing runoff and sedimentation. Complete loss of vegetation, as occurs during a wildfire, can significantly reduce water quality by destabilizing soil. This results in an increased in surface runoff, sedimentation, and in some severe cases, it can lead to mud slides, debris flows, or landslides. The proposed action is located outside the Lake Tahoe Basin, however, the proposed action would help protect parts of the park that are within the basin.

Section 404 of the Clean Water Act requires that project proponents receive a United States Department of the Army permit for work involving the discharge of dredged or fill materials in waters of the United States. The United States Army Corps of Engineers (USACE) is responsible for reviewing actions for United States Department of the Army permits. Section 401 of the Clean Water Act requires that applicants for federal permits or licenses to conduct work involving any discharge into waters of the United States receive a Water Quality Certification. Nevada Department of Environmental Quality is responsible for reviewing actions for Water Quality Certification. A National Pollutant Discharge Elimination System (NPDES) permit is required for any action that disturbs 1 acre of land or more.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. The Marlette Lake Water System would remain at risk for damage due to a catastrophic wildfire. After a wildfire, downstream surface water quality would be affected. Surface water quality would deteriorate as a result of increased sedimentation, turbidity, and concentrations of suspended solids due to the vegetation from a catastrophic wildfire. These effects would be short-term; as vegetation recovers in the burned area, turbidity and suspended sediment concentrations would gradually lower to pre-fire levels.

Alternative 2: Proposed Action

The proposed action would involve minimal activities within streams or water bodies, and it would result in no discharges or fill in waters of the United States (U.S.). The proposed action would not require Section 404, Section 401, or NPDES permits.

State Parks would implement BMPs, when applicable, including erosion control measures, to reduce the potential for erosion to occur from action activities. All vegetation removal activities would flag and avoid a 15-foot buffer in riparian areas, except for the removal of fir trees that have invaded the riparian zone. Other BMPs may include but are not limited to using silt fencing and chipping and spreading biomass in cleared areas to maintain a 4- to 6-inch duff layer. The application of fungicides (Sporax®) to freshly cut stumps for disease control would not occur in permanently wet areas. With the implementation of these measures, direct impacts to water quality as a result of the proposed action would be minimal.

Implementation of the proposed action would help mitigate threats to water quality due to wildfire by protecting vegetation as well as the Marlette Lake Water System. The proposed action would not have a long-term adverse impacts on water quality.

4.3.2 EO 11988: Floodplain Management

Affected Environment

EO 11988, Floodplain Management, requires federal agencies to avoid, to the extent possible, the short- and long-term adverse impacts associated with the occupancy and modification of floodplains. FEMA's regulations for complying with EO 11988 are found at 44 CFR Part 9.

According to the 1994 FEMA Flood Insurance Rate Map (FIRM) for the action area, the action area is within Zone X, an area outside the 500-year flood plain.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, no impacts would occur to flood hazards in the action area.

Alternative 2: Proposed Action

Implementation of the proposed action would have no impact on flood hazards in the action area.No further action under EO 11988 would be required.

4.4 BIOLOGICAL RESOURCES

4.4.1 Natural Vegetation Communities

Affected Environment

Vegetation communities found within the action area were identified and mapped in the field by using high quality aerial photography obtained from the Nevada Department of Transportation for the Marlette Lake Area. Nine vegetation communities were identified in the action area. The communities include Sierran Mixed Conifer, Montane Chaparral, Montane Riparian, Aspen, Sagebrush, Bracken Fern, Sunflower, Grassland, and Disturbed. A description of each of the vegetation communities located within the action areas is provided below.

Sierran Mixed Conifer

The majority of the action area is composed of Sierran Mixed Conifer. This community is described as containing more than three kinds of conifer species. The dominant conifer species within this community type include Jeffrey pine (*Pinus jefferyii*), lodgepole pine (*P. contorta*), Western white pine (*P. monticola*), white fir (*Abies concolor*), and red fir (*A. magnifica*). The dominance of these species shifts within the action area with relation to slope, aspect, soil, availability of moisture, and elevation. The understory within the community is varied and composed of a variety of shrubs, herbs, and grasses including, but not limited to, Sierra bilberry (*Vaccinum caespitosum*), tobacco brush (*Ceanothus velutinus* var. *velutinus*), mountain whitethorn (*Ceanothus cordulatus*), green leaf manzanita (*Arctostaphylos patula*), bitterbrush (*Purshia tridentata*), sagebrush (*Artemisia tridentata*), rabbitbrush (*Chrysothamnus* sp.), currants (*Ribes* spp.), buckwheat (*Eriogonum* sp.), arrow-leaved balsam-root (*Balsamorhiza sagittata*), bracken fern (*Pteridium aquilinum* var. *pubescens*), woolly mule's ears (*Wyethia mollis*), lupine (*Lupinus* sp.), and spreading phlox (*Phlox diffusa*). The assemblage of dominant tree canopy cover varies in each Priority Zone of the action area.

Montane Chaparral

Montane Chaparral areas are located in the central portion of Priority Zone 1. This community is found on exposed granitic soils with rock outcrops and contains sparse conifer coverage. This vegetation community is dominated by low growing shrub species such as Sierra bilberry, tobacco brush, and green leaf manzanita. This shrub association is also found in some of the Sierran Mixed Conifer areas where an open canopy occurs. This community is fire adapted and typically species sprout back following a fire.

Aspen

Aspen groves are located in various locations adjacent to streams and wetland areas within all three of the priority zones. These areas are characterized by a canopy of quaking aspen (*Populus tremuloides*). Aspen trees are phreatophytes and have deep root systems that allow them to grow in both wetland and adjacent upland areas. In some areas conifers, such as white fir and lodgepole pine, have invaded these stands. Occasionally, shrub layer species occurring within

this community include several different species of willow as described in Montane Riparian (below). Ground-cover species within this area are typically a dense assemblage of herbs and grasses, including cow lily (*Veratrum californicum* var. *californicum*), horse tail (*Equisetum arvenses*), onion (*Allium* sp.), Fendler's meadow rue (*Thalictrum fendleri* var. *fendleri*), and canarygrass (*Phalaris* sp.).

Montane Riparian

Montane Riparian areas are found adjacent to and within streams and adjacent wetlands. This community is characterized by low growing shrub to small tree species predominately composed of several different species of willow including Eastwood willow (*Salix eastwoodiae*), Lemmon's willow (*S. lemmonii*), Scouler's willow (*S. scouleriana*), and narrow-leaved willow (*S. exigua*). An occasional Aspen tree was present and a dense, diverse assemblage of herbaceous ground cover is present throughout this community. The dormant herbaceous and graminaceous vegetation within this community is similar to that observed within the Aspen designations.

Sunflower

One area was identified as a Sunflower community. This area was devoid of dominant tree and shrub species and the herbaceous layer in the community was dominated by woolly mules ears and arrow-leaved balsam-roothead. Other subdominant vegetative species observed include immature red fir, bitterbrush, sagebrush, lupine, and Anderson's thistle (*Cirsium andersonii*). This designation is located in proximity to the eastern extent of Priority Zone 3 and within the central portion of Priority Zone 2 near the turn-off road to Hannah's cabin.

Bracken Fern

One area was dominated by bracken fern located on the western portion of Priority Zone 3 on a steep hillside. This area is devoid of canopy tree species and shrubs and is composed almost exclusively of bracken fern. Factors that may have created this forest opening include prior forest disturbance, slope, aspect and variation in the soil.

Grassland

Three areas are identified as grasslands composed of a variety of herbs and grasses. These areas are open and devoid of tree species and contain less than 10 percent of shrub species. Due to the timing of the surveys many species within this vegetation association were not identifiable, species such as bluegrass (*Poa* sp.), other unidentifiable grass species (Poaceae), lodgepole pine saplings, bitterbrush, sagebrush, rabbitbrush, onion, and cinquefoil (*Potentilla* sp.). Grasslands are located in the central portions of Priority Zone 1 and Priority Zone 2, as well as at the extreme eastern edge of Priority Zone 3.

Sagebrush

Sagebrush vegetation communities were identified in several areas where canopy coverage was absent. This community is dominated by sagebrush with associated species such as lupine,

bitterbrush, buckwheat, unidentified grasses (Poaceae), and immature western white pine. This community was identified in the west-central portion of Priority Zone 2. Some characteristics of this ground-cover assemblage are also present in the Sierran Mixed Conifer community where tree coverage and a relatively open canopy occur.

Disturbed

Disturbed areas were identified throughout the central portion of each of the priority zones. The disturbed areas are primarily composed of dirt roads, camping grounds, or bare ground. These areas are primarily at grade with some cut and fill. These areas are typically not vegetated.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. In the event of a large wildfire, biological resources could be adversely directly affected through mortality of the flora and fauna of the burned areas. Indirect adverse effects would likely occur due to the destruction of habitat through loss of vegetative cover, erosion, and sedimentation. These indirect effects from habitat loss could be short-term as the burned areas would eventually revegetate, however, it is uncertain if the habitat that would become established after a large wildfire would be the same prior to a wildfire. Invasive plant species could become dominant and the habitat could become converted to a habitat with lower biological diversity.

Alternative 2: Proposed Action

The proposed action would result in temporary adverse effects to biological resources but would have long-term beneficial effects. The removal of trees, thinning of branches, removal of dead trees, and downed logs, and a reduction of the general biomass of the action area would result in direct effects to individual trees and the specific biota that would be occupying the removed biomass. However, the proposed action would result in an action area that more closely mimics a forest habitat that experiences natural disturbance regimes, such as occasionally low intensity fire. The proposed action would result in improvements to the habitat of the action area. Vegetative response after implementation of the proposed action would result in the appropriate growth of desirable native plant species; enhance wildlife habitat, and improved aquatic habitat. In addition, the proposed action would reduce the hazard of the large wildfire in the area, which would have long-term beneficial effects to biological resources within the action area and the general vicinity of the action area.

4.4.2 Federally Listed Species

The Endangered Species Act (ESA) of 1973 establishes a federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. Section 7 of the ESA specifically charges federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All federal agencies must ensure that any action

they authorize, fund, or carry out is not likely to jeopardize the continued existence of a threatened or endangered species or result in the destruction of critical habitat for these species.

Affected Environment

FEMA obtained information concerning species that are listed as endangered or threatened, proposed for listing as endangered or threatened, or candidates for listing as endangered or threatened under the ESA that may occur in the action area.. The background data review identified three wildlife species known from the action vicinity that are federally listed as threatened or endangered: bald eagle (*Haliaeetus leucocephalus*), Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), and Carson wandering skipper (*Pseudocopaeodes eunus obscurus*). Based on the habitat identified in the action area and its historic range, the bald eagle is the only federally listed species that has the potential to occur in the action area.

Lahontan Cutthroat Trout

The Lahontan cutthroat trout occur in a wide variety of cold-water habitats including large terminal alkaline lakes (e.g., Pyramid and Walker lakes); alpine lakes (e.g., Lake Tahoe and Independence Lake); slow meandering rivers (e.g., Humboldt River); mountain rivers (e.g., Carson, Truckee, Walker, and Marys rivers); and small headwater tributary streams (e.g., Donner and Prosser creeks) (NFWO 2006). Generally, Lahontan cutthroat trout occur in cool flowing water with available cover of well-vegetated and stable stream banks, in areas where stream velocity breaks occur, and in relatively silt free, rocky riffle-run areas. The action area does not provide suitable habitat for the Lahontan cutthroat trout because it lacks these habitat features.

Carson Wandering Skipper

The Carson wandering skipper is locally distributed in grassland habitats on alkaline substrates in Nevada and California. Salt grass is the larval food plant and is commonly found in the salt-bush-greasewood community of the intermountain west (NFWO 2006). Known nectar sources for the adults include thelypody (*Thelypodium crispum*), tumble mustard (*Sisymbrium altissimum*), racemose golden-weed (*Pyrrocoma racemosus*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), slender bird's-foot trefoil (*Lotus tenuis*), slender cleomella (*Cleomella parviflora*), small-flowered cleomella (*Cleomella plocasperma*), and heliotrope (*Heliotropium curassavicum*) (NFWO 2006). Suitable habitat for the Carson wandering skipper appears to have the following characteristics: located east of the Sierra Nevada, elevation less than 5,000 feet, presence of salt grass; near nectar sources, near open areas near springs or other water bodies, and possibly near geothermal activity (NFWO 2006). The action area does not provide suitable habitat for the Carson wandering skipper because it is located from approximately 7,200 to 8,200 feet in elevation, which is above this species known range.

Bald Eagle

The bald eagle is listed as threatened under the federal ESA since 1995. The current range of the bald eagle includes all of the conterminous United States and Alaska. Bald eagles winter throughout most of California and Nevada at lakes, reservoirs, river systems, and some rangelands and coastal wetlands. Currently, no proposed or designated critical habitat occurs for this species.

The bald eagle is especially common in areas with large expanses of aquatic habitat. Throughout their range, they select large, super-canopy roost trees that are open and accessible, mostly

conifers. They winter primarily in coastal estuaries and river systems, where thousands of bald eagles migrate each fall to take advantage of salmon-spawning runs.

Bald eagles are monogamous and thought to mate for life unless one mate dies. Their breeding season extends from January through August. Bald eagles build large stick nests lined with soft materials and nests may be used for several years by the same pair of eagles. The main current cause of their declining bald eagle populations is the loss of nesting habitat due to development along the coast and near inland rivers and waterways.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unchanged. In the event of a large wildfire, potential bald eagle habitat (both inside and outside the Park) could be adversely directly affected within the burn area. The effect of this habitat loss would be long-term as the large trees used by bald eagles for nesting would take several decades to grow to the size that would be used by nesting eagles.

Alternative 2: Proposed Action

FEMA initiated consultation with the United States Fish and Wildlife Service (USFWS) for the proposed action on December 20, 2005. FEMA determined that the proposed action would not likely adversely affect any federally listed species in the action area. FEMA documented the results of this determination in a "No Likely Adverse Affect" Letter Report that summarized the findings of the biological surveys performed at the action site. In electronic correspondence to FEMA on March 12, 2007, the USFWS issued a determination of "no effect" to federally listed species. USFWS reasoned that because no bald eagle nest sites occur within 1 mile of the action sites and no loud concussive noise (blasting, heavy equipment, etc.) would be generated by the action, there would be no effect on bald eagles (Appendix A). Therefore, FEMA has determined that implementation of the proposed action would not likely to adversely affect Federally listed species or their critical habitat.

4.4.3 Invasive Species - EO 13112:

Affected Environment

Under EO 13112 actions that occur on federal lands or are federally funded must be “subject to the availability of appropriations, and within administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to, and control, populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; and (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded.”

No invasive species were identified in the action area during biological resources field surveys.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. With an unmitigated fire hazard, there would be potential for a large fire to occur that could result in the establishment of invasive species in the burned area.

Alternative 2: Proposed Action

Under the proposed action, vegetation would be selectively cleared from the action area. The action is designed to help restore the action areas to a natural healthy function in the absence of normal fire regime. The action areas would remain vegetated with native species. Invasive species are not expected to become established in the action area as a result of the proposed action. Occasional maintenance of the action area by State Parks to maintain the vegetation density of the area would likely result in the removal of any invasive species if they become established.

4.4.4 Wetlands - EO 11990

Affected Environment

EO 11990 requires federal agencies to take action to minimize the destruction or modification of wetlands by considering both direct and indirect impacts to wetlands that may result from federally funded actions. FEMA's regulations for complying with EO 11990 are found at 44 CFR Part 9.

Wetlands delineations were not prepared for the action area. Based on site reconnaissance of the action area and review of the National Wetland Inventory maps, some wetlands are found in the action area associated with Aspen and Montane Riparian communities.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. Wildfire could affect wetlands within the action area and the Park. While fire may have some beneficial effects to native wetland plant species, fires of severe intensity could cause long-term damage. Additionally, increased runoff and sedimentation may degrade water quality, affecting not only the health of wetlands within the action area , but also wetlands located downgradient.

Alternative 2: Proposed Action

All activities of the proposed action would follow BMPs to avoid any impacts to wetlands. All vegetation removal activities would flag and avoid a 15-foot buffer in riparian areas, except for the removal of fir trees that have invaded the riparian zone. The application of fungicides (Sporax®) to freshly cut stumps for disease control would not occur in permanently wet areas. Through the implementation of avoidance measures, the proposed action would not impact wetlands; therefore, the proposed action complies with EO 11990.

4.5 CULTURAL RESOURCES

Affected Environment

In addition to review under NEPA, consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA). Requirements include identifying significant historic properties and districts that may be affected by a federal undertaking and mitigating adverse effects to those resources as well as coordination with local Native American tribes.

The cultural setting of the region has been recently summarized in a confidential Cultural Resources Technical Report. The full report is available through FEMA on a "need to know" basis. The following discussion is a summary of data presented in this report.

Pursuant to the NHPA, FEMA contacted the Washoe Tribe of California and Nevada, Gardnerville, Nevada on November 8, 2006 to solicit comments regarding the proposed action. The Washoe Tribe responded via telephone to FEMA's archaeological consultant on December 5, 2006, and via letter to FEMA dated December 7, 2006, stating that no prehistoric resources are known in the action area. The Tribe requested to be informed of any prehistoric finds and to be provided an opportunity to review the cultural resource report. The Tribe expressed a preference for site avoidance. The Cultural Resources Technical Report prepared for the proposed action was transmitted to the Tribe on April 9, 2007.

Cultural resource investigations were undertaken to ensure that all cultural resources, including archaeological sites and built environment features, had been identified within the action's area of potential effect (APE). The efforts to identify both previously recorded sites and previously undiscovered sites within the APE were undertaken in compliance with Section 106 of the NHPA and the existing Programmatic Agreement (PA) among the Nevada State Historic Preservation Officer (SHPO), FEMA, and NDEM. The results of these investigations were summarized in the Cultural Resources Technical Report for the proposed action.

FEMA's archaeological consultant conducted a thorough literature review and a field survey of the APE. The literature review occurred at the Nevada State Museum in Carson City on November 1, 2006. The field survey was conducted on November 2 through November 4, 2006. The APE was determined to consist of all areas where vegetation would be removed, as depicted in Figure 2. The field survey consisted of an intensive pedestrian survey using 20-meter transect intervals. The ground surface within the APE was rocky and partially covered with dried grasses and leaves, allowing 50 to 90 percent ground visibility. In areas with dense ground cover, the archaeologists periodically cleared the vegetation from the ground to inspect the underlying soil surface. Additionally, the archaeologists inspected the excavation spoils at the openings of rodent burrows because they can bring buried items, including cultural artifacts and midden, to the surface from subsurface deposits.

A total of 12 cultural resources were identified within the APE during the archaeological surveys for the proposed action, including three previously undocumented resources. New artifacts and/or features were identified at two of the previously recorded sites.

Environmental Consequences

Alternative 1: No Action

Under the No Action Alternative, the existing wildfire hazard in the vicinity of the action area would remain unmitigated. A large wildfire could result in substantial impacts to cultural resources in the action area if they are burned, damaged, or destroyed. In addition, archeological sites exposed by fire could be subject to erosion or vandalism from the loss of vegetative cover.

Alternative 2: Proposed Action

FEMA evaluated the potential for the proposed action to affect cultural resources. In addition, as the SHPO requested during a meeting on September 28, 2006, FEMA evaluated the context of the road alignments in the action area as contributing elements of the Marlette Lake Water System, which is listed on National Register of Historic Places (NRHP). These evaluations are described in the Cultural Resources Technical Report for the proposed action.

FEMA initiated consultation with the SHPO for the proposed action on February 22, 2007. This consultation included the Cultural Resources Technical Report and a summary cover letter requesting consultation and concurrence with FEMA's findings. FEMA determined that the proposed action would result in "no historic properties affected" within the APE, with the exception of the Marlette Lake Water System roads, which would result in no adverse effect. In an electronic correspondence with FEMA's archaeological consultant on April 3, 2006, the SHPO stated that they did not object to FEMA's conclusions of effects (Appendix A).

It is possible that previously unidentified archaeological resources could be discovered during action implementation. In accordance with Stipulation X of the PA, FEMA would require State Parks to stop work in the event of an unexpected discovery of previously unidentified archaeological resources (including human remains), notify FEMA, and fully comply with the steps outlined in Stipulation X of the PA. In the event of the discovery of Native American human remains, State Parks would initially notify FEMA. Under the direction of FEMA, State Parks would then notify the Washoe Tribe.

4.6 SOCIOECONOMICS AND PUBLIC SAFETY

4.6.1 Economics

Affected Environment

Socioeconomics describes a community by examining its social and economic characteristics. The action area is located within a State Park with no permanent residents. The Park is frequented by a diverse population of visitors. Visitation to the park averages 1 million people, annually. Recreationally, the Park is utilized for hiking, mountain biking, fishing, picnics, and other outdoors activities. In addition, the Park serves as a municipal water source for residents outside the park boundaries.

The maintenance of the Park and its resources provides direct employment for State Park staff, staff of the Marlette Lake Water System, and Nevada Division of Forestry staff. The Park also

serves as an economic resource to the general region by attracting non-local visitors to the region, who may provide support to businesses of the area. In addition, by providing an essential infrastructure resource to the nearby area (i.e., the Marlette Lake Water System), the resources of the Park contribute an element that promotes economic stability to the area.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. A large wildfire in the Park could result in damages to the Marlette Lake Water System, which could affect the municipalities receiving this water by affecting the consistency and quality of their water supply. Depending on the extent of damages, a dramatic change in the water supply could have effects to the economy of the areas. A large wildfire could also reduce the number of non-local visitors both during and after the fire is extinguished. Many of the resources attracting visitors to the Park, could be damaged or destroyed by a large fire. The decrease in visitors to the Park could adversely affect local businesses whose business is directly related to visitors of the Park. A large fire would likely not change the employment status of State Park or Division of Forestry staff. However, large fire would result in a large reduction in recreational opportunities in the Park. Parts of the Park may become closed or access may be restricted and recreational opportunities may be lost. Necessary repairs to the Marlette Lake Water System would likely result in short-term increases in staff of the Marlette Lake Water System to repair damages.

Alternative 2: Proposed Action

The proposed action would result in a short-term economic benefit, through the employment of the work crew performing the vegetation management activities. Since the functions and general resources of the Park would not change under the proposed action, no other economic impacts would be expected.

The recreational resources and opportunities at the Park would be temporarily affected during implementation of the proposed action. Some recreational opportunities may be affected and access restricted in areas where work crews would be working. This would occur in small and isolated areas and would not be an adverse affect. The proposed action would not result in any permanent change to the recreational resources in the Park.

4.6.2 Environmental Justice - EO 12898:

EO 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” directs federal agencies to ensure that their programs, policies, and activities do not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations. This EO also tasks federal agencies with ensuring that public notification regarding environmental issues is concise, understandable, and readily accessible.

Affected Environment

According to the U.S. Census Bureau, the action area is in Census Tract 32.01 within Washoe County, Nevada. Table 1 provides selected 2000 U.S. Census data from Census Tract 32.01, Washoe County, and the State of Nevada.

In 2000, this tract had a total population of 5,616 persons with only 3.6 percent minority population. The percentage of minority population is much less than that found in Washoe County or Nevada as a whole. The median family income in this tract was much higher at $78,433 than Washoe County ($45,815) or the State of Nevada ($44,581). The percentage of persons below the poverty level (4.6%) was lower than the county and the state. This tract had higher value homes ($256,500) than the other areas of comparison. This tract also showed a lower percentage of disabled individuals compared to the county and the state. This census tract could be characterized as an area with above average personal income and a small number of minorities.

Environmental Consequences

Alternative 1: No Action

Because no federal action would occur under the no action alternative, compliance with EO 12898 is not required.

Alternative 2: Proposed Action

As described above, the action area and the surrounding vicinity does not have a high proportion of low-income or minority persons. Any impacts associated with the proposed action would be unlikely have disproportionate effects on minority or low income populations. Further, no substantial adverse impacts to any populations are expected to occur as a result of the proposed action. All impacts from the proposed action would be short-term and temporary in nature. In general, the proposed action would benefit area residents by reducing the potential for wildfire in the Park, which could damage the historic and functional Marlette Lake Water System or could spread to communities near the Park. No disproportionately high and adverse human health or environmental effects upon minority or low-income populations would occur as a result of the proposed action. Therefore, the proposed action complies with EO 12898.

4.6.3 Public Health and Safety

Affected Environment

Although no permanent residents are present within the Park, populated areas occur around the perimeter of the park, including the town of Incline Village and Carson City. These areas are vulnerable to damage by wildfire, which can originate in or be transmitted through the action area. The action area also contains the Marlette Lake Water System, which provides 100% of the municipal water needs of Virginia City and 30 percent of the needs of Carson City. This system was partially damaged by the Waterfall fire of 2004, which temporarily interrupted service to hundreds of residents, and it remains vulnerable to wildfire.

Table 1.
Selected 2000 Census Data

	State of Nevada	Washoe County	Census Tract 32.01
2000 Population	1,998,257	339,486	5,616
RACE CHARACTERISTICS			
White (%)	75.2	80.4	96.4
Black (%)	6.8	2.1	0.3
Indian (%)	1.3	1.8	0.3
Asian (%)	4.5	4.3	1.1
Other (%)	8.4	8.2	.6
ETHNICITY			
Persons of Hispanic Origin (%)	19.7	16.6	2.8
AGE CHARACTERISTICS			
Below 25 years (%)	34.7	34.8	29.8
25 to 34 years (%)	15.3	14.5	25.2
35 to 54 years (%)	29.6	31.2	41.3
55 to 64 years (%)	9.6	9.1	13.3
65 to 84 years (%)	10.1	9.6	8.1
DISABILITY STATUS			
Population 21 to 64 years (%)	21.8	19.7	14.0
% Population 65 years and over (%)	40.6	38.4	24.4
INCOME CHARACTERISTICS			
Median Family Income (1999)	$44,581	$45,815	$78,433
Persons Below Poverty Level (%)	10.5	10.0	4.6
HOUSING CHARACTERISTICS			
Occupied Housing Units	827,457	132,084	2,071
Owner Occupied (%)	60.9	59.3	91.9
Renter Occupied (%)	39.1	40.7	8.1
OWNER OCCUPIED HOUSING VALUE			
Under $50,000 (%)	1.3	1.0	.5
$50,000-99,99 (%)	14.4	7.3	.4
$100,000-149,999 (%)	41.4	34.5	7.6
$150,000-199,999 (%)	22.3	26.3	18.7
$200,000-or higher (%)	20.5	31.0	72.7
YEAR STRUCTURE BUILT			
1990-2000 (%)	42.4	27.3	43.9
1980-1989 (%)	20.8	20.6	25.8
1970-1979 (%)	19.3	25.0	14.5
1969 or earlier (%)	17.5	27.1	15.8

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, nearby populations and the Marlette Lake Water System would continue to be vulnerable to wildfires that might originate in or be transmitted through the action area. A large wildfire in the Park could migrate into nearby communities and compromise public safety. Damages to the Marlette Lake Water System resulting from a large wildfire could affect consistency and quality of their water delivered by the system, which in turn could compromise public health.

Alternative 2: Proposed Action

Implementation of the proposed action would reduce the potential of wildfire damage to the Marlette Lake Water System and the potential of a wildfire migrating from the Park to nearby communities outside the action area. Thus, the proposed action would have beneficial effects to public health and safety.

4.7 LAND USE AND PLANNING

Affected Environment

The Park is one of 24 units within the Nevada Division of State Parks. The Division's mission and objective is the following:

"The Division of State Parks plans, develops and maintains a system of parks and recreation areas for the use and enjoyment of residents and visitors. The Division also preserves areas of scenic, historic and scientific significance in Nevada."

Land uses in the action area consist of backcountry forest, trails for foot and bike traffic, and park access roads. Some areas also contain structures related to the Hobart-Marlette Lake Water System, and historical anthropological resources occur in the action area. These resources have scenic, historic, and scientific significance and could be damaged or destroyed in a wildfire.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, no impacts to current land uses would occur.

Alternative 2: Proposed Action

Implementation of the proposed action would not modify existing land use in the Park. The action would support the stated mission and objectives of the Nevada Division of State Parks by mitigating a hazard to the scenic, historic, and scientific resources of the park.

4.8 TRANSPORTATION

Affected Environment

The action area would create 150-foot wide fuel breaks on both sides of several park access roads within the park boundaries. These roads are unpaved and serve as the access for several destinations within the park, such as Marlette Peak campground and one access to the Tahoe Rim Trail. These roads are generally permitted for use by hikers, cyclists, employees of the Marlette Lake Water System, State Park officials, and peoples owning inholdings within the Park. Vehicular use of these roads by the general public is not permitted.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, no impacts to transportation would occur.

Alternative 2: Proposed Action

Implementation of the proposed action may temporarily disrupt users of the roads along some routes within the park. However, these disruptions would only occur while work such as the felling of trees and burning of biomass is occurring. These disruptions would be of limited reach and short duration. The use of the Park roads would neither substantially nor permanently increase as a result of the proposed action. Therefore, the action would have no long-term effects on transportation.

4.9 NOISE

Affected Environment

Noise is federally regulated by the Noise Control Act of 1972. Although the Noise Control Act tasks the USEPA to prepare guidelines for acceptable ambient noise levels (USEPA 1971), it only charges those federal agencies that operate noise-producing facilities or equipment with implementing noise standards. By nature of its mission, FEMA does not have statutes defining noise.

Certain land uses are sensitive to noise. Noise-sensitive receptors are located at land uses associated with indoor and/or outdoor activities that may be subject to stress or significant interference from noise. Because the action areas are remote, the closest noise-sensitive receptors would be any visitors to the area that seek to enjoy the quiet and solitude of the backcountry. Noise sources in the action area are typically natural sounds such as bird calls and the wind rustling leaves.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, noise would remain at current levels.

Alternative 2: Proposed Action

Noise associated with the proposed action would include human voices, the felling of trees, and the operation of chainsaws and other mechanical and motorized hand tools.

All noise-producing equipment and vehicles using internal combustion engines would be equipped with properly operating mufflers and air inlet silencers, where appropriate, that meet or exceed original factory specification. This measure would assure that noise emissions from vehicles and other equipment are limited to the minimum feasible levels. Because no fixed sensitive receptors occur in the action area, and all action-related noise would be temporary during the 75-day per year work season, no adverse noise impacts would occur to sensitive receptors.

4.10 VISUAL RESOURCES

Affected Environment

The existing visual character of the action area includes a mix of topographic features and native vegetation communities along the sides of unpaved roads. The existing visual character is typical of undeveloped land within the region. Primary viewers consist of visitors to the Park.

Environmental Consequences

Alternative 1: No Action

Under the no action alternative, the existing wildfire hazard in the east slope of the Park would remain unmitigated. A large wildfire in the action area would result in substantial impacts to visual resources. Burned areas would eventually revegetate and would likely result in a similar visual quality as found under current conditions.

Alternative 2: Proposed Action

The proposed action would have a temporary negative effect on the visual character of the setting. During implementation of the proposed action, existing vegetation in the action area would be selectively removed, piled, cut, and burned.

The visual character of the setting would be permanently changed through the thinning the density of the forest, the removal of dead trees, and the clearing of understory brush. This would return the forest to a healthier state that more closely resembles native forest without human-managed fire suppression regimes, resulting in a long-term beneficial effect to visual resources.

4.11 CUMULATIVE IMPACTS

CEQ defines a cumulative impact as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions…" (40 CFR Part 1508.7).

The proposed action would be the first phase of a two-phase program for vegetation management and fuel reduction on the east slope of the Park. The second phase would involve similar activities as the proposed action, but would incorporate the remaining east slope areas of the Park. The desired resultant densities of vegetation after implementation of this second phase would likely be higher than compared to the proposed action – meaning that more vegetation would be left in the treated areas. The general goal of this two-phase program would be to create a healthy forest and the program is designed as a forest restoration action. Funding for this second phase has not been determined and the action is currently being planned.

Vegetation management activities have occurred or are being planned to occur to most forested areas in the Lake Tahoe Basin, west of the action area, under the multi-agency Environmental Improvement Program. Activities have been implemented utilizing mostly hand crews to remove excessive forest biomass through thinning, lop and scatter, chipping, fuel wood sales, and pile burning. Additional activities are being planned to include large-scale mechanical thinning, helicopter removal, and prescribed burning. Many of these activities would occur or have occurred on federal land or have been funded by federal agencies, which would subject the individual actions to compliance with the applicable federal environmental regulations, including Section 7 of the ESA, Section 106 of the NHPA, and NEPA. In general, the environmental impacts associated with all vegetation management actions occurring in the Park and in the other areas of the Lake Tahoe forest would be similar to the impacts addressed for the proposed action. These actions would result in short-term and minimal negative impacts and long-term beneficial impacts to the environment. Although the area (size) of different sites is additive, cumulative impacts of the proposed action in conjunction with these actions would not result in incrementally adverse impacts to the environment.

FEMA is the lead federal agency for conducting the NEPA compliance process for HMGP grants. It is the lead agency's responsibility to expedite the preparation and review of NEPA documents in a way that is responsive to the needs of the Nevada Division of State Parks while meeting the spirit and intent of NEPA and complying with all NEPA provisions.

State Parks and FEMA circulated the Draft EA for a 2-week public comment period. The public was notified of the Draft EA availability via the FEMA web site, direct mailings to known interested parties, and publication of a public notice in the *Nevada Appeal;* the *Reno Gazette Journal;* and the *North Lake Tahoe Bonanza* on June 19 and June 20, 2007. During the public comment period, FEMA accepted written comments on the Draft EA addressed to: FEMA Region IX Environmental Officer, 1111 Broadway Street, Suite 1200, Oakland, California 94607. FEMA received no comments on the Draft EA.

Nevada Fish and Wildlife Office (NFWO). 2006. Website located at http://www.fws.gov/nevada/protected%5Fspecies/inverts/invertebrates.html.

Natural Resources Conservation Service (NRCS). 2004. Soil Survey of Washoe County, Nevada.

U.S. Environmental Protection Agency (USEPA). 1971. Noise from Construction Equipment and Operations, Building Equipment and Home Appliances. Prepared under contract by Bolt, Beranek, and Newman, Boston.

U.S. Environmental Protection Agency (USEPA). 2007. USEPA Greenbook, "Currently Designated Nonattainment Areas for All Criteria Pollutants". <http://www.epa.gov/oar/oaqps/greenbk/ancl.html>, updated March 30, 2007 .

7.1 FEDERAL EMERGENCY MANAGEMENT AGENCY

- Alessandro Amaglio, Region IX Environmental Officer
- Juliette Hayes, Hazard Mitigation Specialist
- Clayton Pang, Hazard Mitigation Specialist

7.2 URS CORPORATION

- Geoff Thornton, Environmental Planner
- Nathan Taylor, Environmental Scientist
- Lorena Solorzano-Vincent, Senior Biologist
- Brian Hatoff, Senior Archaeologist
- Sarah McDaniel, Archaeologist
- Sarah Lewis, GIS Specialist
- Quentin Bliss, Senior Environmental Planner

Appendix A
Agency Responses

From: Kevin_Kritz@fws.gov [mailto:Kevin_Kritz@fws.gov]
Sent: Monday, March 12, 2007 4:42 PM
To: Amaglio, Alessandro
Subject: Your request for informal consultation for Lake Tahoe State Park project

Alessandro:

We received your letter, dated February 8, 2007, that requested informal consultation with U.S. Fish and Wildlife Service for bald eagle on a vegetation management project at Lake Tahoe State Park in Nevada (FEMA-1540-DR-NV, HMGP #1540-2-5). In your biological assessment on this project you had concluded that the proposed action was may affect, not likely to adversely affect for the bald eagle.

After reviewing your biological assessment we conclude that the project is actually a "no effect" for bald eagle and therefore no section 7 consultation is needed on this project for the species. We were able to conclude this for several reasons. First none of the proposed vegetation treatment areas are within 1 mile of either of the known bald eagle nest sites at Marlette Lake. Another reason we were able to conclude this was the avoidance and minimization measures listed in section 8.0 of your biological assessment. Finally in our telephone conversation of March 9 you had indicated that work would be completed with motorized vehicles and chainsaws, but that the project implementation did not include blasting, or use of helicopters, or other activities that could generate loud concussive type noise.

We thank you for your consideration of bald eagles in your project design and implementation. If you have any further questions about this let me know.

Kevin Kritz
Fish and Wildlife Biologist

U.S. Fish and Wildlife Service
Nevada Fish and Wildlife Office
1340 Financial Blvd. Suite #234
Reno, NV 89502-7147

phone: (775) 861-6325
fax: (775) 861-6301
kevin_kritz@fws.gov

From "Rebecca Palmer" <rlpalmer@clan.lib.nv.us> To Brian_Hatoff
Subject RE: Status of FEMA HMGP Project... cc Geoff_Thornton

Yes, we had no objections.

Rebecca Palmer
Archeologist, Review and Compliance Officer
State of Nevada Historic Preservation Office
100 North Stewart Street
Carson City NV 89701

Phone: 775-684-3443
Fax: 775-684-3442

From: Brian_Hatoff@URSCorp.com [mailto:Brian_Hatoff@URSCorp.com]
Sent: Monday, April 02, 2007 8:42 AM
To: Rebecca Palmer
Cc: Geoff_Thornton@URSCorp.com
Subject: Status of FEMA HMGP Project 1540-2-5

Rebecca:

Just following up on the FEMA report for NV Division of State Parks, Lake Tahoe State Park Vegetation Mgt. Project 1540-DR-NV, HMGP Project 1540-2-5. FEMA submitted this report on February 22, 2007. As noted in their transmittal letter per Stipulation VII.D.1.a of the PA, unless FEMA receives an objection form your office within 14 days of submittal it will assume it has satisfied its Section 106 responsibilities for the undertaking. As more than 30 days have elapsed I just wanted to follow up to confirm this is the case.

Hope all is well.

Thanks.

Brian

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