



## **INITIAL STUDY**

**2016-2018 Markleevillage Fuels Reduction Project**

**Prepared by**

**ALPINE COUNTY COMMUNITY DEVELOPMENT DEPARTMENT**

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# Chapter 1: Project Description

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1. **Project Name:** 2016-2018 Markleevillage Fuels Reduction Project
2. **Lead Agency:**  
Alpine County Community Development Department  
50 Diamond Valley Road  
Markleeville, CA 96120
3. **Contact Person:** Brian Peters
4. **Project Location:** Alpine County
5. **Project Sponsor/Applicant:** Alpine County
6. **General Plan Designation:** Open Space (OS)
7. **Zoning:** Agriculture (AG)
8. **Project Description:**

The 2016-2018 Markleevillage Fuels Reduction Project (Project) will treat 234 acres of a larger 1,200 acre plan. The project is located on the Carson Ranger District of the Humboldt-Toiyabe National Forest, approximately 1.5 mile west of the town of Markleeville, California. The Project would be implemented through a working partnership between Alpine County (County), Carson Ranger District of the U.S. Forest Service (USFS), Alpine Watershed Group (AWG) and the Alpine Fire Safe Council (AFSC).

This project is broken down in to two treatment areas. Treatment Area 1, also known as Pleasant Valley, contains 140 acres and will be treated between November 2016 and March 2017. Treatment Area 2, also known as Thornburg Canyon, contains 94 acres and will be treated between November 2017 and March 2018. In order to reduce forest fuel loading in the Project area, prescriptions will include the removal of heavy brush, small trees and under story fuels by mechanical mastication. Existing roads would be utilized to implement this project; no new roads would be constructed.

The purpose and need for this project includes:

- Provide for and maintain a reduced wild land fire hazard by reducing fuel loading and ladder fuels in forested and shrub areas around the Shay Creek, Markleevillage, Thornburg and Carson Ridge subdivisions, as well as Grover Hot Springs State Park.
- Improve watershed conditions and protect municipal watersheds from adverse effects of wild land fire on soil and water quality.
- Maintain conditions to reflect more natural or historical fire regimes.

- Provide and maintain defensible areas for firefighters to manage future wild land fires.

In 2010 the Humboldt-Toiyabe National Forest completed an Environmental Assessment for the Markleevillage Fuels Reduction Project and issued a Decision Notice/Finding of No Significant Impact. The Decision Notice/Finding of No Significant Impact includes “Decision Design Features” for the project that result in less than significant impacts on the environmental. The 234-acre project evaluated under this Initial Study incorporates by reference all of the Decision Design Features as documented in the Decision Notice/Finding of No Significant Impact. This document is attached as Appendix A to this Initial Study. The Environmental Assessment document is included as Appendix B.

This action responds to the goals and objectives outlined in the Toiyabe National Forest Land and Resource Management Plan (USDA 1986), as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (USDA 2004), and helps move the project area towards desired conditions described in those plans.

Alpine County is seeking grant funding for this work on National Forest System lands through the Sierra Nevada Conservancy’s Sierra Nevada Watershed Improvement Program. Because this is state funding, compliance with the California Environmental Quality Act (CEQA) is required. This Initial Study and proposed Mitigated Negative Declaration are intended to fully satisfy the CEQA requirements for this project.

## **9. Surrounding Land Uses and Setting:**

Alpine County is California’s least populated county. The estimated 2008 population is 1222 persons. Alpine County contains an area of approximately 740 square miles; 96% of which is public land. The County sits astride the Pacific crest south of the Lake Tahoe Basin. Elevation ranges from just under 5000 feet above sea level where the West Fork Carson River leaves the County northeast of Woodfords to 11,462 feet above sea level on Sonora Peak at the southern tip of the County near Sonora Pass. The eastern side of the County sits on the edge of the Great Basin along the eastern Sierra front. This area is characterized by valley, meadow, foothill and canyon areas of the eastern Sierra. To the west toward the Pacific crest, the landscape changes to the mountains and high meadows within the Sierra Nevada. Further west, the County extends to the Pacific crest and high elevations along the western slope of the Sierras.

The Markleevillage project area encompasses approximately 1,200 acres located on the Carson Ranger District of the Humboldt-Toiyabe National Forest approximately 1.5 miles west of the town of Markleeville, California and is bordered by the Markleevillage subdivision. The elevation of the project area ranges from 5,700 to 6,500 feet. The legal description for the project area is Township 10 North, Range 20 East, sections 19, 20, 29, 30, 31, and 32 and Township 10 North, Range 19 East, sections 23 and 24, Mount Diablo Meridian. (See Figure 1 – Project Location Map).

The Alpine County Community Fire Plan (Alpine Fire Safe Council 2007) recommends a more aggressive approach to fuels treatment and reduction on US

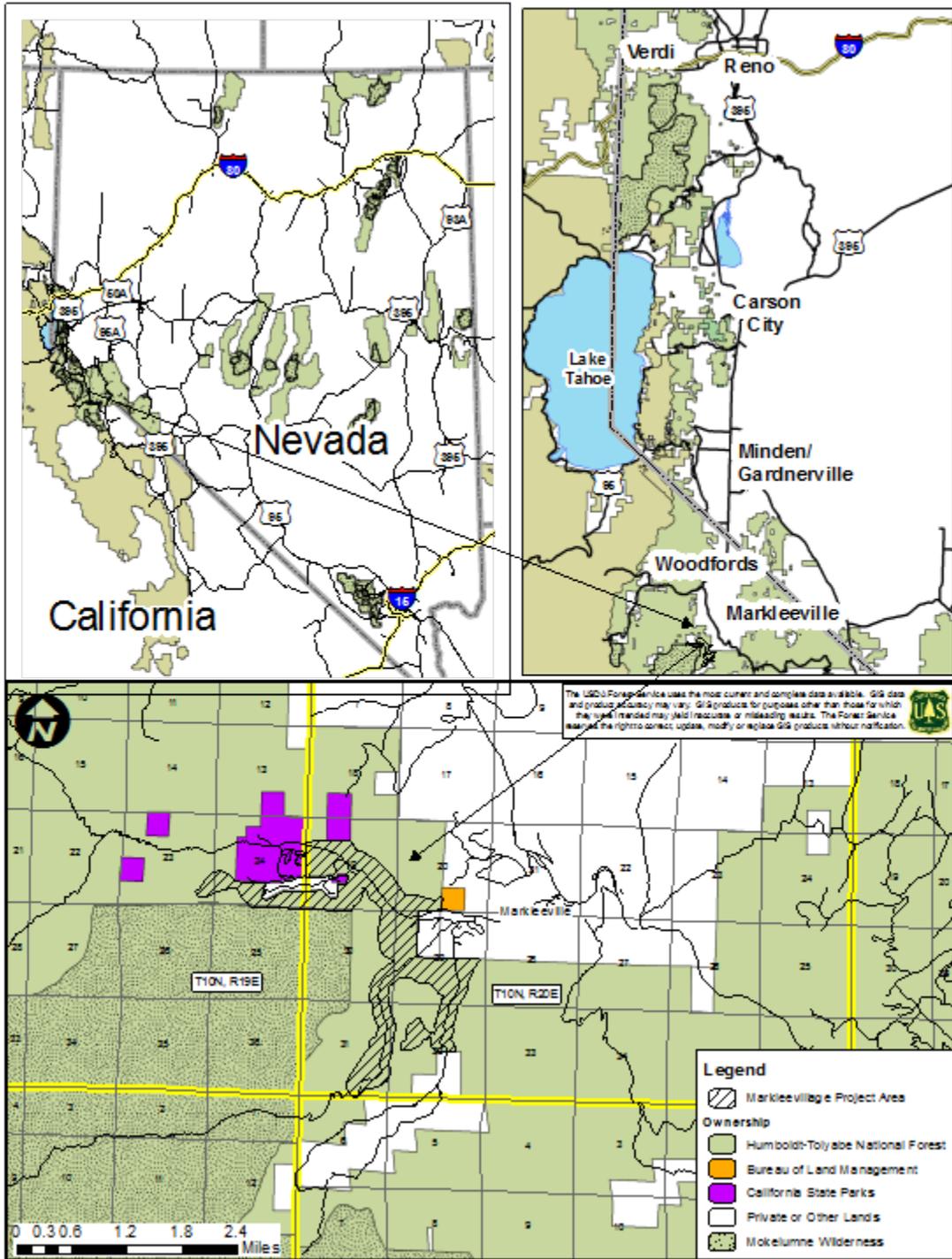
Forest Service lands. The project will be implemented through a working partnership between Alpine County (County), Carson Ranger District of the U.S. Forest Service (USFS), Alpine Watershed Group (AWG) and the Alpine Fire Safe Council (AFSC).

**10. Other Agency Approvals Required (e.g., permits, financing approval, or participation agreement.)**

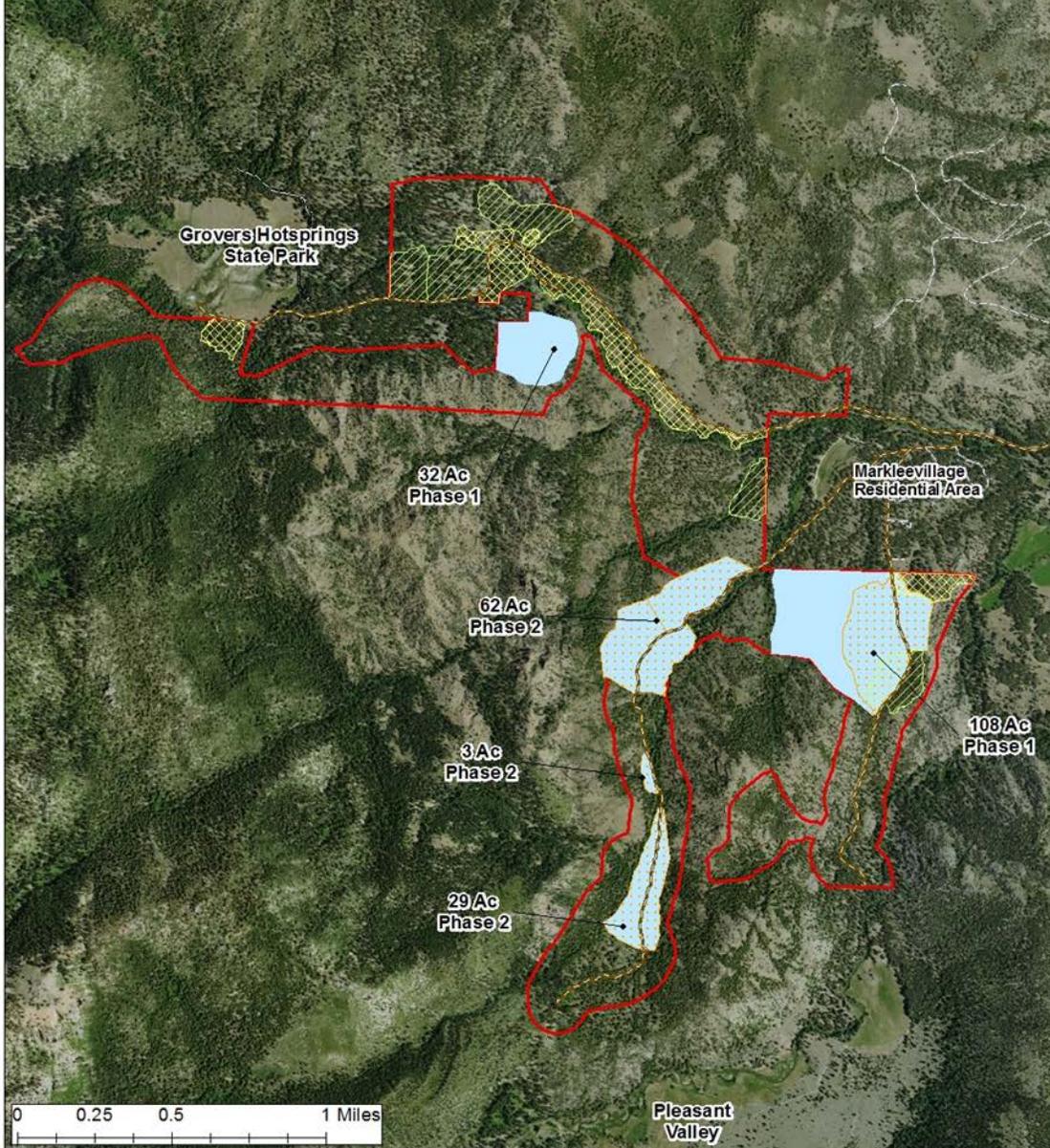
U.S. Forest Service Approvals: Pursuant to the National Environmental Policy Act (NEPA) an Environmental Assessment for the entire 1200-acre Markleevillage Fuels Reduction project area was completed in 2010. A Decision Notice/Finding of No Significant Impact was approved on September 30, 2010 by the Carson District Ranger, Humboldt-Toiyabe National Forest. No additional approvals for the U.S. Forest Service are required.

It is anticipated that Alpine County will enter into a Memorandum of Understanding or similar agreement with the Humboldt-Toiyabe National Forest to enable the Sierra Nevada Conservancy grant to fund work on National Forest System Lands.

Figure 1 - Project Location



# Markleevillage Fuels Treatments



**Legend**

- Completed Handwork - 78 Ac.
- Completed Understory Prescribed Fire - 79 Ac.
- Completed Mastication - 148 Ac.
- Proposed Mastication - SNC Grant 234 Ac.
- NEPA Analysis Boundary

Map data provided by Esri, DeLorme, Garmin, IGN, Intermap, iPC, NITD, Swire, GEBCO, USGS, AeroGRID, IGN, Esri, and the GIS User Community

## Chapter 2: Initial Study Checklist

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This chapter incorporates the Environmental Checklist contained in Appendix G of the CEQA Guidelines, including the CEQA Mandatory Findings of Significance. Each resource section discusses anticipated project-related impacts and presents the level of significance of the impacts. Where appropriate, mitigation measures are provided that would be used by the County to reduce potential impacts to a less-than-significant level. A discussion of the mandatory findings of significance is included at the end of this chapter.

Addressed in this section are the following 17 environmental categories:

- Aesthetics
- Agricultural and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gases
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Each of these issue areas was fully evaluated and one of the following four impact determinations was made:

- **No Impact:** No impact to the environment would occur as a result of implementing the proposed project.
- **Less-than-Significant Impact:** Implementation of the proposed project would not result in a substantial and adverse change to the environment and no mitigation is required.
- **Less than Significant With Mitigation Incorporated:** Implementation of the proposed project could result in a “significant” impact, but the impact can be reduced to a less-than-significant level with the incorporation of project-specific mitigation measures.
- **Potentially Significant Impact:** Implementation of the proposed project could result in an impact that has a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (CEQA Guidelines Section 15382).

## Environmental Impacts and Mitigation Measures

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>I. AESTHETICS — Would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

The U.S. Forest Service uses the Visual Quality Objective methodology to evaluate visual quality on National Forest System lands. A Visual Quality Objective (VQO) is a resource management objective that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO's are commonly used: maximum modification, modification, retention, partial retention and preservation.

- Maximum modification permits a dominant change to the original landscape, particularly in the foreground and middle-ground.
- Modification allows alterations to dominate the original characteristic landscape. However, alterations must borrow from natural line and form to such an extent and on such a scale that they are comparable to natural occurrences. The activities may be visually dominant but must conform to the natural character of the landscape in the fore- and middle-ground.
- Partial retention requires that alterations remain visually subordinate to the characteristic landscape. Repetition of the line, form, color and texture is important to ensure a blending with the dominant elements. Requires that activities be visually subordinate to the natural character of the landscape.
- Retention requires that management activities or alterations not be visually apparent. The goal is to repeat the line, form, color and texture of the characteristic landscape. Requires that the activities are not visually evident and the landscape retains a natural appearance.
- Preservation requires that no visible change occur in the landscape from forest development practices.

Distance zones used in VQO designations include: a) foreground – defined as within 0.5 miles of the observer; b) middle ground – defined as the distance between 0.5 and 3 miles; and c) background – defined as the distance beyond the middle ground.

The majority of the project area is viewed by forest visitors and vehicle occupants driving along Hot Springs, Spratt Creek or Pleasant Valley Roads. Portions of the project area can

also be viewed by local residents and visitors to the forest and Grover Hot Springs State Park. Some areas of the project may be visible as background or middle ground from Markleeville and other residential areas including Markleevillage, Shay Creek and Carson Ridge. The project area as viewed from these locations is not the dominant ridge line.

Based on the Toiyabe National Forest Land and Resource Management Plan VQO's (USDA 1986), approximately 57 percent of the project area is located within partial retention and 43 percent is located within modification. Because of the project's close proximity to roads, the project area is located within the fore and middle ground distance zones.

Numerous alterations occur within the project that deviate the area from a natural appearance. Natural alterations include fire scars and insect infestations. Human alterations include the obvious areas of planted trees (plantations), previous fuels reduction and forest health improvement projects, utility corridors, roads, trails, and a summer residence.

**Environmental Consequences**

Direct and Indirect Effects: Overall, the maintained reduction in fuels would enhance visual objectives in the area by maintaining the reduced risk of a stand replacing wild land fire. In areas where brush and small tree mastication or cutting occurs, some un-natural lines would be evident and adversely affect visual quality in the short term, but would have long term positive impacts. Feathering tree and brush densities from lighter to heavier treatments would assist with reducing adverse impacts. With no treatments, the risk of a wild land fire would increase and scenic integrity would be degraded due to charred, dead trees on the landscape.

Cumulative Effects: Past, present and reasonably foreseeable future actions that may have a cumulative effect on visuals include existing roads and their maintenance, hazardous fuels reduction projects on Forest Service and private lands, as well as private residences and developments adjacent to the Forest Service. Hazardous fuels reduction projects on the various jurisdictions may have short term adverse impacts, but would provide long term positive impacts due to the reduced risk of a high severity wild land fire. The proposed action would have a positive cumulative impact by maintaining a vegetated condition.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>II. AGRICULTURAL AND FOREST RESOURCES —</b>				
<b>Would the project:</b>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production as defined by Government Code Section 51104(g)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
d) Result in loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use, or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

The proposed project will maintain 234 acres of National Forest system land in its current use. There will be no impact on items a-e above.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>III. AIR QUALITY — Would the project:</b>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

All of the project area falls within Alpine County, California, which is within the Great Basin Unified Air Pollution Control District. The existing sources of particulate emissions within and/or near the Markleevillage project area include smoke from neighboring prescribed fire projects, residential wood stoves, and vehicular exhaust and dust. The project is expected to create negligible amounts of emissions from equipment used in the operation and negligible amounts of dust at the immediate location of the mechanized mastication operation, neither of which is expected to violate any air quality standard.

Use of prescribed fire to reduce hazardous fuels is included in the management prescriptions within the entire 1200-acre Markleevillage Fuels Treatment area. However, the 243 acres within the Project area will be treated by mechanized mastication and does

not include any prescribed burning. Therefore, it is not expected that the project will result in any impacts to air quality as described in a-e above.

In the absence of hazardous fuels reduction treatments, a high severity wild land fire may be likely. This would cause short term adverse air quality impacts from smoke emissions. The Angora Fire, which charred 3,100 acres near South Lake Tahoe in 2007, released an estimated 141,000 ton(e)s of greenhouse gases and the decay of the trees killed by the fire could bring the total emissions to 518,000 ton(e) s. This is equivalent to the greenhouse gas emissions generated annually by 105,500 cars (Malmshemer et al. 2008).

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>IV. BIOLOGICAL RESOURCES — Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

### Federally Listed Threatened or Endangered Species

The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, because there are none known to exist within the analysis area (EA Environmental Consequences - Wildlife/Sensitive Plants (pgs. 3-13 to 3-14)).

### Forest Service Sensitive Species

According to the biological evaluation written for this project, the project area provides potential habitat for the following wildlife and plant species listed as sensitive in Region Four: Northern goshawk, California spotted owl, flammulated owl, great gray owl, white-headed woodpecker, mountain quail, upswept, slender, and dainty moonwort.

Northern goshawks and spotted owls are both known to nest within and adjacent to Grover's Hot Springs State Park. Protected activity centers (PACs) have been designated for both species in the general area, protecting approximately 500 acres of nesting and fledging habitat. Surveys have been conducted annually for both species in this area since 2002. A single great gray owl was observed in 1979 by the State Park Ranger in the Grover's Hot Springs area.

### Management Indicator Species

Management indicator species (MIS) are identified in the Toiyabe National Forest Land and Resource Management Plan as representing a group of species having similar habitat requirements (USDA 1986). MIS are not federally listed as threatened, endangered, or Forest Service sensitive but have the potential to be affected by project activities. A review was conducted to determine: 1) if the project is within the range of any MIS, 2) if habitat is present within the proposed project area, and 3) if there are potential direct, indirect or cumulative effects on habitat components. MIS associated with habitats that may be affected by the project are analyzed below.

The following MIS were selected for analysis for the Markleeville Fuels Reduction project due to the presence of suitable habitat for these species that may be impacted by the project: Mule deer, American marten, yellow warbler, yellow-rumped warbler, hairy woodpecker, Williamson's sapsucker, northern goshawk, and macroinvertebrates.

The following species were not selected for further analysis due to absence of habitat or because the project would not directly or indirectly affect the habitat: Palmer's chipmunk, sage grouse, Lahontan cutthroat trout, and Paiute cutthroat trout.

Pursuant to the Humboldt-Toiyabe National Forest Decision Notice/Finding of No Significant Impact for the entire 1200 acre Markleevillage Fuels Reduction Project, the following Decision Design Features have already been incorporated into the project:

- Where available, three of the largest snags per acre will be retained.
- Large woody debris will be retained, at least 3 pieces per acre, greater than 12" dbh or the largest available.
- To minimize impacts to nesting migratory birds, a limited operating period will be imposed from April 1<sup>st</sup> to July 15<sup>th</sup>. During this period, no mastication/mowing of brush

or small trees will be allowed. Prior to prescribed burning activities, surveys for active nests will be completed and any active nests will be flagged and avoided.

- Any treatment within Northern goshawk and/or California spotted owl protected activity centers will be subject to a limited operating period and modified prescription based on Forest Plan standards and guidelines.
- Ground-based equipment would stay on established stream crossings

### California Listed Endangered Species

In 2013 the California Fish and Wildlife Commission named the Townsend's big-eared bat (*Corynorhinus townsendii*) a candidate for protection as an endangered species under the California Endangered Species Act (CESA). The species is found throughout most of the state, from the inland deserts to the cool, moist coastal redwood forests, in oak woodlands of the inner Coast Ranges and Sierra Nevada foothills, and lower to mid-elevation mixed coniferous-deciduous forests. Distribution is patchy, and strongly correlated with the availability of caves and cave-like roosting habitat, with population centers occurring in areas dominated by exposed, cavity forming rock and/or historic mining districts. Townsend's big-eared bat prefers open surfaces of caves or cave-like structures, such as subsurface hard rock mines, and large undisturbed spaces in buildings, bridges, and water diversion tunnels (CDFW 2013).

### **Environmental Consequences**

#### Federally Threatened, Endangered, and Proposed Species

The project area is not known to contain habitat for any threatened, endangered or proposed species. Therefore no further analysis will be conducted for these species.

#### Forest Service Sensitive Species

Northern goshawks and California spotted owls are known to nest in portions of the project area near Grover's Hot Springs State Park. Any treatment within the PACS would be subject to a limited operating period (LOP) and modified treatment prescription based on Sierra Nevada Forest Plan Amendment Standards and Guidelines (USDA 2004). Suitable habitat is also present for flammulated owls, white-headed woodpeckers, mountain quail, dainty moonwort, upswept moonwort, and slender moonwort. Specific plant surveys for moonworts have not been conducted in the project area and therefore their presence is unknown. However, moonworts are generally associated with wet, grassy areas which are not included in most of the project area. Implementation of the proposed project may impact the above listed species by disturbing breeding and foraging activities and/or disturbing habitat. However these impacts are expected to be minor, would only impact individuals, and would not lead to a trend toward Federal listing (biological evaluation, located in the project file at the Carson Ranger District). Furthermore, maintaining reduced fuel loading in these areas would help reduce the potential for a catastrophic wildfire and subsequent loss of wildlife habitat.

#### Management Indicator Species (MIS) and Migratory Birds

The project area contains habitat for mule deer, American marten, yellow warbler, yellow-rumped warbler, hairy woodpecker, Williamson's sapsucker, northern goshawks and macro-invertebrates. The project area also contains habitat for several migratory songbirds associated with conifer, shrub and riparian habitat types. The proposed project includes

thinning and mastication/mowing in areas that have mostly had past fuels treatments and therefore is expected to have limited and very minor impacts on MIS and/or migratory birds. Under the proposed action, mastication of brush and small diameter trees would occur only during the fall to avoid the migratory bird season and at least three snags per acre and down, large woody debris would be retained for wildlife habitat. Furthermore, maintaining reduced fuel loading in these areas would help reduce the potential for a catastrophic wildfire and subsequent loss of wildlife habitat. Therefore the proposed project would not affect habitat or lead to a downward trend in populations of the above listed MIS species (in project file at Carson Ranger District).

#### California Listed Endangered Species

Suitable habitat for the Townsend's big-eared bat is not likely to be present within the project area. There are no known caves or cave-like structures within the project area. There are no subsurface hard rock mines, buildings, bridges, or water diversion tunnels within the project area.

#### Other Concerns

There are no federally protected wetlands within the 234-acre project area. Policies in the Conservation Element of the Alpine County General Plan encourage protection of natural resources, including sensitive natural habitat areas and any threatened or endangered plant or animal species. Two streams are within the project area – Musser and Jarvis Creek and Spratt Creek. Riparian areas associated with these two streams could be affected by the mastication operation. The Decision Design Features provide adequate protection to these resources with the exception of additional measures needed to insure protection of riparian areas.

There are no local ordinances addressing biological resources that are applicable to the project. There are no habitat conservation plans, natural community conservation plans or other similar plans that apply to the project area.

#### **Mitigation Measures**

Bio-1: If a Townsend's big-eared bat is sighted in the project area during mastication operations, all vegetation disturbing activity shall be suspended within 200 feet of the sighting location. If a roosting tree of a Townsend's big-eared bat is discovered, all project operations will be suspended within a 200-foot radius buffer around the roost tree. The California Department of Fish and Wildlife shall be notified and site specific avoidance measures will be developed and implemented.

Bio-2: Mastication operations shall avoid riparian areas along Musser and Jarvis Creek and Spratt Creek within the project area. Personnel performing the work shall be instructed not to remove riparian vegetation.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>V. CULTURAL RESOURCES — Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

A total of ten known archaeological sites are present within the proposed project area. These sites range from prehistoric lithic scatters and bedrock mortar sites to historic logging camp sites and ditches. These sites remain unevaluated for inclusion into the National Register of Historic Places. These sites would be flagged and avoided in compliance with 36 CFR Part 800 of the National Historic Preservation Act. As part of the preparation of the Environmental Assessment under NEPA, the Carson Ranger District consulted with the Reno-Sparks Indian Colony and Washoe Tribe of Nevada and California during separate consultation meetings with the tribal chairpersons. The tribes support the Markleevillage fuels reduction project.

Pursuant to the Humboldt-Toiyabe National Forest Decision Notice/Finding of No Significant Impact for the entire 1200 acre Markleevillage Fuels Reduction Project, the following Decision Design Features have already been incorporated into the project:

- Archeological sites will be flagged and avoided during project implementation.
- Trees will be directionally felled away from identified archeological sites.
- No slash piles will occur in identified archeological sites, any slash within site boundaries will be removed by hand.

## Environmental Consequences

Direct and Indirect Effects: The proposed action has the potential to affect ten known archaeological sites. All ten of the sites have been identified within the areas of proposed ground disturbing activities. All of the sites would be flagged to delineate site boundaries prior to any ground disturbing activities. If previously unknown sites are encountered during project activities, operations in that area would stop and the district archaeologist would be contacted. Potential indirect effects include the increased potential for looting and vandalism to cultural resources because of more visibility.

The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. A heritage resource field survey was completed with a determination of “no effect” to historic properties and submitted to the California State Historic Preservation Office (SHPO). The implementation activities will be designed to avoid impacting the historic archaeological resources identified in the project areas.

Without treatments, the risk of a high severity stand replacing fire is higher; this would allow the continued exposure of important archaeological resources to damage and destruction by catastrophic wild land fires and may constitute an adverse effect on these resources.

There are no unique paleontological or geologic features within or immediately adjacent to the project area.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>VI. GEOLOGY AND SOILS — Would the project:</b>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

The Project site is located within the Sierra Nevada and is potentially affected by seismic sources located within the Sierra Nevada Mountains, the Sierra Nevada Foothills Fault System to the west, and the Sierra Nevada Frontal Fault System to the east. A trace fault bisects the project area on a north/south axis. (See Figure 2)

Ground shaking associated with seismic activity could be a source of geologic hazards to life or property at the site. However, there are no permanent structures or improvements will be made as part of the fuels reduction project. Impacts to people would be limited to potential exposure of work crews doing the fuels reduction work. This is considered a low risk, not different from exposure from the general use of public lands in the area.

Soils in the project area are derived from volcanic parent material. The East Carson River watershed is characterized by steep slopes and channels that are incised into volcanic material. These volcanic soils tend to be highly erosive. MACTEC Engineering used geology and slope gradient to assess relative erodability in the Upper Carson River watershed. The results show areas of high erosion potential along steeper portions of Pleasant Valley Creek and Spratt Creek, both tributaries to Markleeville Creek (MACTEC et al. 2004). However, much of the Markleeville Creek watershed is not within areas of high erosion potential.

Pursuant to the Humboldt-Toiyabe National Forest Decision Notice/Finding of No Significant Impact for the entire 1200 acre Markleevillage Fuels Reduction Project, the following Decision Design Features have already been incorporated into the project:

- Generally, ground based equipment will operate on slopes less than 35 percent (30 percent on decomposed granite soils), except for pitches of 150 feet or less. However, ground based operations may occur on slopes up to 50 percent; these will be designed on a unit by unit basis only after soil stability, soil rock content and the location of the steep slope in relation to the remaining portions of the treatment unit have been determined to be appropriate by the Forest Service.

Direct and Indirect Effects: The use of ground-based equipment for thinning trees and masticating brush, and the use of prescribed fire can have impacts on soil and water quality. The direct and indirect effects of these actions can include soil disturbance and erosion, soil compaction, increased runoff, and sediment delivery to stream channels. The risk of impacts to soil and water would be reduced through implementation of Best Management Practices (BMPs). The water and soils measures are designed to minimize soil disturbance and protect stream channels and riparian areas. These measures include equipment exclusion zones near streams and slope limitations for equipment.



	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>VII. GREENHOUSE GAS EMISSIONS — Would the Project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

The Project would not have greenhouse gas (GHG) emissions. The GHGs of primary concern derived from the Project include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Project activity would result in exhaust emissions from fuel combustion from heavy-duty diesel and gasoline-powered equipment and worker commuter trips. These sources of GHS are relatively minor and temporary, resulting in less than significant impacts. Reducing the risk of wild land fire by reducing hazardous fuels will also help avoid a potentially significant source of GHG.

In the absence of hazardous fuels reduction treatments, a high severity wild land fire may be likely. This would cause short term adverse air quality impacts from smoke emissions. The Angora Fire, which charred 3,100 acres near South Lake Tahoe in 2007, released an estimated 141,000 ton (e)s of greenhouse gases and the decay of the trees killed by the fire could bring the total emissions to 518,000 tons. This is equivalent to the greenhouse gas emissions generated annually by 105,500 cars (Malmsheimer et al. 2008).

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>VIII. HAZARDS AND HAZARDOUS MATERIALS — Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
school?				
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use compatibility plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Discussion

All hazardous materials are currently regulated and controlled by the California Environmental Protection Agency (CAEPA) in a manner that minimizes risks of spills or accidents. The Project could require the short-term use and storage of hazardous materials typically associated with heavy machinery, such as fuel and lubricants. Any hazardous materials used in operation of the Project, such as diesel for equipment will be handled in accordance with applicable federal, state, and local laws, including Cal-OSHA requirements and manufacturer's instructions.

The Project will reduce the potential for wild land fire by reducing fuel loading and ladder fuels in forested and shrub areas around the Shay Creek, Markleevillage, Thornburg and Carson Ridge subdivisions, as well as Grover Hot Springs State Park.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XI. HYDROLOGY AND WATER QUALITY — Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation of seiche, tsunamis, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

This project lies within the Pleasant Valley Creek and Hot Springs Creek hydrologic unit code (HUC) 6 watersheds. These two streams join to form Markleeville Creek, a tributary to the East Carson River. The Hot Springs Creek watershed includes Shay Creek, Musser Jarvis Creek, and Spratt Creek. Annual precipitation ranges from approximately 20 inches in Markleeville to 47 inches at the higher elevations. (WRCC 2010) Most of this precipitation comes as snow between October and May. This area also occasionally receives mid-winter rain on snow events and severe summer thunderstorms, which can result in heavy runoff. Flooding occurs on a regular basis. These events often result in landslide, debris flows and erosion of roads and stream banks (CWSD 2007).

The Alpine Watershed Group began to gather water quality data throughout the Upper Carson River Watershed in 2004. Citizen monitors have collected data quarterly on eight sites, including sampling stations on Hot Springs Creek in Grover Hot Springs Campground and Markleeville Creek below the project area. Monitoring parameters include water temperature, pH, conductivity, dissolved oxygen (DO), turbidity and E Coli. The data

analysis for all sites indicates that the water chemistry parameters (temperature, pH, conductivity & DO) are within normal ranges for cold mountain streams. Turbidity values generally fell within acceptable ranges for aquatic life tolerances with the exception of two recordings during higher flows. E coli values, with the exception of Millberry Creek, did not exceed water quality standards set by the Lahontan Water Quality Control Board (Katopthis 2008). The East Fork of the Carson River in California, Markleeville Creek, and the tributaries within the project area are not currently on the California 303(d) List of Water Quality Limited Segments (LRWQCB 2006).

A stream corridor condition assessment for the Upper Carson River watershed was completed in 2004. This study was conducted by MACTEC Engineering for the Alpine Watershed Group and the Sierra Nevada Alliance (MACTEC et al. 2004). The project goal was to assess the condition of and provide information for future restoration efforts on the Carson River and its tributaries. Markleeville Creek was included in this study. The study concluded that the reach of Markleeville Creek above the town of Markleeville was impacted by a water diversion and the lack of large woody material. The reach of Markleeville/Hot Springs Creek near Grover Hot Springs is in good condition (MACTEC et al. 2004).

Pursuant to the Humboldt-Toiyabe National Forest Decision Notice/Finding of No Significant Impact for the entire 1200 acre Markleevillage Fuels Reduction Project, the following Decision Design Features have already been incorporated into the project:

- Native seed mix will be used during project rehabilitation efforts.
- Generally, ground based equipment will operate on slopes less than 35 percent (30 percent on decomposed granite soils), except for pitches of 150 feet or less. However, ground based operations may occur on slopes up to 50 percent; these will be designed on a unit by unit basis only after soil stability, soil rock content and the location of the steep slope in relation to the remaining portions of the treatment unit have been determined to be appropriate by the Forest Service.
- No trees will be removed where they provide stream bank stability.
- Projects will comply with conditions in Lahontan Water Quality Control Board timber harvest waivers.
- Ground-based equipment will stay on established stream crossings

#### Environmental Consequences

Direct and Indirect Effects: The use of ground-based equipment for thinning trees and masticating brush can have impacts on soil and water quality. The direct and indirect effects of these actions can include soil disturbance and erosion, soil compaction, increased runoff, and sediment delivery to stream channels. The risk of impacts to soil and water would be reduced through implementation of Best Management Practices (BMPs). The water and soils measures are designed to minimize soil disturbance and protect stream channels and riparian areas. These measures include equipment exclusion zones near streams and slope limitations for equipment.

The effects to soil and water from masticating are minimal because the equipment operates over vegetation and leaves behind a layer of mulch. UC Davis and Integrated Environmental Restoration Services conducted a study on the West Shore of Lake Tahoe in 2004 to determine the effects of masticating equipment on soil compaction, runoff and erosion. The results of this study indicate that erosion effects from mastication are slight to insignificant when a layer of woodchip mulch is left on the ground surface (Hatchett et al. 2006).

If no action is taken it is assumed that all or part of this area would burn as a wildfire. High severity wildfires can remove much of the vegetation, along with duff and litter from the forest floor. Wildfires are usually more severe than prescribed fire and, as a result, they are more likely to produce significant effects on soil and water quality. Following wildfires, flood peak flows can increase substantially, affecting stream physical conditions, aquatic habitat and human health and safety (USDA 2005). Soil erosion would likely increase, along with streambank erosion from increased flows.

**Cumulative Effects:** Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions. Past, present and future activities and natural disturbances in a watershed can contribute to sediment delivery to streams, resulting in degradation of water quality and aquatic habitat. Cumulative effects were analyzed using the equivalent roaded area (ERA) method developed by the U.S. Forest Service Region 5 (USDA 1990). When utilizing the ERA model, all landscape disturbances are evaluated in comparison to a completely impervious, or roaded, surface. Road surfaces are considered to represent maximum hydrologic disturbance and rainfall-runoff potential.

The present actions assessed in this cumulative watershed effects (CWE) analysis include prescribed burning, brush mastication, and roads and trails. In addition, residential areas within the watersheds and the Grover Hot Springs State Park campground were also considered. These components are assigned disturbance coefficients that represent a typical ratio of their hydrologic impact compared to the same roaded area. Past actions included in the CWE analysis were previous timber sales and mastication projects. The ERA model includes a recovery factor over time. Burned areas typically recover faster than areas of timber harvest. The Plumas National Forest has used a 25 year recovery for timber harvest and five years for wildfire (USDA 2008).

Two sub watersheds were delineated for analysis of cumulative watershed effects. The Spratt Creek sub watershed includes Spratt Creek, Musser and Jarvis Creek, and short reach of Hot Springs Creek and an unnamed intermittent tributary north of Hot Springs Creek. This sub watershed is 5,400 acres. The Hot Springs Creek sub watershed includes Shay Creek, Sawmill Creek, Buck Creek, a reach of Hot Springs Creek and several unnamed intermittent tributaries. A small part of the project area along Pleasant Valley Creek was not included in this CWE analysis.

**Threshold of Concern:** Watershed sensitivity is an estimate of a watershed's natural ability to tolerate land use impacts without increasing the risk of cumulative impacts to unacceptably high levels. Measures used to evaluate watershed sensitivity for individual

watersheds included the potential for 1) soil erosion, 2) high intensity and/or long duration precipitation events, including rain-on-snow, 3) landslides and debris flows and 4) channel erosion within alluvial stream channels (USDA 1990).

Watershed response to elevated levels of ground disturbance may begin to negatively impact downstream channel stability and water quality. To describe the level of disturbance when such impacts may begin to occur, upper estimates of watershed "tolerance" to land use may be established based on basin-specific experience, comparison with similar basins, and modeling of watershed response. These indices of tolerable levels of disturbance are called thresholds of concern (TOC). The tolerance of a watershed is used to determine acceptable levels of disturbance and prescribe mitigation measures to prevent detrimental responses. The TOC does not represent an exact level of disturbance above which cumulative watershed effects would occur. Rather, it serves as a "yellow flag" indicator of increased risk of adverse cumulative effects occurring within a watershed. Thresholds of concern have not been determined for watersheds on the Carson Ranger District. However, National Forests in the Sierra's generally use TOC values that range from 10 to 14 percent of a watershed (USDA 1990).

The results of the CWE analysis indicate that the ERA for both watersheds is approximately four percent. This ERA is well below the threshold of 10 percent described above. Based on this analysis it can be assumed that the cumulative effects from this project would be minimal.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>X. LAND USE AND PLANNING — Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural communities' conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

The proposed project will not physically divide an established community.

The Project area is designated as Open Space (OS) in the Alpine County General Plan. The Open Space land use designation is intended to protect and promote wise use of the County's natural resources. Types of land uses allowed on (OS) designated lands should be limited to uses that would be integrally related to the wise use and protection of natural resources including, but not limited to, the protection or development of mineral resources, the growing or harvesting of forest products, ranch or farm type agricultural production,

protection of important wildlife and aquatic habitats, preservation of significant view corridors and dispersed recreation such as hunting, fishing, hiking, cross-country skiing, and camping

The Project area is zoned Agriculture (AG). The purpose of the AG agriculture zone is to preserve lands best suited for agricultural use from the encroachment of incompatible uses. Agricultural use includes the growing or harvesting of forest products and the associated necessary forest management activities.

The Project does not conflict with the Alpine County General Plan or the Alpine County Zoning Ordinance.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XI. MINERAL RESOURCES — Would the project:</b>				
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

**The proposed project does not include any elements that would result in impacts described in a and b above. There are no mapped or known mineral resources within the project area. Further, the Project activities will not preclude future discovery and/or utilization of mineral resources.**

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XII. NOISE — Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
levels in the project vicinity above levels existing without the project?				
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use compatibility plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

The evaluation of noise impacts is based on typical noise emission levels from chainsaws, a chipper, and a tractor-mounted masticator. Noise levels at receptors farther than approximately 1,000 feet from project activities are expected to be below 65 A-weighted decibels (dBA). Receptors less than approximately 1000 feet from project activities may experience temporary sound levels between 65 and 75 dBA. Noise associated with project activities would move throughout the project area, and no single noise-sensitive receptor would be subject to project-related noise levels above 75 dBA for more than a few hours at a time for a few days.

Alpine County Code Section 18.68.090 contains noise standards for certain zoning districts within the County. The entirety of the project area is zoned Agriculture (AG). There are no noise standards applicable to the AG zone. Portions of the project area are adjacent to developed residential areas. The noise standard within the residential areas is 65dBA. These areas will be subject to the project related noise levels between 65 and 75 dBA as described above. The County’s noise regulations allow exceedance of noise standards for activities that are temporary or short term duration.

**Mitigation Measures**

Noise-1: Fuel reduction activities will be limited to occur between 7am and 7pm Monday through Friday.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XIII. POPULATION AND HOUSING — Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

The proposed project does not include any elements that would result in impacts described in a - c above.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XIV. PUBLIC SERVICES — Would the project:</b>				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

The proposed project does not include any elements that would result in impacts described in a - c above.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XV. RECREATION — Would the project:</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Discussion**

The project area is located adjacent to Markleeville, California, a popular summer and winter recreational area. Recreation uses in the project area include opportunities such as dispersed camping, picnicking, hiking, horseback riding, off highway vehicle use, cross-country skiing, snowshoeing and snowmobiling.

There is approximately 500 feet of one designated trail in the project area. This trail is located at the end of Spratt Creek road and leads into Thornburg Canyon and the Mokelumne Wilderness area. Informal “user-defined” trails are also present within the project area. These trails generally connect to the adjacent Markleevillage subdivision. The project is also adjacent to Grover Hot Springs State Park which includes a campground and hot springs.

**Environmental Consequences**

**Direct/Indirect Effects:** Direct effects from implementing this project may include temporary closures of dispersed camping areas, and special use permits and group events during project implementation activities. Signing of roads for public safety during project operations would minimize direct effects.

With no action, the risk of a catastrophic wild land fire is increased. Recreational activities would be less desirable if the forest and shrub characteristics of the area were burned down.

The proposed action would help to maintain current recreation opportunities. Existing roads would continue to be open for non-motorized and motorized activities, and trails would continue to be open to hiking and horseback riding. This project would reduce the risk of catastrophic fire that could damage or destroy the forested character that attracts people to this area for the many recreational opportunities.

**Cumulative Effects:** There are no foreseen cumulative impacts to recreation under the proposed action.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XVI. TRANSPORTATION/TRAFFIC — Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

Routes used to access the project area and removal of fuel wood would include Hot Springs Road, Pleasant Valley Road and Spratt Creek Road. Traffic volume associated with the project will be very limited and will include transport of the heavy equipment to the project area, and daily commute trips by workers on the project. Average daily traffic volume is not expected to measurably increase. The proposed project does not include any elements that would result in impacts described in a - f above.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XVII. UTILITIES AND SERVICE SYSTEMS — Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
facilities, the construction of which could cause significant environmental effects?				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion

The proposed project does not include any elements that would result in impacts described in a - g above.

	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
<b>XVIII. MANDATORY FINDINGS OF SIGNIFICANCE</b> (To be filled out by Lead Agency if required)				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **Discussion**

The project will not have any of the impacts described in a or b above. Cumulative impacts related to aesthetics and hydrology are discussed in the respective sections above. Cumulative impacts will be less than significant.

## **Summary of Mitigation Measures**

In 2010 the Humboldt-Toiyabe National Forest completed an Environmental Assessment for the Markleevillage Fuels Reduction Project and issued a Decision Notice/Finding of No Significant Impact. The Decision Notice/Finding of No Significant Impact includes “Decision Design Features” for the project that result in less than significant impacts on the environmental. The 234-acre project evaluated under this Initial Study incorporates by reference all of the Decision Design Features as documented in the Decision Notice/Finding of No Significant Impact. Since these Decision Design Features have been incorporated into the project, it is not necessary to identify them as additional mitigation measures in this Initial Study. This Initial Study identifies the following mitigation measure that will be added to the project:

Bio-1: If a Townsend’s big-eared bat is sighted in the project area during mastication operations, all vegetation disturbing activity shall be suspended within 200 feet of the sighting location. If a roosting tree of a Townsend’s big-eared bat is discovered, all project operations will be suspended within a 200-foot radius buffer around the roost tree. The California Department of Fish and Wildlife shall be notified and site specific avoidance measures will be developed and implemented.

Bio-2: Mastication operations shall avoid riparian areas along Musser and Jarvis Creek and Spratt Creek within the project area. Personnel performing the work shall be instructed not to remove riparian vegetation.

Noise-1: Fuel reduction activities will be limited to occur between 7am and 7pm Monday through Friday.

# Determination

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This Initial Study has determined that in the absence of mitigation the proposed project could have the potential to result in significant impacts associated with the factors checked below. Mitigation measures are identified to reduce potentially significant impacts to less-than-significant levels.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Land Use/Planning
<input type="checkbox"/>	Agricultural and Forest Resources	<input type="checkbox"/>	Mineral Resources
<input type="checkbox"/>	Air Quality	<input checked="" type="checkbox"/>	Noise
<input checked="" type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Population and Housing
<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Public Services
<input type="checkbox"/>	Geology and Soils	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Greenhouse Gases	<input type="checkbox"/>	Transportation/Traffic
<input type="checkbox"/>	Hazards and Hazardous Materials	<input type="checkbox"/>	Utilities and Service Systems
<input type="checkbox"/>	Hydrology and Water Quality	<input type="checkbox"/>	Mandatory Findings of Significance

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a “Potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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Signature

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Date

## **References Cited**

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**Appendix A:**

**Decision Notice/Finding of No Significant Impact – Humboldt-Toiyabe National Forest**



United States  
Department of  
Agriculture

Forest Service  
Intermountain  
Region

September 30, 2010

# Decision Notice/Finding of No Significant Impact

## Markleevillage Fuels Reduction Project

Humboldt-Toiyabe National Forest  
Carson Ranger District  
Alpine County, California



A Healthy Forest Restoration Act Project

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*Markleevillage Fuels Reduction Project  
Decision Notice/Finding of No Significant Impact – September 2010*

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## DECISION AND REASONS FOR THE DECISION

### INTRODUCTION

In August 2010, an Interdisciplinary Team completed the Markleevillage Fuels Reduction Project Environmental Assessment (EA). The EA disclosed the direct, indirect, and cumulative environmental impacts that will result from the proposed action. This EA is available on the Humboldt-Toiyabe National Forest website at: [www.fs.fed.us/r4/htnf/projects/#carson](http://www.fs.fed.us/r4/htnf/projects/#carson).

The Markleevillage Fuels Reduction Project is approximately 1,200 acres in size and is located on the Carson Ranger District of the Humboldt-Toiyabe National Forest. The entire project is within the wildland urban interface (WUI) and within 1 ½ miles of an at-risk community.

The legal description for the project area is Township 10 North, Range 20 East, sections 19, 20, 29, 30, 31, and 32 and Township 10 North, Range 19 East, sections 23 and 24, Mount Diablo Meridian. A vicinity map of the project is located in Appendix A, figure 1.

### PURPOSE AND NEED

The purpose and need for this project includes:

- Provide for and maintain a reduced wildland fire hazard by reducing fuel loading and ladder fuels in forested and shrub areas around Markleeville, California, including the subdivisions of Shay Creek, Markleevillage, Thornburg and Carson Ridge, as well as Grover Hot Springs State Park.
- Improve watershed conditions and protect municipal watersheds from adverse effects of wildland fire on soil and water quality.
- Maintain conditions to reflect more natural or historical fire regimes.
- Provide and maintain defensible areas for firefighters to manage future wildland fires.

### DECISION

I have decided to implement the proposed action as described in the EA. Minor changes or additions have been made to some design features from the EA, these include:

#### Fire/Fuels

- All Federal, State and local regulations pertaining to prescribed burning will be followed. A Region 4 approved burn plan will be completed and followed. A smoke permit will be obtained prior to implementing prescribed burning.

#### Wildlife/Sensitive Plants

- To minimize impacts to nesting migratory birds, a limited operating period will be imposed from April 1<sup>st</sup> to July 15<sup>th</sup>. During this period, no mastication/mowing of brush or small trees will be allowed. Prior to prescribed burning activities, surveys for active nests will be completed and any active nests will be flagged and avoided.

## **Noxious Weeds**

- Any new infestations of noxious weeds will be documented and locations marked. New sites will be treated by hand pulling or lopping and bagging.

The Forest Service proposes to meet the purpose and need within the Markleevillage Project area by implementing the following proposed actions:

Existing roads will be utilized to implement this project; no new roads will be constructed. This alternative is the non-commercial funding alternative required by the November 3, 2009 Remedy Ruling by Judge England regarding the 2004 Framework (Sierra Nevada Forest Plan Amendment). This is a non-commercial alternative because the only material removed will be for fuelwood. All treatments will be accomplished using a mix of Forest Service crews and permits or contracts. Slash resulting from the proposed action will be a) shredded in the masticated areas; b) lopped and scattered in areas proposed for underburning; c) piled and burned in areas where underburning is not feasible, but pile burning is; and/or d) lopped and scattered and left on site in inaccessible areas where pile burning is not feasible and a long-term increased fuels hazard isn't created. A map of the proposed action is located in Appendix A, figure 2.

**Conifer Thinning.** On approximately 750 acres trees will be thinned from below, favoring fir species, mistletoe infected and insect infested trees for removal. This treatment will involve thinning from below by removing generally smaller trees that are most susceptible to wildfire and leaving the dominant tallest trees that are less susceptible to fire. On most of the 750 acres, tree thinning will be incidental and consist of removing insect infested trees, understory trees and/or minor thinning. Most of the trees removed will be smaller diameter trees, though trees up to 24" dbh may be removed, especially if successfully attacked by bark beetles or mistletoe infected. Signs of successful bark beetle attack include boring dust around  $\geq 50$  percent of the circumference of the base of the tree and/or pitch tubes with boring dust and frass in the resin.

Trees will be removed utilizing fuelwood permits and contracts, hand crews and mastication equipment.

Generally trees in the suppressed and intermediate crown classes will be removed, though some trees in the co-dominant crown class will be removed. The majority of trees targeted for removal will be the smaller diameter trees that are competing with mature overstory trees or with more vigorous trees in the same canopy layers. Generally the largest and most vigorous trees will be retained; the exception to this will be in areas successfully infested with bark beetles.

**Brush and Incidental Small Tree Thinning.** Shrub and small trees densities will be reduced throughout the 1,200 acre project area. Treatment methods will include mastication/mowing, hand cutting, piling, and/or chipping.

**Prescribed Fire.** On approximately 1,200 acres, prescribed fire may be utilized to reduce shrub and small diameter trees densities and reduce fuels. Prescribed fire will include underburning and pile burning.

**Maintenance.** Maintenance will be required in the treated areas to maintain more open conditions. Without maintenance conifer and brush regeneration will eventually put the stand at a risk from insect, disease, high severity wildland fire and competition related mortality. Maintenance may include mastication, piling and burning, additional thinning, or underburning.

## **DECISION DESIGN FEATURES**

### **Fire/Fuels**

- All Federal, State and local regulations pertaining to prescribed burning will be followed. A Region 4 approved burn plan will be completed and followed. A smoke permit will be obtained prior to implementing prescribed burning.
- A news release will be distributed to media contacts and the general public contacted prior to the burning season to notify the local community of the prescribed burning.

### **Archeology**

- Archeological sites will be flagged and avoided during project implementation.
- Trees will be directionally felled away from identified archeological sites.
- No slash piles will occur in identified archeological sites, any slash within site boundaries will be removed by hand.

### **Wildlife/Sensitive Plants**

- Where available, three of the largest snags per acre will be retained.
- Large woody debris will be retained, at least 3 pieces per acre, greater than 12” dbh or the largest available.
- To minimize impacts to nesting migratory birds, a limited operating period will be imposed from April 1<sup>st</sup> to July 15<sup>th</sup>. During this period, no mastication/mowing of brush or small trees will be allowed. Prior to prescribed burning activities, surveys for active nests will be completed and any active nests will be flagged and avoided.
- Any treatment within Northern goshawk and/or California spotted owl protected activity centers will be subject to a limited operating period and modified prescription based on Forest Plan standards and guidelines.

### **Soils/Hydrology**

- Native seed mix will be used during project rehabilitation efforts.
- Generally, ground based equipment will operate on slopes less than 35 percent (30 percent on decomposed granite soils), except for pitches of 150 feet or less. However, ground based operations may occur on slopes up to 50 percent; these will be designed on a unit by unit basis only after soil stability, soil rock content and the location of the steep slope in relation to the remaining portions of the treatment unit have been determined to be appropriate by the Forest Service.
- No trees will be removed where they provide stream bank stability.
- Projects will comply with conditions in Lahontan Water Quality Control Board timber harvest waivers.
- Pile burning will be minimized in riparian conservation areas.
- Ground-based equipment will stay on established stream crossings

**Air Quality**

- Prescribed fires are subject to permitting by the Great Basin Unified Air Pollution Control District (GBUAPCD). For each prescribed fire, the Forest Service will have contingency plans identified to reduce smoke emissions. Contingency plans shall be implemented when the GBUAPCD determines that acceptance limits of smoke are exceeded, and/or the Forest Service anticipates that the prescription for a prescribed fire will be exceeded.

**Noxious Weeds**

- To remove any soil and debris that may harbor noxious weed seed, contract equipment will be washed and inspected prior to entering National Forest System lands.
- When seeding is required, seed will be tested as weed free.
- Any new infestations of noxious weeds will be documented and locations marked. New sites will be treated by hand pulling or lopping and bagging.

**Vegetation**

- Retain all trees greater than 24” dbh, except where removal is necessary for operational safety.

**MONITORING**

This project will use an adaptive management approach, where the treatments are implemented, monitored and adapted. Monitoring will determine if the desired conditions are being met. Adjustments to project prescriptions based on monitoring within the general scope of the proposed action analyzed in this document will not need a new decision. Any adjustments outside the scope of the proposed action will likely require a new decision. Monitoring actions will include those discussed in Table 1.

**Table 1.** Monitoring Actions.

<b>Action</b>	<b>Method</b>	<b>Timing</b>
Evaluate the effectiveness of tree and fuels treatments in meeting resource objectives	Photo points	Pre and post project activities
Evaluate burning conditions, fuel consumption and fire effectiveness	Observations during and after burns	During and post burn
Ensure archeological sites are not impacted	Field visits	Pre, during and post activity
Ensure permits and contracts are in compliance.	Field visits and inspections	During and post activities
Meet the California Regional Water Quality Control Board Lahontan Region conditional waiver of waste discharge requirements.	Submit appropriate timber harvest waiver	Pre and post activities

## **DECISION RATIONALE**

I am selecting the Proposed Action at this time because:

- I find the project is consistent with the Toiyabe National Forest Land and Resource Management Plan, as amended by the Sierra Nevada Forest Plan Amendment.
- This decision is consistent with the National Forest Management Act of 1976, and the Healthy Forest Restoration Act of 2003.
- Internal issues were considered during the development of the Proposed Action and were attenuated through a combination of project design and the incorporation of design features. Scoping and collaborative comments were analyzed to identify both issues and project alternatives that should be considered. Issues were used to frame the analysis and proposed action in the EA.
- Implementation of the Proposed Action will reduce and maintain a reduced wildland fire hazard by reducing fuel loading and ladder fuels.
- The selected Proposed Action meets the purpose and need by improving watershed conditions and protecting municipal watersheds from adverse effects of uncharacteristic wildland fire on soil and water quality by reducing the risk of loss from uncharacteristic stand replacing wildland fires.
- The selected Proposed Action meets the purpose and need by reflecting more natural or historical fire regimes by reducing trees per acre and vegetation densities, and introduction of prescribed fire.
- The selected Proposed Action meets the purpose and need by providing defensible areas for firefighters to control and/or suppress future wildland fires.

## **OTHER ALTERNATIVES CONSIDERED**

The purpose of the HFRA is in part to: (A) reduce wildfire risk to communities, municipal water supplies, and other at-risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects; (B) enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape and; (C) protect, restore, and enhance forest ecosystem components, promoting the recovery of threatened and endangered species to improve biological diversity and enhance productivity and carbon sequestration (HR 1904).

The alternative analysis process for this project was completed under section 104 (d) of HFRA because the project is located on Federal lands within a WUI area within 1 ½ miles of Markleeville, an at-risk community. Section 104 (d) (2) Proposed Agency Action...if an authorized hazardous fuel reduction project proposed to be conducted in the wildland-urban interface is located no further than 1 ½ miles from the boundary of an at-risk community , the Secretary is not required to study, develop, or describe any alternative to the proposed agency action in the environmental assessment or environmental impact statement prepared pursuant to section 102 (2) or the National Environment Policy Act of 1969 (42 U.S.C. 4332(2)).

Pursuant to Section 104 (d) (2) of the Healthy Forest Restoration Act of 2003, no other alternatives were developed. However, the consequences of taking no action were considered in the EA. No additional alternatives were proposed during collaboration or scoping.

## **PUBLIC INVOLVEMENT AND COLLABORATION**

The Forest Service used multiple methods to develop the proposed action and determine the major issues that would affect the decision on this project. The Forest Service involved members of the public, interested private groups, and State, County and local agencies, including:

Collaboration with the Alpine Fire Safe Council.

Publication of a Notice of Proposed Action/Scoping Notice in the Reno Gazette Journal on February 23, 2010.

Listing of the project in the Schedule of Proposed Actions (SOPA), published quarterly by the Humboldt-Toiyabe National beginning in January 2010.

Holding a public open house collaboration meeting at Turtle Rock Park in Markleeville California to present, review and revise the project on March 10<sup>th</sup>, 2010.

Mailing of the Notice of Proposed Action/Scoping Notice to 195 interested individuals, groups and adjacent landowners on February 23, 2010.

Mailing the Markleevillage Fuels Reduction Project EA to those who commented on the project on August 19, 2010. Mailing a notification the EA was available to 183 individuals, groups, and adjacent landowners on August 19, 2010.

Publication of a Pre-decisional Administrative Review Notice in the Reno Gazette Journal on August 18, 2010.

## FINDING OF NO SIGNIFICANT IMPACT

The Markleevillage Fuels Reduction Project Finding of No Significant Impact incorporates by reference the Markleevillage Fuels Reduction Project EA and the associated Project Record. After considering the environmental effects described in the EA, I have determined that these actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared. I base my finding on the following:

1. My finding of no significant environmental effects is not biased by the beneficial effects of the action.
2. There will be no significant effects on public health and safety. The project will reduce the risk of health and safety related problems from a severe wildland fire, while managing air quality concerns. A burn plan will also be completed prior to burning; the burn plan will address public safety and air quality during prescribed burning (EA Environmental Consequences – Fire/Fuels (pgs. 3-1 to 3-8) and Air Quality (pgs. 3-11 to 3-12)).
3. There will be no significant effects on unique characteristics of the area. Parklands, prime farmlands, wetlands, wild or scenic rivers or ecologically critical areas are not present within the analysis area. Approximately 313 acres or 26 percent of the project is within an inventoried roadless area (IRA). The Regional Forester reviewed the Markleevillage Fuels Reduction Project for consistency with the Department of Agriculture roadless area directives. On July 20, 2010, the Regional Forester concurred that the project complies with the directives and subsequent waivers and that the project could proceed. This project will help protect that character by reducing the risk of a catastrophic wildland fire and improve the vigor of the existing vegetation (EA Environmental Consequences – Fire/Fuels (pgs. 3-1 to 3-8) and Vegetation (pgs. 3-9 to 3-11)).
4. The effects on the quality of the human environment are not likely to be highly controversial because there is no known scientific controversy over the impacts of the project. Public involvement revealed no scientific controversy over the environment impacts of the project. The effects analysis was based on reviewed scientific studies and analysis. The effects of implementation of this decision on the quality of the human environment are not likely to rise to the level of scientific controversy as defined by the Council of Environmental Quality (EA – Public Involvement and collaboration (pg. 1-7), Environmental Consequences (pgs. 3-1 to 3-21), and Literature Cited (pgs. 5-1 to 5-2)).
5. The Forest Service has considerable experience with the types of activities to be implemented. The effects analysis shows the effects are not uncertain, and do not involve unique or unknown risk.
6. The action is not likely to establish a precedent for future actions with significant effects, because this action is not unusual in itself and does not represent a decision in principle about future considerations. This project is one of the proposed projects identified on the Carson Ranger District five year strategy for vegetation management/fuels reduction.
7. The cumulative impacts are not significant, as documented in the EA. Although there will be individual short-term disturbance to some species, the proposed action will not contribute to a

downward trend in populations (EA Environmental Consequences – Wildlife/Sensitive Plants (pgs. 3-13 to 3-14)). There will be a long-term benefit to the watersheds and forest health from reduction of tree densities and fuels (EA Environmental Consequences – Vegetation (pgs. 3-9 to 3-11) and Water/Soils (pgs. 3-16 to 3-19)).

8. The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. A heritage resource field survey was completed with a determination of “no effect” to historic properties and submitted to the California State Historic Preservation Office (SHPO). The implementation activities will be designed to avoid impacting the historic archaeological resources identified in the project areas. Over the long term, the project will protect some of these resources by reducing the threat of a severe wildland fire (EA Environmental Consequences – Heritage Resources (pg. 3-12)).

9. The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, because there are none known to exist within the analysis area (EA Environmental Consequences - Wildlife/Sensitive Plants (pgs. 3-13 to 3-14)).

10. The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA. This decision will not adversely affect consumers, civil rights, minority groups, or woman. Applicable laws and regulations were considered in the EA (refer to findings below in Findings Required by Other Laws and Regulations).

## **FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS**

Consultation with the U.S. Fish and Wildlife Service, The California State Historic Preservation Office, and the local tribes was completed. The project was designed in conformance with land and resource management plan standards and guidelines. My decision is consistent with all applicable laws, Executive orders, regulations and policies as summarized below:

National Forest Management Act (NFMA). This action is consistent with the Toiyabe Land and Resource Management Plan (1986) as amended by the Sierra Nevada Forest Plan Amendment of 2004.

Healthy Forest Restoration Act (HFRA) of 2003. This project was analyzed and is an authorized hazardous fuels reduction project in accordance with the HFRA because 100 percent of this project is located on Federal lands within the wildland urban interface.

Migratory Bird Treaty Act (MBTA). The EA considered impacts to migratory birds. A limited operating period (LOP) within mastication areas will occur April 1<sup>st</sup> to July 15<sup>th</sup> during migratory bird breeding season. Short-term impacts are expected to migratory birds; however, long term habitat conditions will be improved. This decision is in compliance with the MBTA requirements and executive order 13186.

Endangered Species Act of 1973. There are no federally listed threatened, endangered, or proposed species with the project area, as documented by the U.S. Fish and Wildlife Service in a letter dated August 12, 2010 (Ref. No 2010-SL-0388).

National Historic Preservation Act of 1966. The Forest Service conducted an intensive cultural site survey of the project area. Results of the survey were documented in a Cultural Resource Report, which made of determination the project will have no effect on any known cultural resources eligible for the National Register of Historic Places. On August 31, 2010, heritage report R2010041702031 was submitted to California SHPO for concurrence.

Clean Air Act of 1970, as amended. The Great Basin Air Quality management District (GBAQMD) enforces compliance with the Clean Air Act. Burning permits are issued and administered by the GBAQMD. Smoke production and management, as analyzed in the EA, is consistent with the GBAQMD.

Clean Water Act of 1977, as amended. The EA analysis determined there will be no adverse impacts to water quality.

Floodplain Management and Protection of Wetlands. This decision is in compliance with Executive Order 11988 and 11990 because it will have no impact on floodplains or wetlands.

Environmental Justice. This decision is in compliance with Executive Order 12989 because there will be no disproportionately high adverse human health or environmental effect on minority or low-income populations.

## **IMPLEMENTATION DATE**

The project may be implemented immediately following this decision. Implementation will most likely begin in the October of 2010.

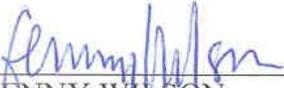
## **ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITIES**

This proposed project is subject to the objection process pursuant to 36 CFR Part 218 Subpart A and is not subject to the notice, comment, and appeal procedures found in 36 CFR Part 215. Objections opportunities were provided from August 18 to September 16, 2010. No objections were filed during this period. Pursuant to 36 CFR, Part 218, no appeals are provided.

## **CONTACT INFORMATION**

For copies of the Markleevillage Fuels Reduction Project Environmental Assessment, please visit the Humboldt-Toiyabe National Forest web site at: [www.fs.fed.us/htnf](http://www.fs.fed.us/htnf). You may also contact the Project Manager, Amanda Brinnand, Carson Ranger District, 1536 So. Carson Street, Carson City, NV 89701, 775-882-2766.

**SIGNATURE PAGE**

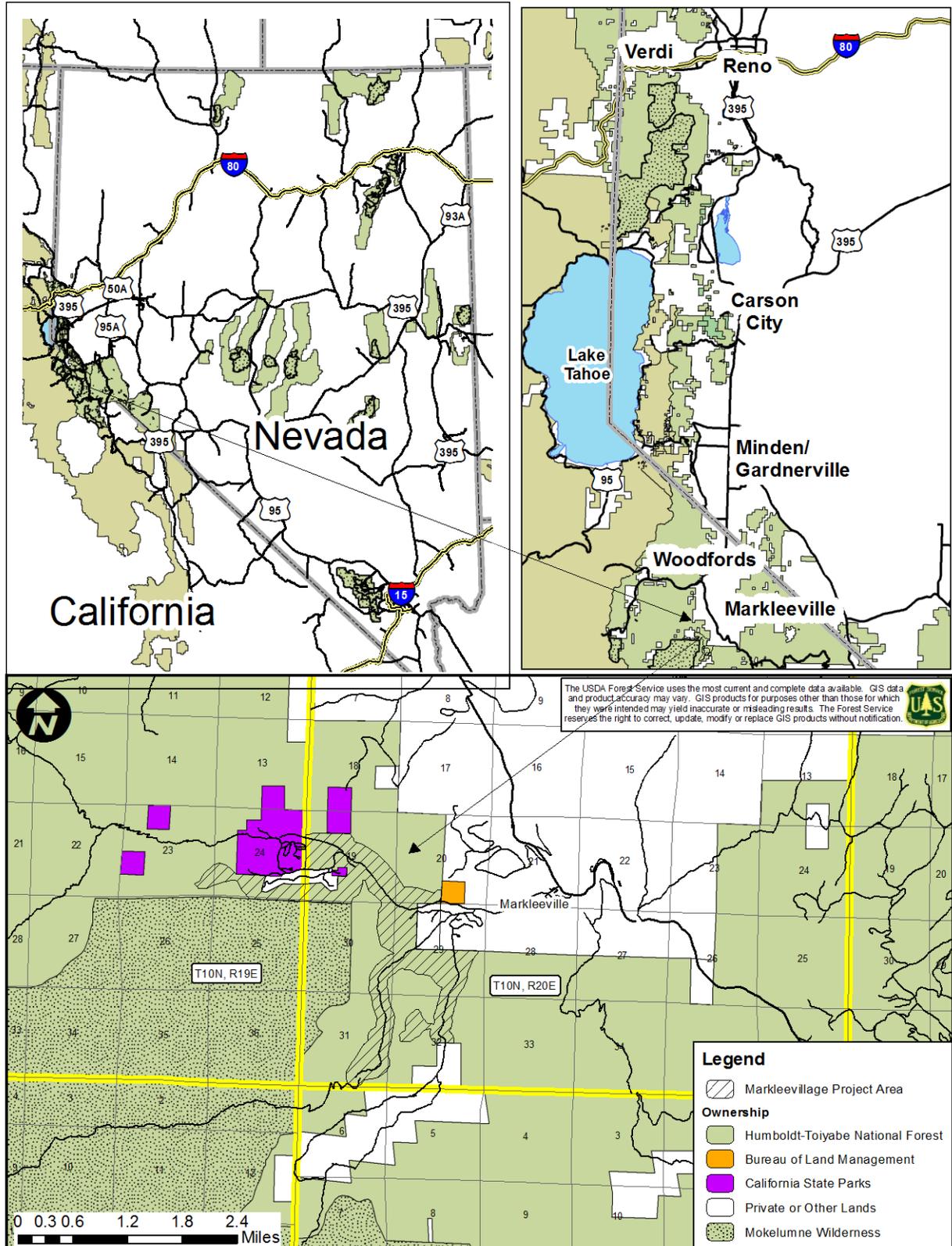
  
\_\_\_\_\_  
GENNY WILSON  
District Ranger

*September 30, 2010*  
\_\_\_\_\_  
Date Signed

APPENDIX A  
MAPS

*Markleevillage Fuels Reduction Project  
Decision Notice/Finding of No Significant Impact – September 2010*

Figure 1 – Vicinity map





**Appendix B:**

**Environmental Assessment – Humboldt-Toiyabe National Forest**



United States  
Department of  
Agriculture

Forest Service  
Intermountain  
Region

August 2010

# Environmental Assessment

## Markleevillage Fuels Reduction Project

Humboldt-Toiyabe National Forest  
Carson Ranger District  
Alpine County, California



A Healthy Forest Restoration Act Project

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# CHAPTER 1

## PURPOSE AND NEED

### **INTRODUCTION**

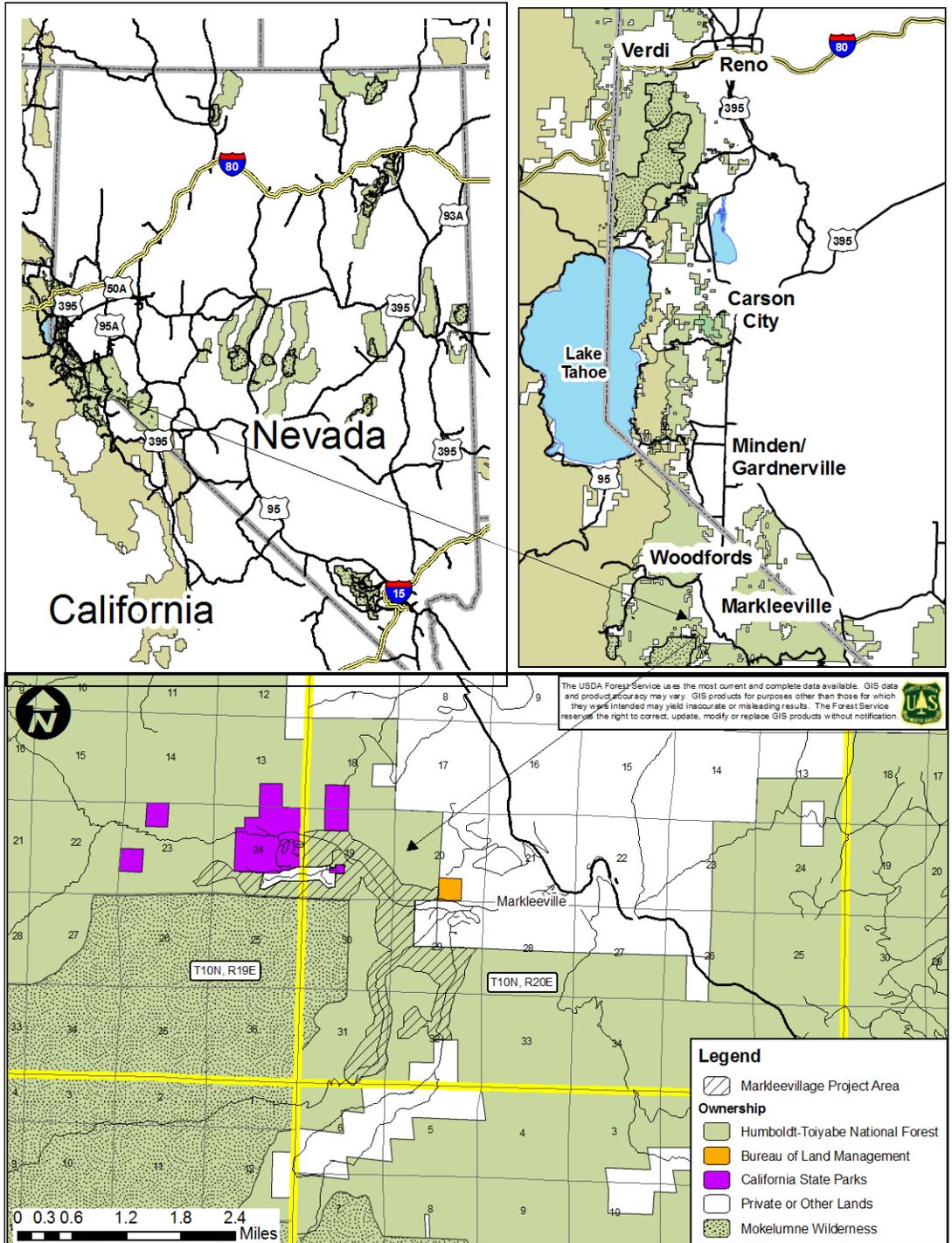
The Healthy Forest Restoration Act of 2003 (HFRA) was signed into law on December 3, 2003. The purpose of the HFRA is in part to: (A) reduce wildfire risk to communities, municipal water supplies, and other at-risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects; (B) enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape and; (C) protect, restore, and enhance forest ecosystem components, promoting the recovery of threatened and endangered species to improve biological diversity and enhance productivity and carbon sequestration (HR 1904).

The Markleevillage Fuels Reduction analysis was completed under HFRA (USDA DOI 2004). This project is an authorized hazardous fuels reduction project in accordance with the HFRA because: (i) the project is located on Federal lands within a wildland urban interface (WUI) area of an at-risk community and (ii) the project is being conducted under sections 103 and 104 of the HFRA.

The Markleevillage project area encompasses approximately 1,200 acres, is located on the Carson Ranger District of the Humboldt-Toiyabe National Forest, and is adjacent to Markleeville, California, an at-risk community. The Alpine County Community Fire Plan (Alpine Fire Safe Council 2007) recommends a more aggressive approach to fuels treatment and reduction on US Forest Service lands.

The elevation of the project area ranges from 5,700 to 6,500 feet. The legal description for the project area is Township 10 North, Range 20 East, sections 19, 20, 29, 30, 31, and 32 and Township 10 North, Range 19 East, sections 23 and 24, Mount Diablo Meridian. Figure 1-1 is a vicinity map of the project area.

Figure 1-1. Vicinity map



Within the previous 30 years, multiple vegetation and hazardous fuels reduction decision documents have been completed and projects implemented within the Markleevillage project area. Approximately 90 percent of the project area has received some sort of treatment in the past 30 years. Table 1-1 describes the National Environmental Policy Act (NEPA) decision document name and the year signed, along with the name of any associated implementation projects. Some of these decisions were wholly implemented; others may have only been partially completed. The Markleevillage fuels reduction project integrates these past projects into one project, wholly implementing partially completed projects, providing for treatment on previously untreated areas and maintaining the entire project area. Figure 1-2 displays the areas previously treated and what the type of treatment it was; some of the treatments overlay each other with the same area having received multiple treatments.

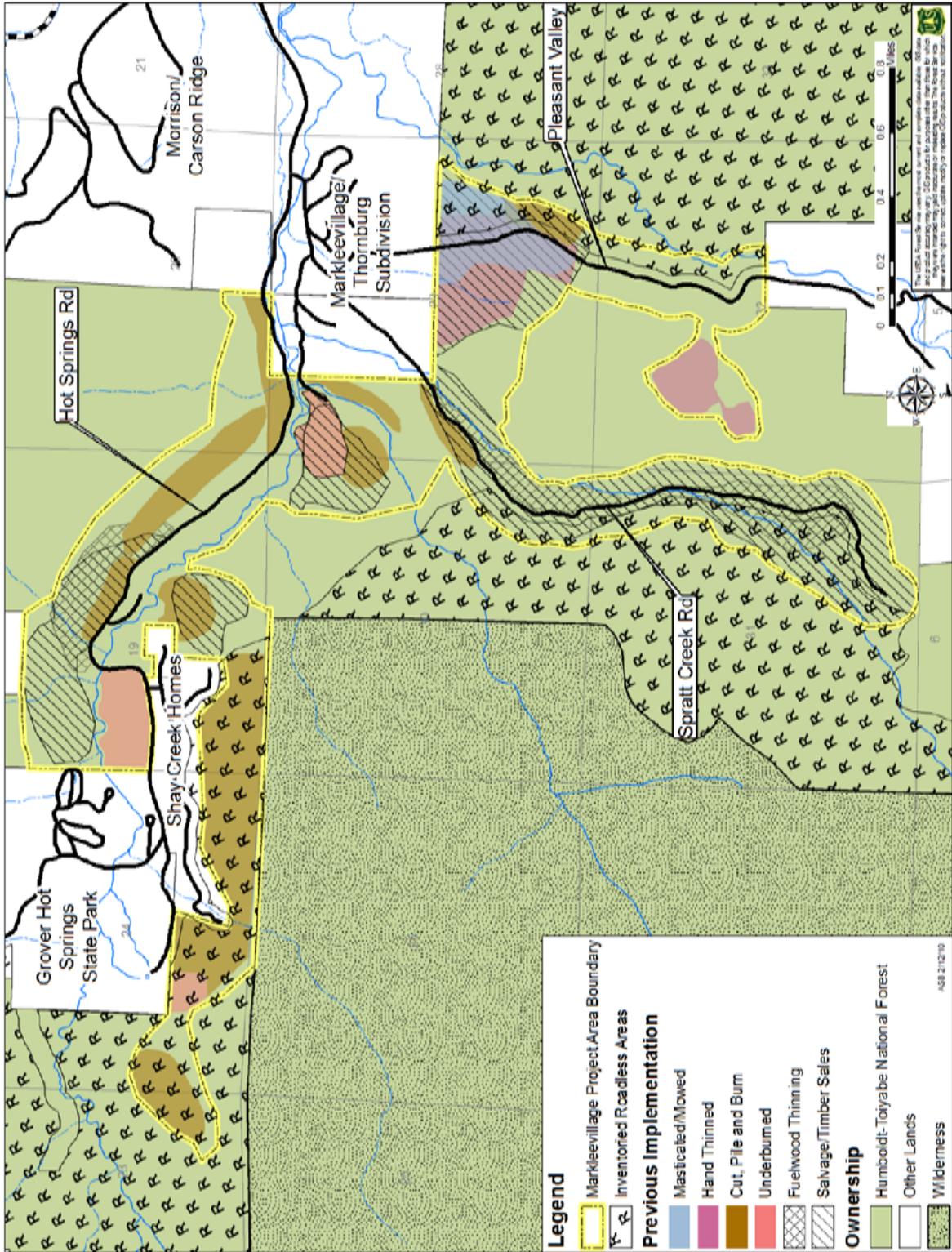
**Table 1-1.** NEPA decision documents within the project area and year signed.

<b>Decision Document Name</b>	<b>Year Signed</b>	<b>Associated Project</b>
Hot Springs Fuelbreak	2003	Hot Springs Project
North Shay Fuelbreak	2001	North Shay Project
Carson District Thinning	2000	Plantation Thinning
Markleeville Unit 1 Prescribed Fire	1999	Alpine Fuelbreak
Grover Hot Spring-Poor Boy Vegetative Management Project Supplement	1992	Musser-Jarvis Sale
Grover Hot Spring-Poor Boy Vegetative Management Project	1990	Alpine Salvage and Fritz/Resolution Sales
Pleasant Valley Insect & Disease Thinning Project	1983	Pleasant Spratt Timber Sale

Hazardous fuels reduction projects have also been implemented on private, State and Bureau of Land Management properties adjacent to the Markleevillage project area.

Approximately 313 acres or 26 percent of the project is within an inventoried roadless area (IRA). Figure 1-2 displays the IRA around the project area. The 2001 Roadless Area Final Rule (36 CFR 294) allows cutting, selling or removing of generally small diameter timber in an inventoried roadless area in limited circumstances. Circumstances that apply in this area include: (A) Maintenance or restoration of characteristics of ecosystem composition and structure to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period. (B) Cutting, sale, or removal or timber is needed and appropriate for personal or administrative use. (C) The roadless characteristics have been substantially altered in a portion of the IRA due to the construction of a classified road and subsequent timber harvest. Both must have occurred after the area was designated as an IRA and prior to January 12, 2001. The Regional Forester reviewed the Markleevillage Fuels Reduction Project for consistency with the Department of Agriculture roadless area directives. On July 20, 2010, the Regional Forester concurred that the project complies with the directives and subsequent waivers and that the project could proceed.

Figure 1-2. Previous treatments and inventoried roadless areas within the project area.



## **PURPOSE AND NEED**

The purpose and need for this project includes:

- Provide for and maintain a reduced wildland fire hazard by reducing fuel loading and ladder fuels in forested and shrub areas around the Shay Creek, Markleevillage, Thornburg and Carson Ridge subdivisions, as well as Grover Hot Springs State Park.
- Improve watershed conditions and protect municipal watersheds from adverse effects of wildland fire on soil and water quality.
- Maintain conditions to reflect more natural or historical fire regimes.
- Provide and maintain defensible areas for firefighters to manage future wildland fires.

This action responds to the goals and objectives outlined in the Toiyabe National Forest Land and Resource Management Plan (USDA 1986), as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (USDA 2004), and helps move the project area towards desired conditions described in those plans.

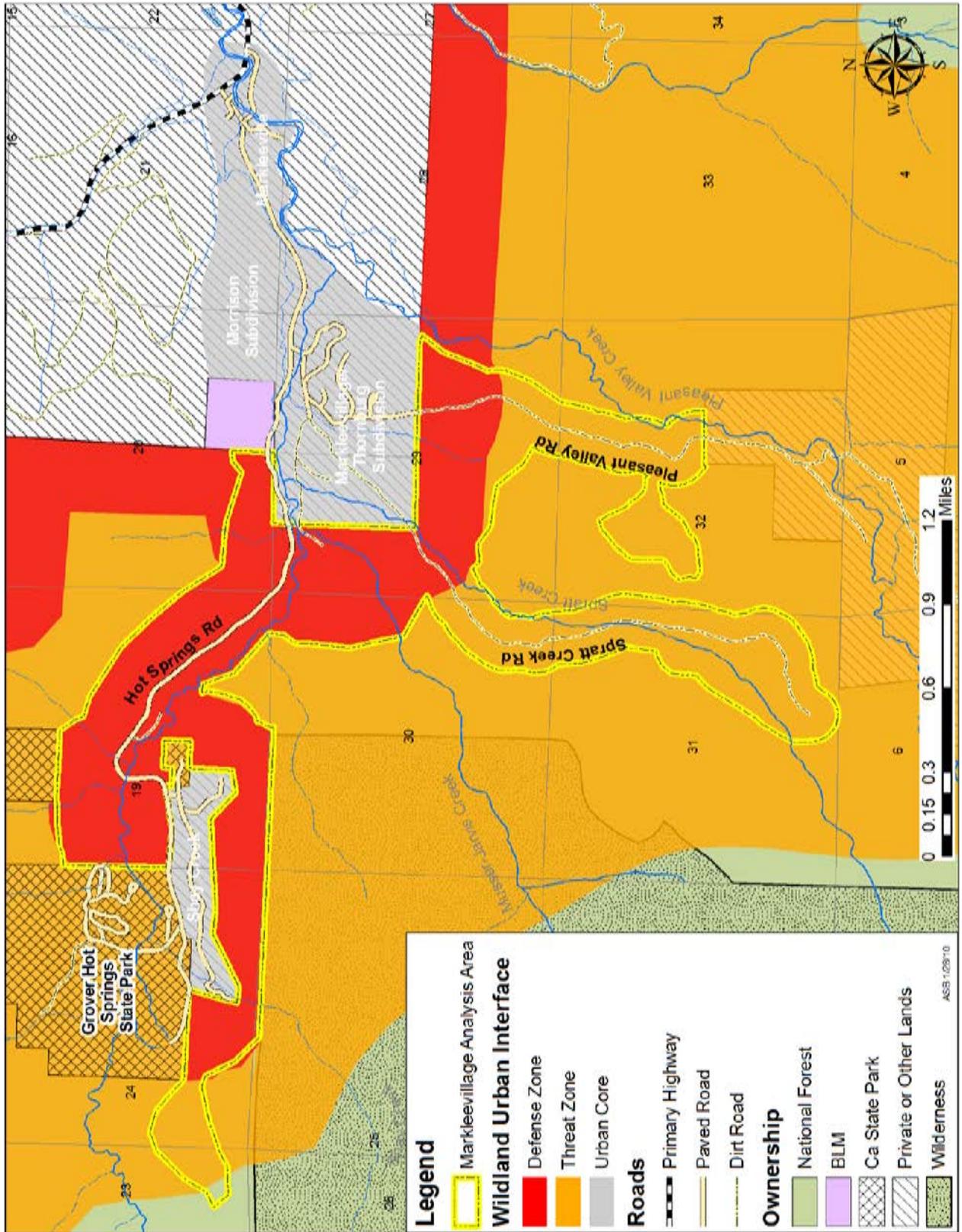
## **MANAGEMENT DIRECTION AND GUIDANCE**

The Markleevillage Fuels Reduction Project is proposed at this time to respond to goals and objectives of the National Fire Plan (USDA DOI 2000) and the Toiyabe National Forest Land and Resource Management Plan (USDA 1986), as amended by the Sierra Nevada Forest Plan Amendment Record of Decision (USDA 2004).

The project area is located within Management Area #3 – Alpine, as identified in the Toiyabe National Forest Land and Resource Management Plan (1986). Key resource values in the Alpine area are developed and dispersed recreation, wildlife, aesthetics, and watershed. Fire prevention and protection will be emphasized with other agencies and local governments to maintain key resource values. Vegetation management will be conducted to enhance watershed, range, wildlife, aesthetic and vegetative vigor; and to minimize the potential for catastrophic wildfire, and insect and disease infestations.

The project area is located within the general forest within the threat and defense zones of the WUI. Desired conditions, management intent and management objectives from the Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (January 2004) have been incorporated into the Proposed Action. Figure 1-3 depicts the WUI zones.

Figure 1-3. WUI defense and threat zones.



## The Proposed Action

Our proposal is to treat approximately 1,200 acres; some areas would receive multiple treatments, such as thinning and underburning.

The Forest Service proposes to meet the purpose and need within the Markleevillage Project area by implementing the following proposed actions:

**Conifer Thinning.** On approximately 750 acres trees would be thinned from below, favoring fir species, western dwarf mistletoe (*Arceuthobium campylopodum*) infected and insect infested trees for removal. This treatment would involve thinning from below by generally removing smaller trees that are most susceptible to wildfire and leaving the dominant tallest trees that are less susceptible to fire. On most of the 750 acres, tree thinning would be incidental and consist of removing insect infested trees, understory trees and/or minor thinning. Most of the trees removed would be smaller diameter trees, though trees up to 24” diameter at breast height (dbh) may be removed, especially if successfully attacked by bark beetles or infested with dwarf mistletoe. Signs of successful bark beetle attack include boring dust around  $\geq 50$  percent of the circumference of the base of the tree and/or pitch tubes with boring dust and frass in the resin.

Trees would be removed by hand thinning and piling and utilizing fuelwood permits and contracts.

**Brush and Incidental Small Tree Thinning.** Shrub and small trees densities would be reduced throughout the 1,200 acre project area. Treatment methods would include mastication/mowing, hand cutting, piling, and/or chipping.

**Prescribed Fire.** On approximately 1,200 acres, prescribed fire may be utilized to reduce shrub and small diameter trees densities, remove ladder fuels and reduce fuels buildup. Prescribed fire would include underburning and pile burning and would most likely occur after mechanical treatments are completed.

## PUBLIC INVOLVEMENT AND COLLABORATION

The Forest Service used multiple methods to develop the proposed action and determine the major issues that would affect the decision on this project. The Forest Service involved members of the public, interested private groups, and State, County and local agencies, including:

Collaboration with the Alpine Fire Safe Council.

Publication of a Notice of Proposed Action/Scoping Notice in the Reno Gazette Journal on February 23, 2010.

Listing of the project in the Schedule of Proposed Actions (SOPA), published quarterly by the Humboldt-Toiyabe National beginning in January 2010.

Holding a public open house collaboration meeting at Turtle Rock Park in Markleeville California to present, review and revise the project on March 10<sup>th</sup>, 2010.

Mailing of the Notice of Proposed Action/Scoping Notice to 195 interested individuals and adjacent landowners on February 23, 2010.

## **COMMENTS RECEIVED DURING SCOPING**

A Forest Service interdisciplinary (ID) team identified issues to be addressed in developing alternatives for this area based on input received from the ID team, adjacent landowners, interested members of the public and collaboration meetings with Alpine Fire Safe Council. Comments received during scoping and responses to the comments are located in Appendix A.

## **ISSUES**

The following issues were identified from public comments, consultation and interdisciplinary team analysis. These issues were incorporated into the proposed action and design features.

- Effects of treatments on reducing fuel loading and wildland fire risk, including maintenance of treated areas.
- Short and long term impacts and benefits to wildlife and wildlife habitat.
- Potential for noxious/invasive weed introduction and/or spread.
- Potential effects on heritage resources.
- Potential impacts to watersheds, water quality and soils.

## **DECISION NEEDED**

The decision needed from the Humboldt-Toiyabe National, Carson Ranger District Ranger, the responsible official, is whether to implement this project to meet the management direction as stated in the Forest Plan and reduce hazardous fuels and maintain a reduced wildland fire risk in the Markleevillage project area.

## CHAPTER 2 PROPOSED ACTION

### INTRODUCTION

This chapter describes the proposed action developed by the interdisciplinary team in response to the issues identified. The team followed the alternative analysis procedure found under Section 104 of the HFRA.

### PROPOSED ACTION/NON-COMMERCIAL FUNDING ALTERNATIVE

The proposed action is designed to reduce forest fuel loading in the Markleevillage project area. Existing roads would be utilized to implement this project; no new roads would be constructed. This alternative is the non-commercial funding alternative required by the November 3, 2009 Remedy Ruling by Judge England regarding the 2004 Framework (Sierra Nevada Forest Plan Amendment). This is a non-commercial alternative because the only material removed would be for fuelwood. All treatments would be accomplished using a mix of Forest Service crews and permits or contracts. Slash resulting from the proposed action would be a) shredded in the masticated areas; b) lopped and scattered in areas proposed for underburning; c) piled and burned in areas where underburning is not feasible, but pile burning is; and d) lopped and scattered and left on site in inaccessible areas where pile burning is not feasible and a long-term increased fuels hazard isn't created. Figure 2-1 depicts the proposed action.

The Forest Service proposes to meet the purpose and need within the Markleevillage Project area by implementing the following proposed actions:

**Conifer Thinning.** On approximately 750 acres trees would be thinned from below, favoring fir species, mistletoe infected and insect infested trees for removal. This treatment would involve thinning from below by generally removing smaller trees that are most susceptible to wildfire and leaving the dominant tallest trees that are less susceptible to fire. On most of the 750 acres, tree thinning would be incidental and consist of removing insect infested trees, understory trees and/or minor thinning. Most of the trees removed would be smaller diameter trees, though trees up to 24" dbh may be removed, especially if successfully attacked by bark beetles or mistletoe infected. Signs of successful bark beetle attack include boring dust around  $\geq 50$  percent of the circumference of the base of the tree and/or pitch tubes with boring dust and frass in the resin.

Trees would be removed utilizing fuelwood permits and contracts, hand crews and mastication equipment.

Generally trees in the suppressed and intermediate crown classes would be removed, though some trees in the co-dominant crown class would be removed. The majority of

trees targeted for removal would be the smaller diameter trees that are competing with mature overstory trees or with more vigorous trees in the same canopy layers.

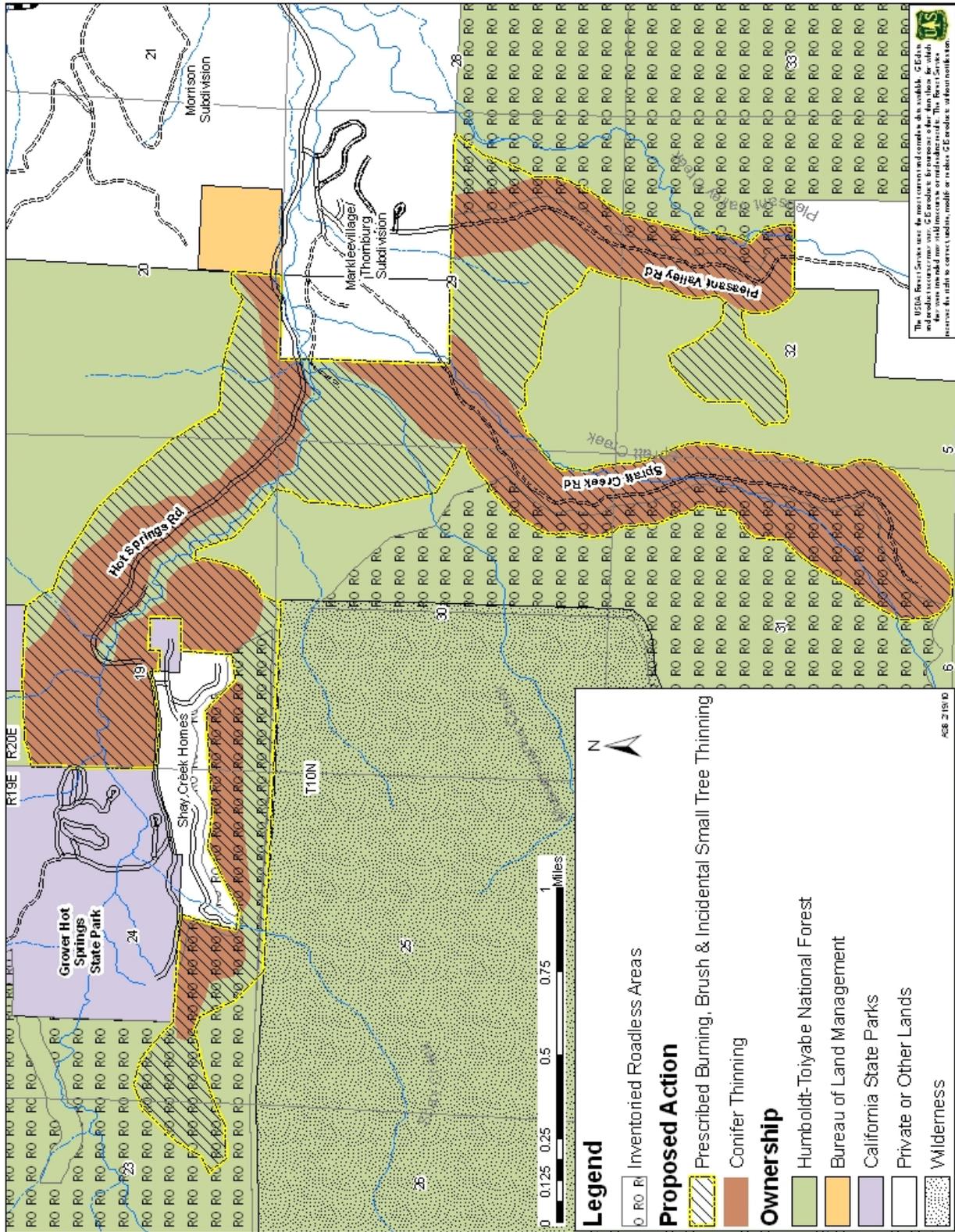
Generally the largest and most vigorous trees would be retained; the exception to this would be in areas successfully infested with bark beetles.

**Brush and Incidental Small Tree Thinning.** Shrub and small trees densities would be reduced throughout the 1,200 acre project area. Treatment methods would include mastication/mowing, hand cutting, piling, and/or chipping.

**Prescribed Fire.** On approximately 1,200 acres, prescribed fire may be utilized to reduce shrub and small diameter trees densities and reduce fuels. Prescribed fire would include underburning and pile burning and would most likely occur after mechanical treatments are completed.

**Maintenance.** Maintenance would be required in the treated areas to maintain more open conditions. Without maintenance conifer and brush regeneration would eventually put the stand at a risk from insect, disease, high severity wildland fire and competition related mortality. Maintenance may include mastication, piling and burning, additional thinning, or underburning.

Figure 2-1. Marklevillage Fuels Reduction Project proposed action



## **DESIGN FEATURES**

### **Fire/Fuels**

- All Federal, State and local regulations pertaining to prescribed burning would be followed. A Region 4 approved burn plan would be completed and followed.
- A news release would be distributed to media contacts and the general public contacted prior to the burning season to notify the local community of the prescribed burning.

### **Archeology**

- Archeological sites would be flagged and avoided during project implementation.
- Trees would be directionally felled away from identified archeological sites.
- No slash piles would occur in identified archeological sites, any slash within site boundaries would be removed by hand.

### **Wildlife/Sensitive Plants**

- Where available, three of the largest snags per acre would be retained.
- Large woody debris would be retained, at least 3 pieces per acre, greater than 12" dbh or the largest available.
- Mastication/mowing of brush and small trees would occur after July 15 to reduce impacts to nesting migratory birds.
- Any treatment within Northern goshawk and/or California spotted owl protected activity centers would be subject to a limited operating period and modified prescription based on Forest Plan standards and guidelines.

### **Soils/Hydrology**

- Native seed mix would be used during project rehabilitation efforts.
- Generally, ground based equipment would operate on slopes less than 35 percent (30 percent on decomposed granite soils), except for pitches of 150 feet or less. However, ground based operations may occur on slopes up to 50 percent; these would be designed on a unit by unit basis only after soil stability, soil rock content and the location of the steep slope in relation to the remaining portions of the treatment unit have been determined to be appropriate by the Forest Service.
- No trees would be removed where they provide stream bank stability.
- Projects would comply with conditions in Lahontan Water Quality Control Board timber harvest waivers.
- Pile burning would be minimized in riparian conservation areas.
- Ground-based equipment would stay on established stream crossings

**Air Quality**

- Prescribed fires are subject to permitting by the Great Basin Unified Air Pollution Control District (GBUAPCD). For each prescribed fire, the Forest Service would have contingency plans identified to reduce smoke emissions. Contingency plans shall be implemented when the GBUAPCD determines that acceptance limits of smoke are exceeded, and/or the Forest Service anticipated that the prescription for a prescribed fire would be exceeded.

**Noxious Weeds**

- To remove any soil and debris that may harbor noxious weed seed, contract Equipment would be washed and inspected prior to entering National Forest System lands.
- When seeding is required, seed would be tested as weed free.
- Any new infestations of noxious weeds would be documented and locations marked. New sites would be treated by hand pulling or lopping.

**Vegetation**

- Retain all trees greater than 24” dbh, except where removal is necessary for operational safety.

**MONITORING**

This project would use an adaptive management approach, where the treatments are implemented, monitored and adapted. Monitoring would determine if the desired conditions are being met. Adjustments to project prescriptions based on monitoring within the general scope of the proposed action analyzed in this document would not need a new decision. Any adjustments outside the scope of the proposed action would likely require a new decision. Monitoring actions would include those discussed in Table 2-1.

**Table 2-1.** Monitoring Actions.

Action	Method	Timing
Evaluate the effectiveness of tree and fuels treatments in meeting resource objectives	Photo points	Pre and post project activities
Evaluate burning conditions, fuel consumption and fire effectiveness	Observations during and after burns	During and post burn
Ensure archeological sites are not impacted	Field visits	Pre, during and post activity
Ensure permits and contracts are in compliance.	Field visits and inspections	During and post activities
Meet the California Regional Water Quality Control Board Lahontan Region conditional waiver of waste discharge requirements.	Submit appropriate timber harvest waiver	Pre and post activities

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## CHAPTER 3 AFFECTED ENVIRONMENT/ ENVIRONMENTAL CONSEQUENCES

### **ANALYSIS QUALIFICATION**

This chapter provides a summary of the key environmental effects of the proposed action as described in the specialist reports prepared for this project. The analysis and conclusion about the potential effects are synopsisized and cited in the respective resource sections. The resource specialist reports, which disclose the full analysis of the direct, indirect, and cumulative effects, are incorporated by reference and are available in the project file, located at the Carson Ranger District office.

Each resource area discloses the direct, indirect, and cumulative effects for that resource area. The National Environmental Policy Act defines these as:

**Direct** – effects which are caused by the action and occur at the same time and place.

**Indirect** – effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

**Cumulative** – impacts that result from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

The past, present and reasonably foreseeable future actions include:

- Comstock logging in the late 1800's.
- Fire suppression throughout the 20<sup>th</sup> century to present day.
- Previous fuels reduction and forest health improvement projects on Federal lands.
- Personal use Christmas tree and fuelwood sales, expected to continue in future years.
- Private land development including new homes.
- Recreational use – primarily hiking, camping, picnicking, horseback riding, mountain biking, OHV use, cross-county skiing and snowmobile use.
- Hazardous fuels reduction projects completed and planned on private lands.

Because this project is being prepared under the HFRA, and is within the WUI, the no-action alternative was not developed. However, an understanding of what would occur should no-action be taken is important in gaining an understanding of the effects of the proposed action.

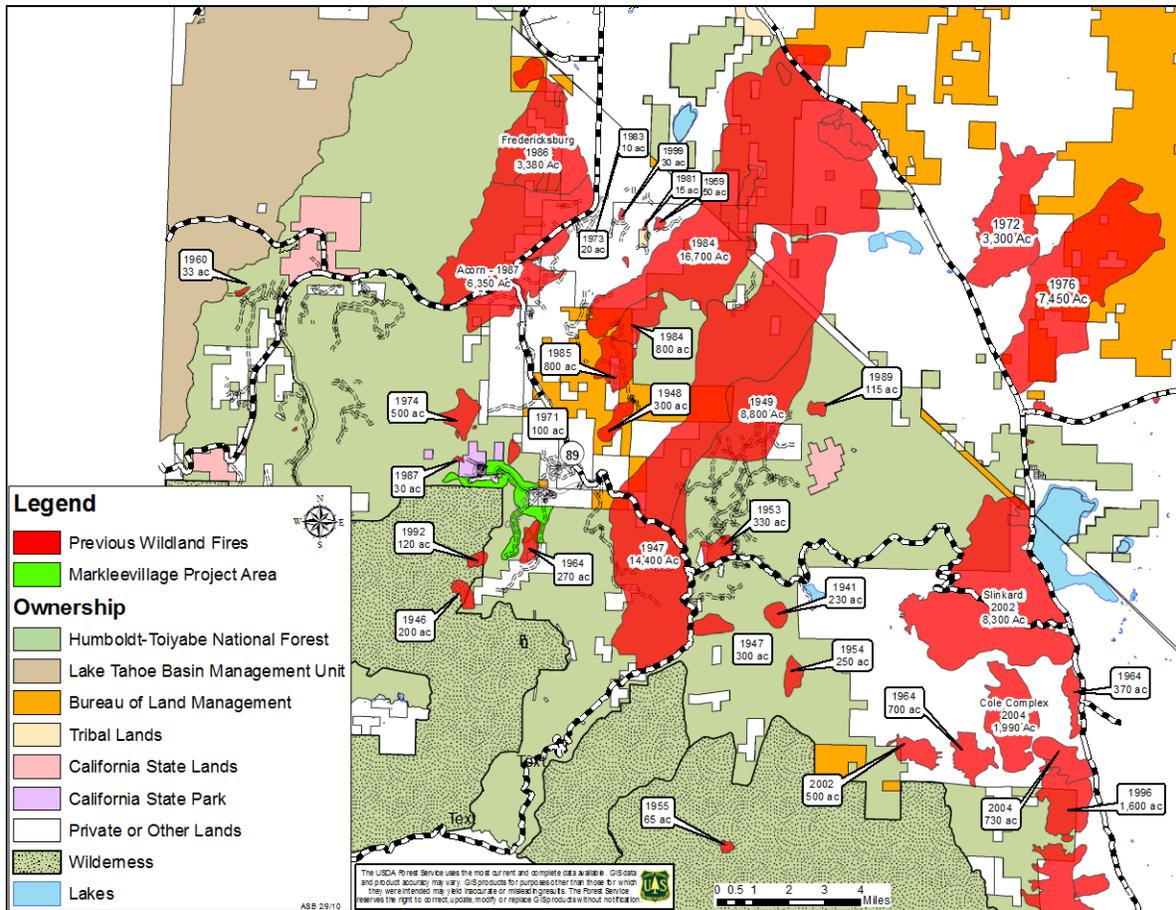
### **FIRE/FUELS**

#### **Affected Environment**

Fire is a naturally occurring event in the arid mountains of this project location. The proximity of the Sierra Nevada Range to the desert basins creates atmospheric disturbance leading to

frequent seasonal lightning storms. Generally arid conditions create susceptible fuel beds for lightning and human-caused ignitions. Between 1980 and 2008 eleven fires have started within the project area, with seven from natural causes and four human caused; similar ignition statistics occur in the surrounding area. Within one mile 44 natural and 13 human caused fires occurred within the same time period. Figure 3-1 is a map indicating the fire history surrounding the project area.

**Figure 3-1.** Previous wildland fires around the project, the year burned and acreage



Potential fire behavior can be estimated for a given location from topographic, weather, and fuels information. Historic weather observations for the period of 1964 to 2009 were used to estimate fuel moisture conditions and major fire weather influences using the *Fire Family Plus* program, version 4.0.2. The database includes manual observations from 1964 to 2003 and automated observations from the Markleeville Remote Automated Weather Station (RAWS) from 2003 through 2009. Table 3-1 displays the weather and fuels conditions used to calculate the fire behavior and effects.

**Table 3-1.** Weather and fuels conditions used to calculate potential fire behavior and effects

<b>Fire Weather Conditions</b>	<b>Wind mph</b>	<b>Max Temp (deg F)</b>	<b>Live Herb (%)</b>	<b>Live Woody (%)</b>	<b>0 – 0.25“ Dead (%)</b>	<b>0.025 -1” Dead (%)</b>	<b>1 – 3” Dead (%)</b>	<b>3” + Dead (%)</b>
<b>Low</b>	11.7	52	45	113	12.7	16.3	17.8	20.9
<b>Moderate</b>	9.6	76	56.6	84.2	4.2	6.0	9.7	11.4
<b>High</b>	6.9	90	30.3	60	2.4	2.9	5.2	5.8
<b>Extreme</b>	7.0	94	30	60	1.9	2.4	4.3	5.0

These locally observed weather observations and the fuel moisture conditions were entered into *FlamMap* version 3.0, developed by Finney, Brittan, & Seli and sponsored by the Joint Fire Sciences Program, Rocky Mountain Research Station. This program combines local weather with topographic and vegetation data to predict fire behavior across a landscape. The output map layers show potential fire behavior at a resolution of 30 meters, reflecting the changes in vegetation and topography under fixed weather and fuel moisture conditions. Fuel moisture conditions are used in the calculations, rather than weather observations alone, because they indicate cumulative effects of weather factors on the vegetation or fuel including those prior to the time of the fire. LANDFIRE remotely sensed data using fire behavior fuel models (Scott and Burgan 2005) represented the vegetation across the project landscape.

Fire behavior projections were modeled for three weather and fuel condition scenarios, high, moderate, and low. Under the Sierra Nevada Forest Plan Amendment (USDA 2004) the desired condition within the WUI threat zone is flame lengths at the head of a fire of less than four feet under high fire weather conditions through treatment of vegetation. The high fire weather conditions in table 3-1 depict the average of these weather conditions, which can be expected to occur approximately seven percent of the year. The moderate weather scenario reflects the average through most of the year; 75 percent. The low scenario represents conditions during only 15 percent and this is also typical of the conditions under which prescribed burning is conducted. The extreme conditions in the table represent circumstances which occur less than three percent of the time; however similar circumstances are present during the development of many large wildfires in the area.

Flame length is an observable index of fire behavior that summarizes the interaction of fuel and weather conditions. Flame length is also directly related to fireline intensity and is a key indicator of a fire's resistance to fire suppression efforts. The four foot flame lengths selected as desirable within the WUI threat zone are generally seen as manageable by firefighters without the support of much equipment or aircraft. This represents a relatively safe working environment for firefighters in the event of a wildfire. Figure 3-2 shows the distribution of flame lengths across the landscape for the High Fire Weather scenario, and also depicts the distribution through the WUI zones.

In addition to the desirability of maintaining flame lengths of four feet or less within the WUI threat zone, the Sierra Nevada Forest Plan Amendment (USDA 2004), also identifies the desired conditions of fairly open tree stands dominated primarily by larger, fire tolerant trees with openness and discontinuity of the crown fuels, both horizontally and vertically, resulting in a very low probability of sustained crown fire. Figure 3-3 shows the potential for crown fire activity with the current vegetation, under high fire weather conditions; these were generated with *FlamMap*. Within the project area, under these conditions, most fires would most likely remain on the surface with limited areas; approximately 13 percent of total project area would be able to sustain passive crown fire or touching. Active crown fire is not predicted under these conditions, but is likely to occur under extreme fire weather conditions in areas with sufficiently dense tree crowns.

It is important to note that both intense surface fires and passive crown fires pose threats to community and firefighter safety and can cause tree mortality. Increasing the gap between surface and crown fuels is necessary to prevent crown fire initiation and can be accomplished both by treating surface fuels and raising the canopy base height of the trees. Canopy base height is the average height from the ground to lower level of the tree canopy of a stand. Crown bulk density is a measure of the density of the tree canopy. Reducing the crown bulk density below the  $0.10 \text{ kg m}^{-3}$  is generally recommended to prevent active crown fire from spreading through the tree canopy if crown fire becomes established (Scott & Reinhart 2001, Graham et al. 2004).



**Figure 3-3.** FlamMap generated potential for crown fire activity with the current vegetation under the high fire weather scenario.

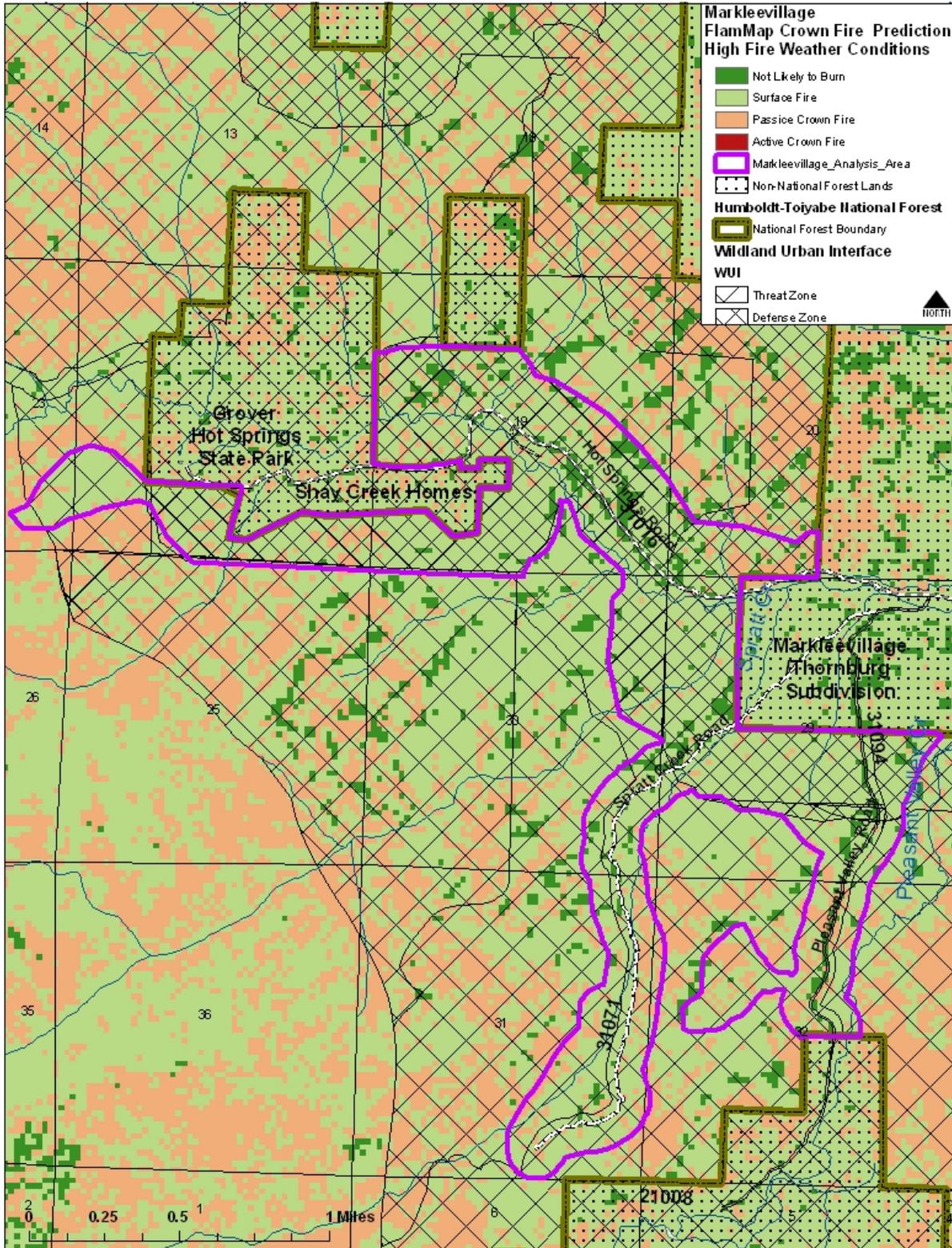


Table 3-2 displays a comparison of the flame lengths projected by *FlamMap* for fire weather scenarios within the WUI zones. The acreage figures are modeled projections that give a general idea of fire behavior in the project area under current conditions. Because the projections were modeled at a 30-meter resolution only the larger continuous blocks of similar fire behavior show up in the outputs; the acreage figures in table 3-2 should be considered minimum treatment areas. As the vegetation continues to grow through the 10 year life of the project additional areas will begin to show fire behavior potential that exceeds acceptable limits for WUI.

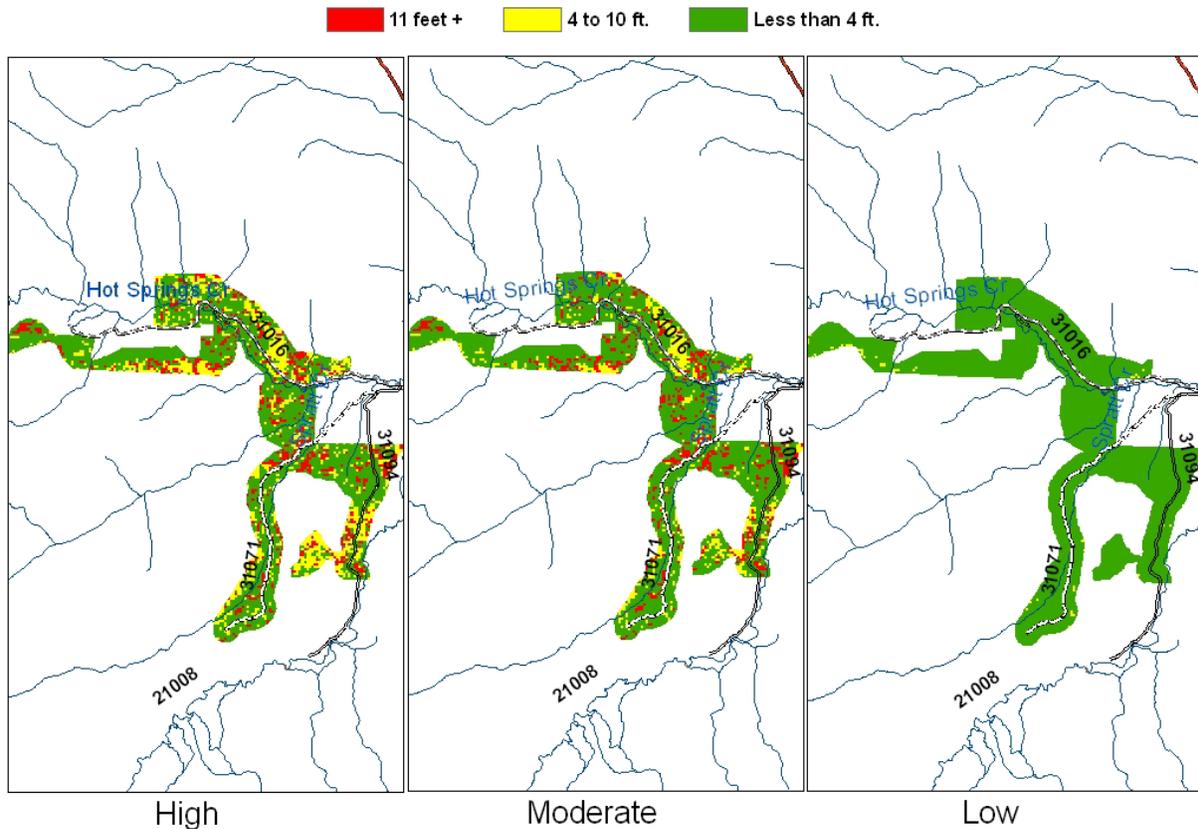
The acreage figures showing flame lengths of four feet and greater in the high fire weather scenario indicates the approximate area needing treatment to create the desired fire behavior conditions within the WUI zones. The areas showing flame lengths of four feet and greater will be most likely to need treatments before they can be maintained using prescribed fire. Other areas also require pretreatment. The acreage figures for the moderate and low scenarios give an indication of the relative differences in fire behavior under these less severe conditions.

**Table 3-2.** Comparison of flame lengths projected by *FlamMap*.

Fire Weather	High			Moderate			Low		
	All WUI acres	Defense acres	Threat acres	All WUI acres	Defense acres	Threat acres	All WUI acres	Defense acres	Threat acres
Flame length									
Less than 4 ft	767	504	263	888	571	317	1181	761	420
4 - 10 feet	269	157	112	158	94	65	9	4	5
11 ft & greater	154	104	50	144	100	44			
<b>Total</b>	<b>1190</b>	<b>765</b>	<b>425</b>	<b>1190</b>	<b>765</b>	<b>425</b>	<b>1190</b>	<b>765</b>	<b>425</b>

The degree to which pre-treatment measures must be taken will depend on the weather and fuel conditions during the time of the burning. Burn plans will be developed to determine the conditions under which burning will take place. These will be determined primarily by operational safety requirements and ability to meet project objectives. Figure 3-4 depicts potential fire behavior represented by flame lengths across the landscape under the three fire behavior scenarios modeled and is a visual summary of the figures presented in table 3-2. This projection demonstrates how the lower fire behavior expected during the portion of the year in which prescribed fire is conducted compares to the expected fire behavior during the remainder of the year.

**Figure 3-4.** Flame lengths projected by *FlamMap* under a range of fire weather conditions



### **Environmental Consequences**

**Direct and Indirect Effects:** The proposed action will reduce surface fuels, ladder fuels, and decrease the stand density. These fuel modifications will decrease the likelihood of undesirable fire behavior within the WUI zones. Implementation will take place over ten or more years and will require regular maintenance to meet fire behavior objectives within the WUI. Once initial fuel loading is reduced in areas showing the potential for undesirably high fire behavior, much of the project area can be maintained through the use of prescribed fire restoring the low intensity frequent fire that is typical of the majority fire regime.

**Cumulative Effects:** The treatments proposed in this project combined with past Forest Service projects, the work of the fire safe councils, and local agencies within the communities will contribute to reducing the probability of large scale severe fire in the project area impacting the communities and creating undesirable ecological impacts.

## VEGETATION

### Affected Environment

The present forest developed under conditions unique to the last 150 years, which strongly influenced its structure and species composition. Early influences of grazing, timber harvest, abundant precipitation and suppression of wildfires played a strong role in shaping the vegetation that exists today.

Conifer stands, with interspaced shrub fields, are the predominant vegetation within the project area. On National Forest System lands within the project area 71 percent of the cover is comprised of conifer vegetation, 24 percent is shrub cover, three percent is herbaceous cover (grasses and forbs), and two percent is aspen.

Within the conifer cover, approximately 85 percent is comprised of Jeffrey (*Pinus jeffreyi*) or eastside pine (Jeffrey and ponderosa (*Pinus ponderosa*)); 13 percent is comprised of mixed conifer/fir, one percent is comprised of white fir (*Abies concolor*), and the remaining one percent is comprised of singleleaf pinyon pine (*Pinus monophylla*). Tree densities within the conifer areas area currently range from scattered, open trees to basal areas around 200 square feet per acre.

Within the shrub cover, approximately 31 percent is comprised of bitterbrush-sagebrush, 28 percent is comprised of big basin sagebrush, 14 percent is comprised of bitterbrush, 11 percent is comprised of great basin mixed shrub, 11 percent is comprised of great basin or upper montane mixed chaparral, three percent is comprised of greenleaf manzanita and the remaining two percent is comprised of willow.

Many acres within the project area have received tree and brush density reduction treatments in the past 30 years. These treatments varied by project and included thinning trees to 80 square feet of basal area per acre, creating fuelbreaks, thinning trees and shrubs, removing ladder fuels, thinning plantation trees, removing dead, dying and insect attacked trees, reducing brush densities and removing concentrations of dead down material. These projects were implemented through timber/salvage sales, fuelwood cutting, hand crews cutting, piling and burning, mowing, chipping and prescribed understory fire.

Bark beetles have been active in this area at various levels in the area since the early 1990's. Within the project area, Jeffrey pine beetle (*Dendroctonus jeffreyi*) are the primary bark beetles that attack Jeffrey pine, the fir engraver beetle (*Scolytus ventralis*) are the primary bark beetles that attack white fir and the mountain pine beetle (*Dendroctonus ponderosae*) are the primary bark beetles that attack lodgepole and ponderosa pine . Pine engraver beetles (*Ips pini*) and (*Ips confusus*) have increasingly been causing pine mortality from untreated green slash. Data from the 2009 aerial insect and disease detection survey indicates Jeffrey pine and fir engraver beetle are active within the project area with five attack centers of one to fourteen trees at each location. Stand examination data, collected from relatively small areas in 2010, indicates some areas with higher basal areas (around 200 square feet per acre) have a moderate bark beetle risk rating.

Western dwarf mistletoe is present within the project area; this obligate parasite affects the growth, form and survival of trees and reduces their competitive status and reproductive fitness (USDA 2002). Stand examination data indicates that when present, the average dwarf mistletoe rating is two; indicating a low to moderate infection rate.

Approximately 94 percent of the project area is within a grazing allotment. The Dressler cattle and horse allotment occupies approximately 12 percent of the project area near the South end of the project on Pleasant Valley Road and is currently active. The Hot Springs cattle and horse allotment, which occupies approximately 82 percent of the project area, is currently closed and not grazed.

### **Environmental Consequences**

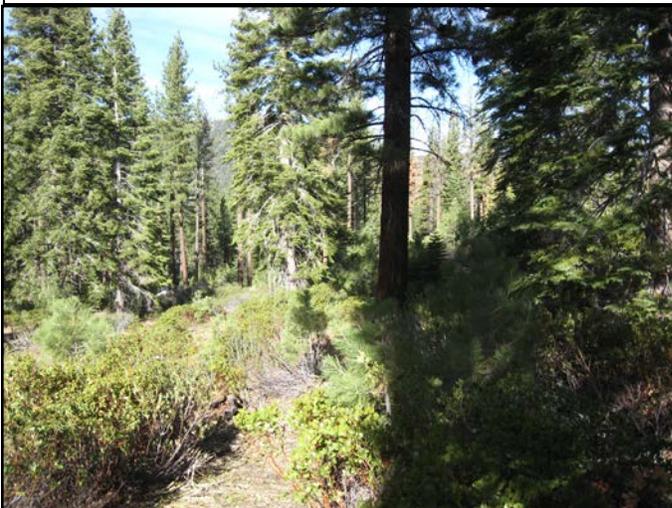
Direct and Indirect Effects: Implementation of the proposed action would not dramatically alter the vegetation species composition in the project area. It would affect the structure of the vegetation with the removal of surface and ladder fuels and thinning trees up to 24" dbh. Tree species composition would be maintained or restored to reflect more historic conditions with somewhat increased Jeffrey pine densities and reduced white fir densities, especially in the understory. Long-term sustainability of treated timber stands and resiliency to natural disturbances would improve and stand structures would be maintained or restored to be more representative of historic conditions. Thinning from below (also called low thinning) mimics mortality caused by inter-tree competition or surface fires and concentrates site growth potential on the dominant trees (Graham et al. 1999). Residual basal areas will range from scattered open grown trees to approximately 120 square feet of basal area per acre.

Trees infected with dwarf mistletoe would be a priority for removal; in some areas trees infected with dwarf mistletoe are dominant trees and/or over 24" dbh and would remain. Smaller pine infected with dwarf mistletoe would be removed, however with an overstory presence of mistletoe remaining; this project would not have a significant effect on dwarf mistletoe reductions.

Areas that were previously treated would have incidental trees thinned to maintain basal areas, and ladder fuels and brush thinned. Areas that were not previously treated would be thinned to 80 to 120 square feet of basal area.

Figure 3-5 displays an example of an area that would require initial treatment. Figure 3-6 displays an example of an area that would require maintenance.

**Figure 3-5.** Example of an area requiring initial treatment of tree and brush thinning.



**Figure 3-6.** Example of an area requiring maintenance.



Previous large stand replacing wildfires in the Markleeville/Woodfords area have resulted in some of the forested areas being replaced with early seral shrub species. Without the occurrence of thinning treatments and maintenance, stand densities would increase, thereby increasing the risk of bark beetle and density related mortality. With no treatment, the effectiveness of previous treatments would be lost and the risk of a stand replacing wildfire would increase.

Cumulative Effects: With this project, approximately 1,200 acres would receive treatment over a ten year period, including maintenance and initial treatments. Past and proposed treatments on private lands include hazardous fuels reduction projects and watershed improvements. Past and proposed treatments on public lands include wildland fire, conifer and brush thinning, prescribed fires, salvage and timber sales, and personal use Christmas tree and fuelwood removal. These treatments on private and public lands would generally reduce the risk of wildland fire, improve forest vigor and move the area toward more desired conditions.

## **AIR QUALITY**

The existing sources of particulate emissions within and/or near the Markleevillage project area include smoke from neighboring prescribed fire projects, residential wood stoves, and vehicular exhaust and dust.

### **Affected Environment**

All of the project area falls within Alpine County, California. This counties air quality is monitored and enforced by the Great Basin Air Quality Management District.

### **Environmental Consequences**

Direct and Indirect Effects: Air Quality would be affected primarily by prescribed fire operations such as pile burning and/or understory burning following pretreatments of an area. Prescribed fires are subject to permitting by the Great Basin Air Quality Management District. For each prescribed fire, the Forest Service will have contingency plans identified to reduce smoke emissions. Contingency plans shall be implemented when the Great Basin Air Quality Management District determines that acceptable limits of smoke are exceeded, and/or the Forest

Service anticipates that the prescription for a prescribed fire would be exceeded. Given these conditions, it is unlikely that health risks from air quality would occur. However smoke generated from prescribed burning cannot be prevented and would likely be an annoyance to some individuals in local neighborhoods as well as to travelers through the area. The Carson Ranger District would work with other National Forests, the Bureau of Land Management, and local fire departments to ensure that multiple prescribed burns would not exceed air quality standards.

In the absence of hazardous fuels reduction treatments, a high severity wildland fire may be likely. This would cause short term adverse air quality impacts from smoke emissions. The Angora Fire, which charred 3,100 acres near South Lake Tahoe in 2007, released an estimated 141,000 ton(e)s of greenhouse gases and the decay of the trees killed by the fire could bring the total emissions to 518,000 ton(e) s. This is equivalent to the greenhouse gas emissions generated annually by 105,500 cars (Malmsheimer et al. 2008).

Cumulative Effects: With the application of design features, there are no foreseen cumulative effects to air quality.

## **HERITAGE RESOURCES**

### **Affected Environment**

A total of ten known archaeological sites are present within the proposed project area. These sites range from prehistoric lithic scatters and bedrock mortar sites to historic logging camp sites and ditches. These sites remain unevaluated for inclusion into the National Register of Historic Places. These sites would be flagged and avoided in compliance with 36 CFR Part 800 of the National Historic Preservation Act. The Carson Ranger District consulted with the Reno-Sparks Indian Colony and Washoe Tribe of Nevada and California during separate consultation meetings with the tribal chairpersons (March 17 and 16, 2010 respectively). The tribes support the Markleevillage fuels reduction project.

### **Environmental Consequences**

Direct and Indirect Effects: The proposed action has the potential to affect ten known archaeological sites. All ten of the sites have been identified within the areas of proposed ground disturbing activities. All of the sites would be flagged to delineate site boundaries prior to any ground disturbing activities. If previously unknown sites are encountered during project activities, operations in that area would stop and the district archaeologist would be contacted. Potential indirect effects include the increased potential for looting and vandalism to cultural resources because of more visibility.

Without treatments, the risk of a high severity stand replacing fire is higher; this would allow the continued exposure of important archaeological resources to damage and destruction by catastrophic wildland fires and may constitute an adverse effect on these resources.

Cumulative Effects: No cumulative effects are anticipated, as impacts to the sites would be mitigated by avoiding the sites.

## **WILDLIFE/SENSITIVE PLANTS**

### **Affected Environment**

#### Federally Listed Threatened or Endangered Species

Informal consultation to date includes a written request to the United States Fish and Wildlife Service (USFWS), as required in 50 CFR 402.12(c), for a list of threatened, endangered, and proposed species known or likely to occur in the project area. The list was requested on July 9<sup>th</sup>, 2010 and to date has not been received. Based on literature review and local knowledge of the area, it is assumed there are no threatened, endangered, or proposed species that occur in the project area. Once received, the USFWS species list will be reviewed to assure agreement with this assumption. Any changes will be reflected in the Decision Notice/Finding of No Significant Impact.

#### Forest Service Sensitive Species

According to the biological evaluation written for this project, the project area provides potential habitat for the following wildlife and plant species listed as sensitive in Region Four: Northern goshawk, California spotted owl, flammulated owl, great gray owl, white-headed woodpecker, mountain quail, upswept, slender, and dainty moonwort.

Northern goshawks and spotted owls are both known to nest within and adjacent to Grover's Hot Springs State Park. Protected activity centers (PACs) have been designated for both species in the general area, protecting approximately 500 acres of nesting and fledging habitat. Surveys have been conducted annually for both species in this area since 2002. A single great gray owl was observed in 1979 by the State Park Ranger in the Grover's Hot Springs area (CDFG 2003).

#### Management Indicator Species

Management indicator species (MIS) are identified in the Toiyabe National Forest Land and Resource Management Plan as representing a group of species having similar habitat requirements (USDA 1986). MIS are not federally listed as threatened, endangered, or Forest Service sensitive but have the potential to be affected by project activities. A review was conducted to determine: 1) if the project is within the range of any MIS, 2) if habitat is present within the proposed project area, and 3) if there are potential direct, indirect or cumulative effects on habitat components. MIS associated with habitats that may be affected by the project are analyzed below.

The following MIS were selected for analysis for the Markleeville Fuels Reduction project due to the presence of suitable habitat for these species that may be impacted by the project: Mule deer, American marten, yellow warbler, yellow-rumped warbler, hairy woodpecker, Williamson's sapsucker, northern goshawk, and macroinvertebrates.

The following species were not selected for further analysis due to absence of habitat or because the project would not directly or indirectly affect the habitat: Palmer's chipmunk, sagegrouse, Lahontan cutthroat trout, and Paiute cutthroat trout.

### **Environmental Consequences**

#### Federally Threatened, Endangered, and Proposed Species

The project area is not known to contain habitat for any threatened, endangered or proposed species. Therefore no further analysis will be conducted for these species.

### Forest Service Sensitive Species

Northern goshawks and California spotted owls are known to nest in portions of the project area near Grover's Hot Springs State Park. Any treatment within the PACS would be subject to a limited operating period (LOP) and modified treatment prescription based on Sierra Nevada Forest Plan Amendment Standards and Guidelines (USDA 2004). Suitable habitat is also present for flammulated owls, white-headed woodpeckers, mountain quail, dainty moonwort, upswept moonwort, and slender moonwort. Specific plant surveys for moonworts have not been conducted in the project area and therefore their presence is unknown. However, moonworts are generally associated with wet, grassy areas which are not included in most of the project area. Implementation of the proposed project may impact the above listed species by disturbing breeding and foraging activities and/or disturbing habitat. However these impacts are expected to be minor, would only impact individuals, and would not lead to a trend toward Federal listing (biological evaluation, located in the project file at the Carson Ranger District). Furthermore, maintaining reduced fuel loading in these areas would help reduce the potential for a catastrophic wildfire and subsequent loss of wildlife habitat.

### Management Indicator Species (MIS) and Migratory Birds

The project area contains habitat for mule deer, American marten, yellow warbler, yellow-rumped warbler, hairy woodpecker, Williamson's sapsucker, northern goshawks and macro-invertebrates. The project area also contains habitat for several migratory songbirds associated with conifer, shrub and riparian habitat types. The proposed project includes thinning and mastication/mowing in areas that have mostly had past fuels treatments and therefore is expected to have limited and very minor impacts on MIS and/or migratory birds. Under the proposed action, mastication of brush and small diameter trees would occur only during the fall to avoid the migratory bird season and at least three snags per acre and down, large woody debris would be retained for wildlife habitat. Furthermore, maintaining reduced fuel loading in these areas would help reduce the potential for a catastrophic wildfire and subsequent loss of wildlife habitat. Therefore the proposed project would not affect habitat or lead to a downward trend in populations of the above listed MIS species (in project file at Carson Ranger District).

## **NOXIOUS/INVASIVE WEEDS**

### **Affected Environment**

Forest Service Manual 2081.02 and the Sierra Nevada Forest Plan Amendment (USDA 2004) require a noxious weed assessment be conducted when any ground disturbing actions or activities are proposed to determine the risk of introducing or spreading noxious weeds. For projects having moderate to high risk of introducing or spreading noxious weeds, the project decision document must identify noxious weed control measures that must be undertaken during project implementation. Noxious weeds are defined in FSM 2080.5 as "those plant species designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. The objective of this weed risk assessment is to evaluate each risk factor, including all the proposed actions, for their potential to introduce and/or expand noxious weeds and other invasive species into the Markleeville Project area. Factors that influence the spread of weeds and the level of risk for the project area include the following:

#### 1. Presence of weeds in and adjacent to the project area (low risk)

The project area has been surveyed for noxious weeds. A small population of tall white-top and (*Lepidium latifolium*) and bull thistle (*Cirsium vulgare*) are known to occur adjacent to Forest

Service Lands at Grover's Hot Springs State Park on California State Park lands. These infestations have been treated for numerous years by hand pulling and herbicide application. To date, only minor infestations of cheatgrass (*Bromus tectorum*) have been documented in the Markleevillage project area on National Forest System lands. Cheatgrass is widespread on other parts of the Carson Ranger District where it has established itself as a minor component in many plant communities.

2. Habitat vulnerability (low risk)

Much of the proposed project includes thinning of trees and shrubs, most which were previously thinned five to thirty years ago. All treatments would adhere to the weed prevention strategy discussed above. Furthermore, because the majority of vegetation in these areas is composed of native species the risk for noxious weed spread and/or invasion is considered minimal.

3. Vectors unrelated to the proposed project (low risk)

Weeds are most commonly vectored along roadways. Under the proposed action no new roads would be constructed which would help minimize the risk of noxious weed spread. Project equipment using existing roads would be required to be cleaned to insure it is free of soil, seeds, vegetative matter or other debris before entering National Forest system lands. The equipment would also be cleaned prior to moving from an infested treatment unit, to a unit that is free of such weeds.

4. Habitat alteration expected as a result of the project (low-moderate risk)

As mentioned above, the project includes thinning of trees and brush, mostly in areas that were previously treated. In areas where mastication is proposed, mulch layers would minimize the risk of cheatgrass germination. However, if mulch layers are more than 2-3 inches deep, natives may also be inhibited. These sites would likely need to be seeded in the future with native grasses. Risks from equipment introducing weed seeds would be reduced because of the equipment-cleaning requirement.

5. Increased vectors as a result of project implementation (low risk)

Project induced vectors include primarily vehicles, including heavy equipment, associated with the project. Again, adherence to the weed prevention strategy, including assuring all equipment entering the project site has been properly cleaned, would significantly reduce the potential for project related vectors to enter the project area. To the extent that vectored seeds actually result in weed establishment on roadsides and disturbed sites such as landings, these areas would be immediately treated by hand pulling or grubbing. These sites would continue to be monitored for several years post-treatment to assure no new infestations occur.

6. Mitigation measures (low risk)

Measures are included in the proposed action that would reduce the likelihood of weed introduction into the project area, these include: hand pulling and lopping treatments for any new infestations discovered during implementation, post treatment surveys in the vicinity of known weed infestations and areas of potentially new infestations, and adhering to project design features.

To the degree that measures such as those noted above are successfully utilized, the likelihood of invasive species becoming a significant problem in the project area is considered low.

## **Environmental Consequences**

The proposed action provides a low risk for introducing or enhancing new or existing weed populations. Design features built into the proposed action reduce opportunities for weed spread and expansion. Information gained from monitoring this and other projects is expected to further our knowledge on local weed ecology thus enabling us to better predict how Forest Service management activities influence the introduction and spread of weeds.

## **WATER/SOILS**

### **Affected Environment**

This project lies within the Pleasant Valley Creek and Hot Springs Creek hydrologic unit code (HUC) 6 watersheds. These two streams join to form Markleeville Creek, a tributary to the East Carson River. The Hot Springs Creek watershed includes Shay Creek, Musser Jarvis Creek, and Spratt Creek. Annual precipitation ranges from approximately 20 inches in Markleeville to 47 inches at the higher elevations. (WRCC 2010) Most of this precipitation comes as snow between October and May. This area also occasionally receives mid-winter rain on snow events and severe summer thunderstorms, which can result in heavy runoff. Flooding occurs on a regular basis. These events often result in landslide, debris flows and erosion of roads and streambanks (CWSD 2007).

The Alpine Watershed Group began to gather water quality data throughout the Upper Carson River Watershed in 2004. Citizen monitors have collected data quarterly on eight sites, including sampling stations on Hot Springs Creek in Grover Hot Springs Campground and Markleeville Creek below the project area. Monitoring parameters include water temperature, pH, conductivity, dissolved oxygen (DO), turbidity and E Coli. The data analysis for all sites indicates that the water chemistry parameters (temperature, pH, conductivity & DO) are within normal ranges for cold mountain streams. Turbidity values generally fell within acceptable ranges for aquatic life tolerances with the exception of two recordings during higher flows. E coli values, with the exception of Millberry Creek, did not exceed water quality standards set by the Lahontan Water Quality Control Board (Katopthis 2008). The East Fork of the Carson River in California, Markleeville Creek, and the tributaries within the project area are not currently on the California 303(d) List of Water Quality Limited Segments (LRWQCB 2006).

A stream corridor condition assessment for the Upper Carson River watershed was completed in 2004. This study was conducted by MACTEC Engineering for the Alpine Watershed Group and the Sierra Nevada Alliance (MACTEC et al. 2004). The project goal was to assess the condition of and provide information for future restoration efforts on the Carson River and its tributaries. Markleeville Creek was included in this study. The study concluded that the reach of Markleeville Creek above the town of Markleeville was impacted by a water diversion and the lack of large woody material. The reach of Markleeville/Hot Springs Creek near Grover Hot Springs is in good condition (MACTEC et al. 2004).

Soils in the project area are derived from volcanic parent material. The East Carson River watershed is characterized by steep slopes and channels that are incised into volcanic material. These volcanic soils tend to be highly erosive (CWSD 2007). MACTEC Engineering used geology and slope gradient to assess relative erodability in the Upper Carson River watershed. The results show areas of high erosion potential along steeper portions of Pleasant Valley Creek and Spratt Creek, both tributaries to Markleeville Creek (MACTEC et al. 2004). However, much of the Markleeville Creek watershed is not within areas of high erosion potential.

## **Environmental Consequences**

Direct and Indirect Effects: The use of ground-based equipment for thinning trees and masticating brush, and the use of prescribed fire can have impacts on soil and water quality. The direct and indirect effects of these actions can include soil disturbance and erosion, soil compaction, increased runoff, and sediment delivery to stream channels. The risk of impacts to soil and water would be reduced through implementation of Best Management Practices (BMPs). The water and soils measures are designed to minimize soil disturbance and protect stream channels and riparian areas. These measures include equipment exclusion zones near streams and slope limitations for equipment.

Direct and indirect effects from prescribed burning on soils and water quality can include loss of ground cover, increased erosion and runoff, increased water temperature and increased sediment delivery to stream channels (USDA 2005). The effects of fire on soil and water depend on fire severity and frequency, and on soil and site properties. Prescribed burns are designed to be low or moderate severity and generally burn in a mosaic pattern so that not all the vegetation is consumed. Riparian areas would be ignited on the outside edge so that the prescribed fire can back into the riparian vegetation towards the stream.

Pile burning, which concentrates heat on a smaller area, can have a greater effect on soil fertility and soil biota than broadcast burning. Although the severe heating under the piles are damaging to the soil, only a small percentage of the total area may be affected (USDA 2005). Pile burning in riparian areas would be limited.

The proposed action includes hand thinning trees, masticating small trees and brush, and prescribed underburning and pile burning. These activities would take place over a number of years and could be done throughout most of the 1,200 project area.

The effects to soil and water from masticating are minimal because the equipment operates over vegetation and leaves behind a layer of mulch. UC Davis and Integrated Environmental Restoration Services conducted a study on the West Shore of Lake Tahoe in 2004 to determine the effects of masticating equipment on soil compaction, runoff and erosion. The results of this study indicate that erosion effects from mastication are slight to insignificant when a layer of woodchip mulch is left on the ground surface (Hatchett et al. 2006).

Prescribed fire, including both broadcast and pile burning, could occur on up to 1200 acres, though it is likely that not all of this acreage would be suitable for burning. In addition, this burning would be spread out over a number of years. It is likely that some impacts to soil and water quality would occur from prescribed burning. Implementation of the project design features would lessen these impacts. It is anticipated that in the long term water quality and soil quality would be maintained.

If no action is taken it is assumed that all or part of this area would burn as a wildfire. High severity wildfires can remove much of the vegetation, along with duff and litter from the forest floor. Wildfires are usually more severe than prescribed fire and, as a result, they are more likely to produce significant effects on soil and water quality. Following wildfires, flood peak flows can increase substantially, affecting stream physical conditions, aquatic habitat and human health and safety (USDA 2005). Soil erosion would likely increase, along with streambank erosion from increased flows.

Cumulative Effects: Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions. Past, present and future activities and natural disturbances in a watershed can contribute to sediment delivery to streams, resulting in degradation of water quality and aquatic habitat. Cumulative effects were analyzed using the equivalent roaded area (ERA) method developed by the U.S. Forest Service Region 5 (USDA 1990). When utilizing the ERA model, all landscape disturbances are evaluated in comparison to a completely impervious, or roaded, surface. Road surfaces are considered to represent maximum hydrologic disturbance and rainfall-runoff potential.

The present actions assessed in this cumulative watershed effects (CWE) analysis include prescribed burning, brush mastication, and roads and trails. In addition, residential areas within the watersheds and the Grover Hot Springs State Park campground were also considered. These components are assigned disturbance coefficients that represent a typical ratio of their hydrologic impact compared to the same roaded area. Past actions included in the CWE analysis were previous timber sales and mastication projects. The ERA model includes a recovery factor over time. Burned areas typically recover faster than areas of timber harvest. The Plumas National Forest has used a 25 year recovery for timber harvest and five years for wildfire (USDA 2008).

Two subwatersheds were delineated for analysis of cumulative watershed effects. The Spratt Creek subwatershed includes Spratt Creek, Musser and Jarvis Creek, and short reach of Hot Springs Creek and an unnamed intermittent tributary north of Hot Springs Creek. This subwatershed is 5,400 acres. The Hot Springs Creek subwatershed includes Shay Creek, Sawmill Creek, Buck Creek, a reach of Hot Springs Creek and several unnamed intermittent tributaries. A small part of the project area along Pleasant Valley Creek was not included in this CWE analysis.

Threshold of Concern: Watershed sensitivity is an estimate of a watershed's natural ability to tolerate land use impacts without increasing the risk of cumulative impacts to unacceptably high levels. Measures used to evaluate watershed sensitivity for individual watersheds included the potential for 1) soil erosion, 2) high intensity and/or long duration precipitation events, including rain-on-snow, 3) landslides and debris flows and 4) channel erosion within alluvial stream channels (USDA 1990).

Watershed response to elevated levels of ground disturbance may begin to negatively impact downstream channel stability and water quality. To describe the level of disturbance when such impacts may begin to occur, upper estimates of watershed "tolerance" to land use may be established based on basin-specific experience, comparison with similar basins, and modeling of watershed response. These indices of tolerable levels of disturbance are called thresholds of concern (TOC). The tolerance of a watershed is used to determine acceptable levels of disturbance and prescribe mitigation measures to prevent detrimental responses. The TOC does not represent an exact level of disturbance above which cumulative watershed effects would occur. Rather, it serves as a "yellow flag" indicator of increased risk of adverse cumulative effects occurring within a watershed. Thresholds of concern have not been determined for watersheds on the Carson Ranger District. However, National Forests in the Sierra's generally use TOC values that range from 10 to 14 percent of a watershed (USDA 1990).

The results of the CWE analysis indicate that the ERA for both watersheds is approximately four percent. This ERA is well below the threshold of 10 percent described above. Based on this analysis it can be assumed that the cumulative effects from this project would be minimal.

## **VISUAL RESOURCES**

### **Affected Environment**

A Visual Quality Objective (VQO) is a resource management objective that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO's are commonly used: maximum modification, modification, retention, partial retention and preservation.

- Maximum modification permits a dominant change to the original landscape, particularly in the foreground and middle-ground.
- Modification allows alterations to dominate the original characteristic landscape. However, alterations must borrow from natural line and form to such an extent and on such a scale that they are comparable to natural occurrences. The activities may be visually dominant but must conform to the natural character of the landscape in the fore- and middle-ground.
- Partial retention requires that alterations remain visually subordinate to the characteristic landscape. Repetition of the line, form, color and texture is important to ensure a blending with the dominant elements. Requires that activities be visually subordinate to the natural character of the landscape.
- Retention requires that management activities or alterations not be visually apparent. The goal is to repeat the line, form, color and texture of the characteristic landscape. Requires that the activities are not visually evident and the landscape retains a natural appearance.
- Preservation requires that no visible change occur in the landscape from forest development practices.

Distance zones used in VQO designations include: a) foreground – defined as within 0.5 miles of the observer; b) middle ground – defined as the distance between 0.5 and 3 miles; and c) background – defined as the distance beyond the middle ground.

The majority of the project area is viewed by forest visitors and vehicle occupants driving along Hot Springs, Spratt Creek or Pleasant Valley Roads. Portions of the project area can also be viewed by local residents and visitors to the forest and Grover Hot Springs State Park.

Based on the Toiyabe National Forest Land and Resource Management Plan VQO's (USDA 1986), approximately 57 percent of the project area is located within partial retention and 43 percent is located within modification. Because of the project's close proximity to roads, the project area is located within the fore and middle ground distance zones.

Numerous alterations occur within the project that deviate the area from a natural appearance. Natural alterations include fire scars and insect infestations. Human alterations include the obvious areas of planted trees (plantations), previous fuels reduction and forest health improvement projects, utility corridors, roads, trails, and a summer residence.

**Environmental Consequences**

Direct and Indirect Effects: Overall, the maintained reduction in fuels would enhance visual objectives in the area by maintaining the reduced risk of a stand replacing wildland fire. In areas where brush and small tree mastication or cutting occurs, some un-natural lines would be evident and adversely affect visual quality in the short term, but would have long term positive impacts. Feathering tree and brush densities from lighter to heavier treatments would assist with reducing adverse impacts. In areas where prescribed burning occurs, short term adverse impacts would be related to smoke and a charred landscape. This would be short term in nature and the long term impacts would be positive. With no treatments, the risk of a wildland fire would increase and scenic integrity would be degraded due to charred, dead trees on the landscape.

Cumulative Effects: Past, present and reasonably foreseeable future actions that may have a cumulative effect on visuals include existing roads and their maintenance, hazardous fuels reduction projects on Forest Service and private lands, as well as private residences and developments adjacent to the Forest Service. Hazardous fuels reduction projects on the various jurisdictions may have short term adverse impacts, but would provide long term positive impacts due to the reduced risk of a high severity wildland fire. The proposed action would have a positive cumulative impact by maintaining a vegetated condition.

**TRANSPORTATION SYSTEM**

**Affected Environment**

In 2008, the Carson Ranger district published a motor vehicle use map; this map identifies roads, trails and areas designated for motor vehicle use and also identifies other public roads (MVUM 2008). There are approximately five miles of designated roads within the project area. These roads, along with the length in the project area and their status are displayed in table 3-3.

**Table 3-3.** Existing roads within the project area.

Road #	Road Name	Length Within Project Area (miles)	Jurisdiction	Current Status
31071	Spratt Creek Road	1.9	Forest Service	Open
31094	Pleasant Valley Road	1.1	County	Open
31016	Hot Springs Road	1.8	County	Open
31016A	Hot Springs Road Spur	.59	Forest Service	Open

## **Environmental Consequences**

Direct/Indirect Effects. The Markleevillage Fuels Reduction project makes no road management decisions for those roads that would be used by the project. No new roads would be constructed and no roads would be decommissioned. The result would no net gain or loss in open road densities. Routes used for removal of fuelwood would include Hot Springs Road, Pleasant Valley Road and Spratt Creek Road. Portions of the project area have been within previous fuelwood removal areas; therefore average daily traffic volume is not expected to significantly increase.

Cumulative Effects: Access for timber and firewood harvest and westward expansion began in the 1850's. Users created roads; some declined in condition from non-use and are now non-existent, while others are now major vehicle routes.

Potential road closures as part of Motor Vehicle Use Map may occur in the future. This project would have no effect on this; this project proposes to use roads identified as open or administrative use or non Forest System roads such Hot Springs and Pleasant Valley roads. The proposed action would have no adverse cumulative impacts to the transportation system or open road densities.

## **RECREATION**

### **Affected Environment**

The project area is located adjacent to Markleeville, California, a popular summer and winter recreational area.

Recreation uses in the project area include opportunities such as dispersed camping, picnicking, hiking, horseback riding, off highway vehicle use, cross-country skiing, snowshoeing and snowmobiling.

There is approximately 500 feet of one designated trail in the project area, this trail is located at the end of Spratt Creek road and leads into the wilderness area. The project is also adjacent to Grover Hot Springs State Park which includes a campground and hot springs.

### **Environmental Consequences**

Direct/Indirect Effects: Direct effects from implementing this project may include temporary closures of dispersed camping areas, and special use permits and group events during project implementation activities. Smoke from prescribed fire operations may enter the dispersed camping areas and recreational areas depending on the timing and location of the prescription. Signing of roads for public safety during project operations would minimize direct effects.

With no action, the risk of a catastrophic wildland fire is increased. Recreational activities would be less desirable if the forest and shrub characteristics of the area were burned down.

The proposed action would help to maintain current recreation opportunities. Existing roads would continue to be open for non-motorized and motorized activities, and trails would continue to be open to hiking and horseback riding. This project would reduce the risk of catastrophic fire that could damage or destroy the forested character that attracts people to this area for the many recreational opportunities.

Cumulative Effects: There are no foreseen cumulative impacts to recreation under the proposed action.

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## CHAPTER 4 CONSULTATION WITH OTHERS

The opportunity for public participation in the analysis of this project was initiated through publication in the Schedule of Proposed Actions in 2010. A 30-day public scoping period began on February 25, 2010, with the Notice of Proposed Action/Scoping Information mailed to 195 individuals, organizations or agencies. This document was also available on the World Wide Web at: [www.fs.fed.us/r4/htnf](http://www.fs.fed.us/r4/htnf). In addition, a public meeting was held on March 10th, 2010.

Federal, State, County and tribal agencies and organizations involved in during the development of this environmental assessment included:

### **Tribal**

Washoe Tribe of Nevada and California

Reno-Sparks Indian Colony

### **Federal**

U.S. Fish and Wildlife Service

### **State/County**

Alpine County Board of Supervisors

California State Parks

California State Historic Preservation Office

### **Organizations**

Alpine Fire Safe Council

## **WHO MAY FILE AN OBJECTION**

Under the regulations of 36 CFR 218.6 governing the Predecisional Administrative Review Process for authorized HFRA projects, only individuals and organizations who submitted specific written comment related to the project may file an objection to the project.

## **LIST OF PREPARERS**

Amanda Brinnand - Forester

Beth Nabors – Fuels Planner

Maureen Easton – Wildlife Biologist

Sally Champion – Hydrologist

Joe Garrotto – Archeologist

Steve Howell – Fuels Specialist

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## CHAPTER 5

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## APPENDIX A RESPONSE TO COMMENTS

**COMMENTS: Jennifer Johnson (Washoe Tribe of Nv and Ca)**

**Comment:** Supports the project as it provides for reduced wildland fire hazard and reduced fuel loadings. Also supports the efforts to reduce the risk to high-intensity wildfire which could have adverse effects on the natural and cultural resources in the area. If artifacts are found, stop work and contact the Washoe Tribe's cultural resource coordinator.

**Response:** In compliance with federal regulations, operations would stop and the district archaeologist would be contacted if archaeological artifacts are discovered during project implementation. The district archaeologist would keep in contact with the Tribal Historic Preservation Officer to discuss any unanticipated discoveries during project implementation.

**COMMENTS: Fritz and Nancy Thornburg**

**Comment:** Supports the project and have been urging the Forest Service to take such as action for many years. Project will improve the forest health of this area and reduce the threat of catastrophic wildland fire.

**Response:** The proposed action provides for a reduced wildland fire hazard, fuel loading and ladder fuels within the project area by removing ladder fuels. Forest health would be somewhat improved by removal of successfully insect attacked trees and reduced stand densities. Refer to Vegetation Environmental and Fire/Fuels Environmental Consequences in chapter 3.

**COMMENTS: Anne Holden (California Regional Water Quality Control Board, Lahontan Region).**

**Comment:** Be aware that in May 2009, the Board adopted Order No. R6T-2009-0029 (the 2009 Timber Waiver). This project would require coverage under the 2009 Timber Waiver before project activities commence.

**Response:** The Forest Service would comply with Timber Waiver requirements.