

**794-Lily Gap Forest  
Health Project Phase II  
Calaveras County**

Map labels include:  
- Roads: Fiddletown Rd, Shake Ridge Rd, Amador, Ridge Rd, Calaveras, State Highway 88, State Highway 49, CA-26, Highway 4, Highway 12, Mountain Ranch Rd, CA-4.  
- Towns: Fiddletown, El Dorado, Volcano, Pioneer, West Point, Wilseyville, Glencoe, Jackson, Mokelumne Hill, San Andreas, Mountain Ranch, Arnold, Avery Hathaway Pines.  
- Landmarks: Calaveras Big Trees State Park.  
- Other: Calaveras Telephone.

**STATE OF CALIFORNIA  
SIERRA NEVADA CONSERVANCY**

**Sierra Nevada Conservancy Grant Program  
Safe Drinking Water, Water Quality and Supply, Flood Control,  
River and Coastal Protection Bond Act of 2006 (Proposition 84)**

**Applicant:** Bureau of Land Management, Motherlode Field Office

**Project Title:** Lily Gap Forest Health Project, Phase II

**Subregion:** South Central

**County:** Calaveras

**SNC Funding:** \$185,000.00

**Total Project Cost:** \$197,450.00

**Application Number:** 794

**Final Score:** 97

**PROJECT SCOPE**

The Bureau of Land Management's (BLM) Lily Gap Forest Health Project, Phase II will use Sierra Nevada Conservancy (SNC) grant funds to treat approximately 200-acres of the 420-acre Lily Gap Forest Health Project. The area is located on BLM-administered public lands near the town of West Point in Calaveras County, California, on forested slopes within the Mokelumne River Watershed on the south rim of the North Fork Mokelumne River Canyon. It is within the wildland urban interface (WUI) near several small towns and dozens of private residences.

Implementation of this Phase II Project will result in the protection and restoration of 200-acres immediately to the north of the Phase I site, where treatment of 157-acres was completed in 2013. The Phase II Project area has not experienced fire in decades, leading to dead brush, slash and litter in the understory surrounding dense thickets of conifers. Upon completion, this project will recreate pre-suppression forest conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and reduce erosion resulting in the protection and restoration of a portion of the Mokelumne River Watershed.

Harvest of material for woody biomass utilization such as electric power generation and shaved animal bedding will occur throughout the project area where it is most economically feasible. Harvest of saw logs, if any, is expected to be limited as was the case in the Phase I implementation of the larger project. Any revenue produced from the sale of saw logs will be used to offset the cost of the fuels reduction activities. Otherwise fuels reduction treatment methods will include use of a brush chipper with pile burning and mechanical mastication. It will also provide a demonstration of a dozer

and brush rake to pile vegetation in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds, and retains coarse woody debris for wildlife habitat.

All treatments will conform to the recommendations of the United States Forest Service’s General Technical Report 220, An Ecosystem Management Strategy for Sierra Mixed-Conifer Forests.

This project has been endorsed by the Amador Calaveras Consensus Group, a successful forest collaborative that has participated in the development and implementation of numerous healthy forest projects. The SNC has invested significant resources in this collaborative effort.

### PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
<b>Contracting</b> Prepare government estimate, prepare and post statement of work, conduct bidder site visits, review timely bids, select and award contract.	October 2014 – March 2015
<b>Forest Treatments 2015-2016</b> Thin white fir, Douglas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 100 acres.	October 2015 – April 2016
<b>Pile Burning Spring 2016</b> Burn plies of residual forest waste and slash prior to fire season.	April 2016
<b>Forest Treatment 2016 - 2017</b> Thin white fir, Douglas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 100 acres.	October 2016 – December 2016
<b>Pile Burning Spring 2017</b> Burn plies of residual forest waste and slash prior to fire season.	January 2017 – March 2017
<b>Final Site Clean-up and Restoration</b> Complete final removal of biomass and project cleanup by start of fire season	April 2017
<b>Progress Reports</b> Prepare six – months progress reports describing accomplishments to date	April 1, 2015, October 1, 2015, April 1, 2016, October 1, 2016,
<b>Final Report</b>	April 1, 2017
<b>FINAL PAYMENT/FINAL PAYMENT REQUEST</b>	<b>April 1, 2017</b>

## PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct*	
Project Management/Forestry and Fuels Staff	\$26,000
Project Timber Contractor	\$120,250
Pile Burning	\$8,000
Equipment including Fleet	\$5,000
Indirect**	
Monitoring	\$3,000
Administrative***	
Contracting, clerical and natural resource staff salaries	\$22,750
<b>GRAND TOTAL</b>	<b>\$185,000</b>

\* Direct: Direct costs are expenses necessary to acquire, construct, or to adapt property to a new or different use, or to improve property including land, buildings and equipment. The property/expense must have a useful life longer than one year.

\*\* Indirect: Expenses involve ongoing operations, repair or maintenance costs, regardless of whether the repair or maintenance may last more than one year.

\*\*\* Administrative: Expenses associated with the administration of a project and may not exceed 15 percent of the total SNC grant request for direct and indirect costs.

## PROJECT PERFORMANCE MEASURES

There are four Performance Measures common to all grants. In addition, grantees are required to include between one and three project-specific measures. Performance Measures listed here represent those proposed by applicants and may be modified through further discussion with SNC Staff.

- Acres of Land Improved or Restored

**Initial Study/Mitigated Negative Declaration:  
Lily Gap Forest Health Project, Phase 2**

*Lead Agency*

Sierra Nevada Conservancy  
11521 Blocker Drive, Suite 205  
Auburn, CA 95603  
Contact: Matthew Daley, Senior Grants Analyst  
530-823-4698

September 2014



# NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE PROPOSED LILY GAP FOREST HEALTH PROJECT, PHASE 2

Public Notice is hereby given that an Initial Study and Draft Mitigated Negative Declaration (IS/MND) is available for public review for the Lily Gap Forest Health Project, Phase 2.

**Project Location:** The proposed project is located on 200 acres within the overall 420-acre Lily Gap Forest Health Project located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands. The proposed project is adjacent to the Mokelumne River, located off of Lily Gap Road/Winton Road, approximately two miles northeast of the town of West Point, in the central Sierra Nevada foothills, Calaveras County, California. The parcel is located within the Wildland Urban Interface. Township (T) 7 North (N), Range (R) 13 East (E), Section 25, Mount Diablo Base and Meridian. Latitude / Longitude: 38.430216 / -120.451233.

**Project Description:** The BLM is requesting approximately \$185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lily Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lily Gap Forest and Watershed Health Project, and is part of the Lily Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lily Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades. This proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200 acres of fuel reduction within the overall 420 Lily Gap. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as in electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. Refer to Section 2.0, *Project Description*, of the Initial Study for a detailed project description.

**Document Review and Availability:** The public comment period began July 9, 2014 and extended to August 7, 2014. The MND will be considered by the Sierra Nevada Conservancy Governing Board at a public meeting on September 4, 2014 located at the Bridgeport Memorial Hall, 73 N. School Street, Bridgeport, CA 93517.

Questions regarding the September 2014 Governing Board meeting may be provided to Matthew Daley, Senior Grants Analyst, at [Matthew.Daley@sierranevada.ca.gov](mailto:Matthew.Daley@sierranevada.ca.gov) or at the following address:

Sierra Nevada Conservancy  
11521 Blocker Drive, Suite 205  
Auburn, CA 95603



# MITIGATED NEGATIVE DECLARATION

**Project Title:** Lily Gap Forest Health Project, Phase 2 (SNC 794)

**Project Location:** The proposed project is located on 200 acres within the overall 420-acre Lily Gap Forest Health Project located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands. The proposed project is adjacent to the Mokelumne River, located off of Lily Gap Road/Winton Road, approximately two miles northeast of the town of West Point, in the central Sierra Nevada foothills, Calaveras County, California. The parcel is located within the Wildland Urban Interface. Township (T) 7 North (N), Range (R) 13 East (E), Section 25, Mount Diablo Base and Meridian. Latitude / Longitude: 38.430216 / -120.451233.

**Date:** September 4, 2014

**Project Applicant:** United States Department of the Interior, Bureau of Land Management, Mother Lode Field Office.

**Lead Agency:** Sierra Nevada Conservancy

**Contact Person:** Matthew Daley, Senior Grants Analyst, Sierra Nevada Conservancy, (530) 823-4698

**Project Description:** The BLM is requesting approximately \$185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lily Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lily Gap Forest and Watershed Health Project, and is part of the Lily Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lily Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades. This proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200-acres of fuel reduction within the overall 420-acre project site. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as in electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. Refer to Section 2.0, *Project Description*, of the Initial Study for a detailed project description.

**Declaration:** The Sierra Nevada Conservancy has determined that there is no substantial evidence that the above project, as mitigated, may have a significant effect on the environment and the Sierra Nevada Conservancy proposes that a Mitigated Negative Declaration be adopted. The determination is based on the attached initial study and the following findings:

- a) *The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.*
- b) *The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*
- c) *The project will not have impacts that are individually limited, but cumulatively considerable.*
- d) *The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.*
- e) *No substantial evidence exists that the project will have a significant negative or adverse effect on the environment.*
- f) *The project incorporates mitigation measures identified in the initial study and the Lily Gap Demonstration Project Environmental Assessment/Finding of No Significant Impact prepared by the United States Department of the Interior, Bureau of Land Management, Mother Lode Field Office.*
- g) *This mitigated negative declaration reflects the independent judgment of the lead agency.*

**Submit comments to:**

Matthew Daley

Senior Grants Analyst

**Sierra Nevada Conservancy**

11521 Blocker Drive, Suite 205

Auburn, CA 95603

(530) 823-4698

Matthew.Daley@sierranevada.ca.gov

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Jim Branham, Executive Officer

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(530) 823-4670

Phone #

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# 1.0 INTRODUCTION

## 1.1 PROJECT INFORMATION

### 1. Project Title:

Lily Gap Forest Health Project, Phase 2 (SNC 794)

### 2. Lead Agency Name and Address:

Sierra Nevada Conservancy  
11521 Blocker Drive, Suite 205  
Auburn, CA 95603

### 3. Contact Person and Phone Number:

Matthew Daley, Senior Grants Analyst (530) 823-4698

### 4. Project Location:

The proposed project is located on 200-acres within the overall 420-acre Lily Gap Forest Health Project located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands. The proposed project is adjacent to the Mokelumne River, located off of Lily Gap Road/Winton Road, approximately two miles northeast of the town of West Point, in the central Sierra Nevada foothills, Calaveras County, California. The parcel is located within the Wildland Urban Interface. Township (T) 7 North (N), Range (R) 13 East (E), Section 25, Mount Diablo Base and Meridian. Latitude / Longitude: 38.430216 / -120.451233.

### 5. Project Sponsor's Name and Address:

United States Department of the Interior  
Bureau of Land Management  
Mother Lode Field Office  
5152 Hillside Circle  
El Dorado Hills, CA 95762

### 6. General Plan Designation:

Natural Resource Land: Timber-Mineral Resource Area, 2A-Dam Inundation

### 7. Zoning:

Unclassified (U)

### 8. Description of Project:

The BLM is requesting approximately \$185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lily Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lily Gap Forest and Watershed Health Project, and is part of the Lily Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lily Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades. This proposed project

would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200-acres of fuel reduction within the overall 420 Lily Gap. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, *An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests*. Refer to Section 2.0, *Project Description*, for a detailed project description.

Due to the proposed project area's relatively low elevation (approximately 3,500 feet above mean sea level), the proposed project would be implemented after the end of the fire season, generally between mid-fall and late spring. The anticipated start date is late 2014 and would continue over a two year period, with completion by Spring 2016. Final site cleanup and restoration would occur by June 2016.

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

The proposed project is within BLM-administered lands off of Winton Road, north of the community of West Point referred to as the Lily Gap area. Much of this area has not experienced wildfire in decades. Shrub stands have aged and now contain a larger proportion of dead fuels, and in some forest stands understory fuels have increased, creating unhealthy forest conditions and making the probability that the area will experience a devastating wildfire more likely. At the same time, the local communities have grown. There are now numerous private residences in the area, many of them adjacent to the BLM-administered parcels containing dense fuels. The Lily Gap area is considered to be within the Wildland Urban Interface and the local communities are considered "at risk."

#### **10. Other public agencies whose approval is required:**

United States Department of the Interior, Bureau of Land Management\*

Calaveras County Air Pollution Control District

\*Approved the Environmental Assessment/Finding of No Significant Impact (NEPA) in 2011

## **1.2 PROJECT BACKGROUND AND PREVIOUS ENVIRONMENTAL DOCUMENTATION**

### **1.2.1 Project Background**

The overall Lily Gap Forest Health Project (Phase 1 and Phase 2) has been approved by the U.S. Department of the Interior (DOI) Bureau of Land Management (BLM) and endorsed by the Amador Calaveras Consensus Group (ACCG), a forest collaborative that has implemented numerous healthy forest projects with the participation of federal and state agencies, local jurisdictions, non-governmental organizations and private businesses. The Lily Gap Forest Health Project is consistent with the

ACCG's All Lands - Triple Bottom Line approach, as well as the Amador Calaveras Cooperative Association for Biomass Utilization's community economic development work.

The proposed project is also a key component of the watershed health strategy currently being developed by the interagency Mokelumne Avoided Cost Analysis (MACA) team. The MACA team consists of a diverse group of stakeholders that include land managers (United States Forest Service, Bureau of Land Management, Sierra Pacific Industries), water and electric utilities (East Bay Municipal Utility District, Pacific Gas & Electric, California Department of Water Resources, California Department of Forestry and Fire Protection, and county governments), environmental organizations (Sustainable Conservation, Environmental Defense Fund), and local stakeholders (Foothill Conservancy, ACCG, West Point Fire District), and is led by the United States Forest Service, Sierra Nevada Conservancy, and The Nature Conservancy.<sup>1</sup> MACA's purpose is to determine how upper Mokelumne River watershed conditions affect forest health, fire risk, erosion potential and other factors directly impacting water users, including major utilities. The MACA team identified a number of agency projects that could improve the health of surrounding forests, reduce erosion and fire risk and thereby improve water quality and protect related infrastructure. The proposed project is one of the projects being considered by the MACA team. It is located in an area in need of immediate forest treatments to provide for the protection and restoration of the Mokelumne River drainage, lakes and reservoirs along the river, and other natural resources within the watershed.

### 1.2.2 Previous Environmental Documentation

The United States Department of Interior, Bureau of Land Management, Mother Lode Field Office acted as Lead Agency under the National Environmental Policy Act (NEPA) in March 2011 and prepared an Environmental Assessment (EA) and adopted a Finding of No Significant Impact (FONSI) and a Decision Record in May 2011. This Initial Study and Draft Mitigated Negative Declaration (IS/MND) relies on the BLM EA/FONSI and Record of Decision for the Lily Gap Project (addressing Phase 1 and Phase 2), and the following environmental documentation, included in the Sierra Nevada Conservancy files:

- *Botanical Resources Inventory Report for the Lily Gap Fuels Reduction and Biomass Project*, August 25, 2010.
- *Section 106 Compliance for the Lily Gap Biomass Demonstration Project Memorandum (BLM Case # CA-018-S-AC-10/05)*, October 29, 2010. (CONFIDENTIAL)
- *Lily Gap Biomass Demonstration Project Environmental Assessment (CA-180-10-25)*, April 2011
- *Lily Gap Biomass Demonstration Project Finding of No Significant Impact (CA-180-10-25)*, signed May, 2, 2011.
- *Lily Gap Biomass Demonstration Project (CA-180-10-25) Decision Record*, signed May 2, 2011.
- *Sierra Resource Management Plan (RMP)/Final Impact Statement (EIS)*, Publication Index No.: BLM/CA/ES-2007-013+1790EPC EIS Control No.: FES 07-18, May 2007.
- *Biological Resources Inventory Report for the Lily Gap Fuels Reduction and Biomass Project*, May 15, 2014.
- *Supplemental Botanical Resources Inventory Report for the Lily Gap Fuels Reduction and Biomass Project*, May 19, 2014.

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<sup>1</sup> Buckley, M., N. Beck, P. Bowden, M. E. Miller, B. Hill, C. Luce, W. J. Elliot, N. Enstice, K. Podolak, E. Winford, S. L. Smith, M. Bokach, M. Reichert, D. Edelson, and J. Gaither. 2014. "Mokelumne watershed avoided cost analysis: Why Sierra fuel treatments make economic sense." A report prepared for the Sierra Nevada Conservancy, The Nature Conservancy, and U.S. Department of Agriculture, Forest Service. April 10, 2014. *Sierra Nevada Conservancy*. Auburn, California. Online: <http://www.sierranevadaconservancy.ca.gov/mokelumne>.



## 2.0 PROJECT DESCRIPTION

The proposed project is located on 200 acres within the larger 420-acre Lily Gap Forest Health Project. This total 420 acre project area is located on United States Department of the Interior, Bureau of Land Management (BLM) administered public lands on forested slopes adjacent to the Mokelumne River in unincorporated Calaveras County, California. The project site is located off of Lily Gap Road/Winton Road, approximately two miles north east of the town of West Point, in the central Sierra Nevada foothills. The proposed project would allow BLM to address 200 acres immediately to the north of the Lily Gap Forest Health Project Phase 1 site.

BLM intends to recreate pre-suppression conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and thereby prevent erosion and enhance forest health within the Mokelumne River Watershed. Phase 1, a 157 acre treatment area, was completed in July 2013. Phase 2 (the proposed project) includes 200-acres of fuels reduction. Treatment methods include the use of a brush chipper with pile burning (on approximately 100 acres) and mechanical mastication (on approximately 100 acres). Harvest of material for woody biomass utilization such as in electric power generation and as shavings for animal bedding would occur throughout the project area where it is most economically feasible. The proposed project would also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds, and retains coarse woody debris for wildlife habitat. All treatments would conform to the recommendations of the United States Forest Service's General Technical Report 220, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests.

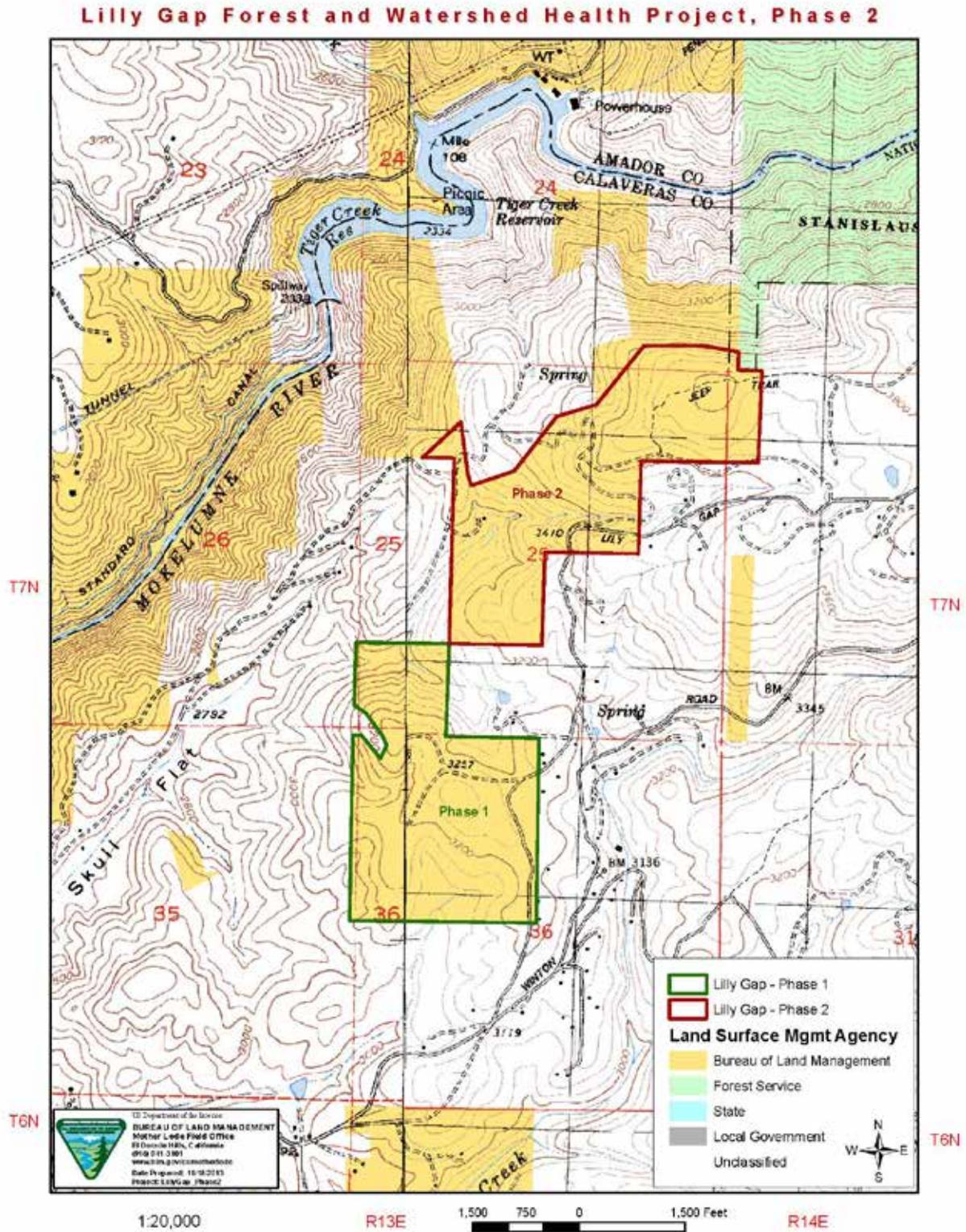
Due to the proposed project area's relatively low elevation (approximately 3,500 feet), the proposed project would be implemented after the end of the fire season, generally between mid-fall and late spring. The anticipated start date is late 2014 and would continue over a two year period, with completion by Spring 2016. Final site cleanup and restoration would occur by June 2016.

### 2.1 TREATMENTS

Vegetative treatments are designed to decrease fuel loads and stand densities in order to restore the landscape to a healthy, diverse, fire-resilient one that would aid in disrupting severe wildfires that may occur around the Wildland Urban Interface. This would be accomplished by reducing surface and ladder fuels, promoting and maintaining heterogeneity at multiple scales, maintaining and improving habitat for sensitive wildlife species, improving watershed function and resilience, and restoring native species composition.

BLM proposes to treat Lily Gap as a "demonstration project," that is, as a venue for applying a variety of different treatment methods to determine which are the most ecologically effective and economically feasible. Regardless of the treatment method demonstrated, the goal would be to create healthy forest conditions within the project area by applying the management ideas of North et al. (2009) (see Appendix A). All treatment methods would be conducted in accordance with the Silvicultural Prescriptions described in Appendix A, as well as those discussed in the United States Forest Service's General Technical Report 220.

**Figure 2-1. Project Vicinity and Location Map**  
 (Source: BLM Mother Lode Field Office)



### 2.1.1 Silvicultural Strategy

The silvicultural strategy laid out in Appendix A would be applied to all portions of the project area that have the characteristics of a Sierran mixed-conifer/lower montane forest type. Dead and decadent stands of manzanita and other brush would be removed. All oaks would be retained regardless of canopy position unless they constitute a potential ladder fuel. Other tree species such as madrone and dogwood would be left to create diversity.

Most conifers less than 8 inches diameter at breast height (DBH) would be removed, although a full range of conifer size and age classes would be maintained as part of the treatment. This includes the dense thickets of incense-cedar and pine. Some conifers less than eight inches DBH would be retained to ensure that a full range of size and age classes would be represented. Large pines and groups of large pines would be retained, with strategic clearing of potential ladder fuels around them to give them additional protection and to create some open gaps in the canopy. This means that some trees greater than 8 inches DBH would be removed if they are potential ladder fuels and to decrease overall stand density. Any conifers greater than 8 inches DBH that are to be removed to protect the larger "leave" trees and tree clusters would be marked by a BLM forester or fuels specialist. The cut trees would be sold at their highest and best use. Trees larger than 12 inches DBH generally would be sold as sawtimber.

A higher density of tree stems and canopy cover would be retained in the cooler, moister microsites, such as along the prominent drainage (outside of the riparian buffer) near the center of Section 25. Defect trees, snags, and downed logs would be retained for wildlife to the extent feasible. In particular, snags greater than 24 inches DBH provide hiding, denning, nesting, and food storage sites for a variety of wildlife. These large snags would be retained, unless to do so would create an unusually unsafe concentration of fuels.

### 2.1.2 Treatment Methods

The different treatment methods are outlined below. The majority of the work would be done by a hand crew (i.e., BLM fuels crew, inmates, Hotshots, contractors, etc.) under the supervision of BLM's fuel/fire management specialists. Any combination of the following treatments could be implemented for the proposed project.

- *Brush Chipper with Pile Burning.* The crew would feed cut vegetation into a rubber-tracked brush chipper staged on existing roads. The crew would pile and prep vegetation in six-foot by six-foot piles for burning at a later date in accordance with a BLM-approved burn plan and other BLM policy. Approximately 60 piles per acre would be constructed.
- *Mechanical Masticator.* A mechanical masticator would be used to grind, chip, and chew vegetation. The masticated vegetation would be broadcasted across the project area, leaving an altered fuel type, which does not reduce the quantity of fuels, but rearranges them so they are more manageable in the event of wildfire suppression. Equipment selected to carry out this task would be designed to minimize ground disturbance. Multiple cutting attachments would be used to adapt to the terrain and fuels.
- *Biomass.* Biomass size material may be harvested and transported to the biomass plant (Buena Vista Biomass Power Facility) near Ione. Fallers would use chainsaws to cut brush and trees less than 8 inches DBH (unless the trees are a potential ladder fuel that threatens the larger "leave" pines). Cut vegetation would be bucked into manageable lengths for the crew to feed into a rubber-tracked chipper. The chips would be fed directly into a trailer towed by a small rubber-tracked vehicle. The vehicle would tow the chips to designated staging areas (existing roads, pullouts, and landings). The chips would then be loaded into a semi-truck trailer and transported to the biomass plant.

- *Biomass Using Feller Buncher.* Another method for harvesting biomass involves a feller buncher, a tractor with an attachment that can rapidly cut and gather several trees. The feller buncher would cut and position trees and other vegetation into piles at the harvest site. A rubber-tracked skidder would then move the vegetation from the harvest sites to designated staging areas (existing roads, pullouts, and landings). Here, a large-scale tub grinder would chip the vegetation directly into the trailer of a semi-truck for transport to the biomass plant near Ione. Trees of larger diameter, which could be utilized as sawtimber, would be loaded on log trucks to be hauled to the closest mill. It would be necessary to create tracks into the project area to access harvest sites and to transport vegetation from the harvest sites to the designated staging areas for further processing and loading. Ground disturbance would occur in areas where tracks would be needed to drive heavy equipment into the harvest areas to transport vegetation to designated staging areas. Ground disturbance would be kept to a minimum and would occur only where necessary. No new roads would be built. The number of new tracks into the project area would be minimized. The tracks would be put to bed after work at the harvest site is completed. Only existing roads, pullouts, and landings would be used as designated staging areas.
- *Dozer and Brush Rake.* BLM would demonstrate, for the public, the use of a dozer and brush rake to pile vegetation for chipping and biomass utilization in a five-acre area of project site.

### 3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this proposed project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

#### DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

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.

\_\_\_\_\_  
Jim Branham, Executive Officer

\_\_\_\_\_  
Date



## 4.0 EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a) Earlier Analysis Used. Identify and state where they are available for review.
  - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
  - a) the significance criteria or threshold, if any, used to evaluate each question; and
  - b) the mitigation measure identified, if any, to reduce the impact to less than significance.



	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. AESTHETICS:</b> Would the project:				
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"/>

a, c.) **Less Than Significant.** The proposed project is near the boundary of the Stanislaus National Forest. There are numerous residences on private land in the general area, including along the boundaries of BLM-administered land within the project area. The level of recreational use in the project area is considered to be low, although off-highway use has occurred throughout the project area. The North Fork of the Mokelumne River is located approximately one mile to the west of the project area. BLM has recommended that the river, from Tiger Creek Reservoir to State Route (SR) 49 be incorporated into the National Wild and Scenic River System.

BLM manages this area in accordance with Class III Visual Resource Management (VRM) standards. BLM's objective for Class III is to partially retain the existing character of the landscape. Management activities are designed to not dominate the view of the casual observer.

The proposed project is visible primarily from Lily Gap Road and is not known for its visual resources. Dead and decadent stands of manzanita and other brush would be removed. All oaks would be retained regardless of canopy position unless they constitute a potential ladder fuel. Other tree species such as madrone and dogwood would be left to create diversity. Although some conifers less than eight inches DBH would be removed, a full range of conifer size and age classes will be maintained as part of the treatment.

There would be no impacts to scenery from Lily Gap Road, as the proposed project would not be visible due to the "walls" of trees and land forms that screen views beyond the immediate foreground. Given the nature of the proposed project, to enhance forest health, and the specific proposed project design criteria outlined by the BLM, the proposed project would have a less than significant impact on the Stanislaus National Forest, surrounding roadways and private properties. Proposed project impacts are considered less than significant. No mitigation is required.

b.) **Less Than Significant.** The proposed project is not within a viewshed of a state scenic highway. SR-4 is an officially designated scenic highway from east of Arnold to the Calaveras County line, approximately 14.5 miles south of the proposed project at its closest point. SR-88 is an officially designated state scenic highway within Amador and Alpine counties from Dew Drop Ranger Station to the California/Nevada state line. This officially designated section of SR-88 is approximately 7.25

miles north of the proposed project at its closest point.<sup>2</sup> Neither state designated scenic highway has direct views of the proposed project due to the “walls” of trees and the surrounding topography. As part of the proposed project activities, buffer areas would be set up around rock outcroppings and cultural resource sites. No ground disturbing activities would occur within cultural resource sites and any resources identified through consultation with Native American tribes, individuals, and other interested parties would be flagged and would be protected through avoidance. Therefore, the proposed project would have a less than significant impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings. No mitigation is required.

- d.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not introduce a new source of light of glare into the region. Therefore, no impact would occur. No mitigation is required.

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<sup>2</sup> California Department of Transportation. California Scenic Highway Mapping System: Calaveras and Amador Counties, State Route (SR) 88 and SR-4 Designations. [online]: [http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/index.htm](http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm). Accessed on June 10, 2014.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**II. AGRICULTURE AND FOREST RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. -- Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), 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 in 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"/> |
| d) Result in the 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"/> |

a-e.) **No Impact.** The proposed project is located on land that is under the jurisdiction and administration of BLM. The proposed project site does not contain Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or active agricultural operations. The proposed project involves forest land, but would not involve the loss of any forest land. The proposed project would benefit the forest as it would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project does not include any changes that could result in conversion of any farmland to a non-agricultural use or forest land to non-forest land use. Accordingly, there would be no impact related to agricultural or forest resources. No mitigation is required.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**III. AIR QUALITY:** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- |   |                          |                          |                                     |                          |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a, b, d, e) **Less Than Significant.** The proposed project is located within the Mountain Counties Air Basin within the jurisdiction of the Calaveras County Air Pollution Control District (APCD). Table 4-1 identifies general sensitive receptor areas within 10 miles of the project area. These areas could be affected by smoke from pile burns if weather patterns produce a stable air mass and smoke is unable to vent into the upper atmosphere.

**Table 4-1. Sensitive Receptors Identified within 10 Miles of the Lily Gap Project, Phase 2**

Sensitive Receptor Type	Location
Towns, Communities	Volcano, Barton, Pioneer, Pine Acres, West Point, Wilseyville, Porter, Railroad Flat, Glencoe, Sandy Gulch, Bummerville
Recreation Areas	Wilson lake, Tiger Creek Reservoir, Mokelumne River, Stanislaus National Forest, BLM lands
Roads	State Route 26, Lily Gap Road, Winton Road, Hidden Valley Road, Skull Flat Road, and other BLM, Forest Service, and County Roads.
Other	Private lands adjacent to the project area

Source: BLM, *Lily Gap Biomass Demonstration Project (CA-180-10-25) Decision Record*. April 2011. Towns, Communities, Recreation Areas, and Roads verified using Google Earth on June 10, 2014.

Prescribed burns (pile burns) would occur as part of the proposed project. The BLM would prepare a burn plan, to be approved by Calaveras County APCD for the pile burn activities. In addition, the BLM would obtain a burn permit from the Calaveras County APCD. Burns must be conducted on authorized burn days only in consultation with the BLM, Calaveras County APCD, and the California Air Resources Board (CARB). Since smoke is made up of inhalable particulates (smoke particles that measure less than ten microns in size [PM<sub>10</sub>], and of less than 2.5 microns in size [PM<sub>2.5</sub>]) and ozone are public health hazards; pile burns would be planned during periods of unstable air, which would allow for proper ventilation.

The objective of pile burning would be to reduce fuel loadings while protecting the residual overstory trees from damage caused by heat and flames. Pile burned material is allowed to cure and can be ignited with lower fuel moistures, which ensures complete and efficient consumption and less particulate matter being produced.

The use of the existing unpaved roads could potentially generate dust; however, BLM has coordinated with Calaveras County APCD and dust generated by the proposed project is considered to be small and not enough to exceed Calaveras County APCD thresholds. Impacts are considered less than significant and no mitigation measures are required.

Mechanical equipment would be used for vegetation removal, thinning, chipping, and piling activities. The proposed project would include equipment such as rubber tracked chippers and skidders, semi-truck trailers, log trucks, dozers and brush rakes, and tub grinders. Exhaust hydrocarbons (EH) and pollutant levels produced from proposed project activities are considered to be small and much lower than historical levels of logging and similar activities for the Stanislaus National Forest and surrounding area. In addition, the proposed project would follow BLM equipment operating standards and would comply with requirements from the Calaveras County APCD per their standards, as well as the burn permit required for the proposed project. Therefore, exhaust from proposed project activity equipment would have a less than significant impact on air quality. No mitigation measures are required.

- c.) **Less Than Significant.** The combination of the proposed project with past, present and reasonably foreseeable projects such as fuel load reductions, mastication and chipping, pile burning, cattle grazing, off-highway vehicle recreation and ranching use, and private land management activities and timber sales could result in cumulative impacts. However, all projects are required to comply with Calaveras County APCD rules and guidelines. In addition, all prescribed fire activities are coordinated with Calaveras County APCD and would be implemented under optimum conditions using best available control measures to prevent smoke concentrations from affecting local communities. Therefore, cumulative impacts are considered less than significant and no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES:</b> Would the project:				
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 Game 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, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>

a.) **Less Than Significant.** The BLM wildlife biologist analyzed the impacts of the proposed project on wildlife, including special status wildlife in accordance with the Endangered Species Act, other authorities, and BLM policies. BLM concluded that the proposed project would not impact threatened or endangered wildlife or other BLM special status wildlife. Specific project design features are provided in Appendix B, and include the following stipulations related to wildlife: 1) implement the proposed project outside the breeding season, generally spring (March-June so as not to disrupt nests, dens, and young animals; 2) avoidance of wood rat nests and large woody debris when creating burn piles; 3) 0.25 acres uncut for every 10 acres harvested with patches totaling 5 percent of the area; 4) retain live trees within existing cavities; 5) avoid damaging existing downed woody debris, particularly large (more than 18 inches) hollow or rotten logs and rotten stumps during all harvesting operations; 6) existing coarse woody material (more than 6 inches in diameter at the large end) and snags should be retained in place; and 7) retain and scatter tops and limbs from 20 percent of the trees harvested. In addition, proposed project activities near riparian areas would maintain 100 foot buffer from the centerline of the east-west drainage of Section 25. With the proposed project design criteria (refer to Appendix B), the proposed project would have a less than significant impact on special status wildlife and plant species. No mitigation measures are required.

b, c.) **Less Than Significant.** There are small seasonal streams in the project area that feed into the North fork of the Mokelumne River, approximately one mile to the west. The proposed project could cause erosion and some additional sediment to flow into these streams and into the river. Proposed project activities, including the design criteria provided in Appendix B, would occur adjacent to stream drainages. Vegetation treatments would include biomass thinning and tractor and grapple piling. Sedimentation could be slightly increased in some subdrainages in the short term; however, the proposed project specific design criteria (refer to Appendix B) would be followed to minimize impacts.

While riparian habitat and riparian areas may have temporary, indirect impacts during vegetative treatment activities, the proposed project would improve riparian habitat health, improve water quality, reduce sedimentation, and improve the ultimate health of the watershed. Therefore, the proposed project would have a less than significant impact on riparian areas, riparian habitat and watersheds. No mitigation measures are necessary.

d.) **Less Than Significant.** The proposed project would generate noise during treatment activities. However, snags and woody debris, riparian buffers, and maintenance of canopy closures, as outlined in the proposed project description and the design criteria (refer to Appendix B), would minimize any impacts to migratory species. Therefore, the proposed project would have a less than significant impact on migratory species. No mitigation measures are required.

e-f.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not conflict with policies or ordinances protecting biological resources nor would it conflict with any adopted conservation plans. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts would occur. No mitigation measures are required.

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

a-d.) **Less Than Significant With Mitigation.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. A cultural resource study, including a background records search and field inventory, was conducted by the BLM to determine whether significant cultural resources could be affected by the proposed project. The background record search and field inventory concluded that the project area has a very low sensitivity for prehistoric resources, especially village sites. The project area's terrain is mostly steep and heavily forested and has a much higher sensitivity for historic-era gold-mining- and logging-related resources.

The proposed project site has a high sensitivity for historic-era gold-mining and logging related resources. Although no cultural resources have been identified within the project area, in the event that a previously unknown potential resource is discovered, then a flagged buffer area around the resource would be established by qualified cultural resource specialist in order to avoid the identified resource(s). Only hand treatments near the boundaries of the flagged area would be allowed.

Ground disturbing activities would occur superficially with mechanical thinning. It is not anticipated that paleontological resources would be disturbed as a result of the proposed project. As part of the proposed project activities, flagging tape buffers would be established around identified cultural resources in order to protect by avoidance. Thus, the proposed project would have a less than significant impact to paleontological resources or rock outcrop; however, there is the potential to disturb previously unidentified paleontological resources. Therefore, mitigation is required.

## Mitigation Measures

**CULT-1** If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the Fresno County coroner. All reports, correspondence, and determinations regarding the discovery of human remains on the project site shall be submitted to the Sierra Nevada Conservancy and the Bureau of Land Management, Mother Lode Office.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and willful disturbance of human remains is a felony (Section 7052).

**CULT-2** During any ground disturbance activities, if paleontological resources are encountered, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the *Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the University of California, Museum of Paleontology located at the University of California, Berkeley, regarding any discoveries of paleontological resources.

If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Sierra Nevada Conservancy and the Bureau of Land Management, Mother Lode Office.

**CULT-3** If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, can evaluate the significance of the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified professional archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation.

If a potentially-eligible resource is encountered, then the qualified professional archaeologist, the Sierra Nevada Conservancy, and the Bureau of Land Management, Mother Lode Office shall arrange for either 1) total avoidance of the resource or 2) test excavations to evaluate eligibility and, if eligible, total data recovery. The determination shall be formally documented in writing and submitted to the Sierra Nevada Conservancy and Bureau of Land Management, Mother Lode Office as verification that the provisions for managing unanticipated discoveries have been met.

**CULT-4** Prior to any ground disturbing activities, such as the creation of tracks to drive heavy equipment into harvested areas, all crew members shall attend a tailgate session conducted by a qualified cultural resource specialist. The tailgate session shall provide information, including pictures,

on the types of historic-era resources that are known to occur in the area. This information session shall provide pictures of representative resource examples, as well as providing instructions on appropriate actions, should a resource be discovered. All crew members shall sign in at the session and a roster and summary of the session shall be provided to the Sierra Nevada Conservancy and the Bureau of Land Management, Mother Lode Office as verification that the tailgate sessions was conducted.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**VI. GEOLOGY AND SOILS:** Would the project:

- |  |                          |                          |                                     |                                     |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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? Refer to Division of Mines and Geology Special Publication 42. | <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 type="checkbox"/>            | <input checked="" 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 a geologic unit 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 checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), 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 waste water disposal systems where sewers are not available for the disposal of waste water?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

a, d, e) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. While the proposed project may remove some understory ladder fuel, the proposed project would ultimately improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Therefore, people residing, working, or recreating in the project area would not be exposed to potential seismic activity or landslides beyond the existing threat. No impacts would occur. No mitigation measures are required.

b-c.) **Less Than Significant.** The proposed project has been developed to minimize ground disturbance; however, new tracks may be created to access harvested areas. Thus, there is potential for soil erosion and/or loss of topsoil. Mechanical equipment would not operate on slopes greater than 30 percent and/or within 100 feet of perennial streams. Any new tracks would be placed in areas to minimize ground disturbance to the extent feasible. Equipment used for the proposed project would be small in size and power and would be equipped with rubber-tracked tires to minimize ground disturbance. In addition, the design of the proposed project includes maintaining woody debris and a percentage of groundcover. Therefore, impacts are considered less than significant. No mitigation is required.

In addition, given that the proposed project would provide for a healthier forest and includes erosion controls for slopes greater than 35 percent, the proposed project would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The proposed project would have a less than significant impact in this regard and no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**VII. GREENHOUSE GAS EMISSIONS:** Would the project:

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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 an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

a-b.) **Less Than Significant.** Projected climate change impacts include temperature increases, sea level rise, changes in timing, location and quantity of precipitation and the increased frequency of extreme weather events such as heat waves, droughts and floods. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. Pile burning would occur as part of the proposed project and would be relatively small burns (six-foot by six-foot areas). The BLM would prepare a burn plan, to be approved by Calaveras County APCD for the pile burn activities. In addition, the BLM would obtain a burn permit from the Calaveras County APCD. Burns must be conducted on authorized burn days only in consultation with the BLM, Calaveras County APCD, and the California Air Resources Board (CARB). Since smoke is made up of inhalable particulates (smoke particles that measure less than ten microns in size [PM<sub>10</sub>], and of less than 2.5 microns in size [PM<sub>2.5</sub>]) and ozone are public health hazards; pile burns would be planned during periods of unstable air, which would allow for proper ventilation.

Completed fuel treatments are known to sustain a forest's ability to continue to sequester carbon. Less tree carbon loss following wildfire should be viewed in the context of the carbon sequestered from biomass and saw timber removal in treated areas before they encountered fire. The ultimate use of that removed biomass results in relatively long-term sequestration in building materials, and biomass burning for energy which supplants fossil fuels.

The proposed project would use mechanized equipment such as masticators or mechanical harvesters (i.e., rubber-tracked shippers and skidders), dozers, trucks, and pile burns. Changes in combustion efficiency change the amount of CO<sub>2</sub> release per ton of fuel. The proposed project would improve forest health and reduce fuel load, which would reduce the risk of wildfire, thus reducing the release of additional CO<sub>2</sub> as a result of severe wildfire. While the proposed project would increase CO<sub>2</sub> emissions in the near-term due to pile burns and equipment operation, emissions overall would small and equipment would be operated using current standards. Ultimately CO<sub>2</sub> emissions would be reduced because wildfire severity would be reduced. Impacts are considered less than significant. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**VIII. HAZARDS AND HAZARDOUS MATERIALS:**

Would the project:

- |  |                          |                          |                                     |                                     |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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 school?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 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 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"/>            |

a-c.) **Less Than Significant.** The proposed project would not include the use of hazardous materials. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not transport, use, or dispose of hazardous materials. The proposed project would not release hazardous materials into the environment. The proposed project would result in equipment emissions as well as particulate matter from proposed project activities; however, the project area is not located within 0.25 mile of a school. The proposed project would have a less than significant impact as related to hazardous materials. No mitigation measures are required.

d-g.) **No Impact.** The proposed project is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, nor would it create a hazard to the public. The proposed project is not within an airport or private airstrip plan area.

The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would

improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Therefore, the proposed project area would not interfere with air traffic circulation nor would it interfere with an adopted emergency response plan or an emergency evacuation plan. The proposed project would thus, have no impact in this regard. No mitigation measures are required.

- h.) **Less Than Significant.** The proposed project is located within a Wildland Urban Interface area. In general, wildfire ignitions are a mix of human caused and lightning. Wildfires usually spread in a continuous flaming front throwing embers ahead, starting multiple small fires called spot fires. Generally the higher the wind speed, the further the spot fires occur from the main fire. As these spot fires burn together they cause the speed and intensity of the fire to increase dramatically. Multiple spot fires are an indication of extreme fire behavior.

The Wildland Urban Interface is always given priority to suppression activities. For fire suppression efforts, the effect of reducing hazard fuels in the Wildland Urban Interface is a reduced number of suppression resources needed for structure protection, which allows the resources to be redeployed to perimeter control, thus reducing fire size if fire behavior is controllable. Smaller fires require fewer firefighters, which in turn reduces the number of firefighters exposed to hazards. In addition, smaller fires expose fewer numbers of the public to the hazards of wildfires.

An indirect effect of the proposed project is the increased fire resilience of the landscape, which is the ability of the forest to withstand the effects of wildfires. Given the proposed project's outcome in reducing ladder fuel, fire intensity, and flame height, and increasing fire resilient conditions to the project area, the proposed project would have a less than significant impact on wildfires. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. HYDROLOGY AND WATER QUALITY:</b> Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater 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 checked="" type="checkbox"/>	<input 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 by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, c, d, f.) **Less Than Significant.** The proposed project would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project includes biomass thinning, tractor and grapple piling, and pile burning. These activities include ground disturbing activities, which could result in an increase in sediment within runoff. However, the proposed project would include a 100-foot-wide streamside buffer to avoid potential runoff generated by these areas that can cause accelerated erosion on soils downslope. To prevent potential water quality degradation, streamside buffers (100-foot minimum measured from the centerline of the stream) would be established for the seasonal stream that flows through the project area. Only hand treatments would be allowed near the boundaries of the 100-foot streamside buffer. No equipment operation would be allowed on slopes greater than 35 percent, although work with hand equipment would be allowed. The proposed activities would help to reduce runoff and erosion

in the long-term, which would ultimately improve water quality. The main water quality concern in the project area is sand-sized sediment that can be derived from roads, hillslope disturbances, or in-stream erosion.

Proposed project activities could indirectly impact water quality, as discussed above; however, the proposed project activities and design criteria provided in Appendix B would ensure a less than significant impact during project implementation. While the seasonal stream, as well as water bodies downstream of the proposed project, may have temporary, indirect impacts during vegetative treatment activities, the proposed project would improve riparian habitat health, improve water quality, reduce sedimentation, and improve the ultimate health of the watershed. Therefore, the impacts to water quality would be less than significant. No mitigation measures are required.

- b.) **No Impact.** The proposed project would ultimately improve watershed, riparian and forest health. No water supply would be required for the proposed project. Thus, the proposed project would not impede groundwater recharge, as vegetative treatments would not include the introduction of impervious surfaces. There would be no impact to water supply as a result of the proposed project. No mitigation measures are required.
  
- e.) **No Impact.** The proposed project would not result in an increase in runoff and would not contribute to polluted runoff. Ground disturbing activities would result from the proposed project, however, design criteria (refer to Appendix B), would minimize the potential of increased sediment in runoff, as discussed above. The proposed project would not impact runoff amount or runoff water quality. No mitigation measures are required.
  
- g-j.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not introduce houses or businesses to the area. Therefore, the proposed project would not introduce people, houses, or other structures to a 100-year flood hazard area, would not redirect a 100-year flood event, would not introduce people or structures to an area that would flood, including flooding from a failed dam or levee, and would not introduce people or structures to an area that would experience inundation from seiche or tsunami. In addition, the threat of a mudflow would not be any greater than the existing conditions. Therefore, the proposed project would have no impact in this regard. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. LAND USE AND PLANNING:</b> Would the project:				
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 community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-c.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. No changes in land use designations or zoning would occur as a result of the proposed project. The proposed project would not physically divide an established community. The proposed project would enhance the forest health, thus the proposed project would not conflict with any conservation plans for the BLM or Calaveras County. No impact would occur as a result of the proposed project. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. MINERAL RESOURCES:</b> Would the project:				
a) Result in the loss of availability of a known mineral resource 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"/>

a-b.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. There are several active mining claims in the project area, the use of which is regulated by the BLM under federal mining regulations 43 CFR 3809 and 3715. One claimant has been authorized, under these regulations, to live on an existing mining claim within the project area. The BLM will continue to work with this claimant to ensure the existing mining activity and related occupancy is not negatively impacted by the proposed project. Therefore the proposed project would not result in the loss of available known mineral resources or mineral resource recovery sites. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. NOISE:</b> Would the project result in:				
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 type="checkbox"/>	<input checked="" 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 levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 plan or, where such a plan has not been adopted, within two miles of a public airport or 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"/>

a, b, d.) **Less Than Significant.** The proposed project would increase noise levels temporarily during activities such as mechanical thinning and tractor piling. However, the design criteria for the proposed project, as outlined in Appendix B, would result in impacts that are less than significant. In addition, the anticipated mechanical equipment used for proposed project activities are not anticipated to result in excessive groundborne vibration levels. Many of the treatment sites are located away from any private land owners or campgrounds. Activities would be temporary in nature, as they would cease upon project completion. Therefore, the proposed project would have a less than significant impact. No mitigation measures are required.

c.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. While temporary noise would occur as a result of the mechanical thinning and tractor and grapple piling, these noise increases would be temporary in nature and would cease upon project completion. Therefore, the proposed project would not permanently increase ambient noise levels above existing noise levels. No mitigation measures are required.

e, f.) **No Impact.** The proposed project is not located within an airport land use plan or in the vicinity of a private airstrip. The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not expose people to excessive noise levels as a result of the proximity to an airport or private airstrip. No impacts would occur in this regard. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**XIII. POPULATION AND HOUSING:** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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"/> |

a-c.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. No changes in land uses or land use designations would occur as a result of the proposed project. The proposed project does not include the development of new homes or businesses. The proposed project would not displace existing homes or people. No impacts would occur as a result of the proposed project. No mitigation measures are required.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**XIV. PUBLIC SERVICES**

a) Would the project 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"/>

a.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not result in an increase need for public services. While pile burning is an element of the proposed project, the BLM would provide appropriate staff for this proposed project activity. Thus, the proposed project would not result in an increase need for fire protection. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts to public services would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**XV. RECREATION**

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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 type="checkbox"/> | <input checked="" 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 type="checkbox"/> | <input checked="" type="checkbox"/> |

a-b.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not increase the use of existing neighborhood and regional parks, nor would it increase the use of the project area or adjacent National Forest. The proposed project would not require the expansion or construction of recreational facilities. The project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts to recreation would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. Transportation / Traffic:</b> Would the project:				
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 due 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"/>

a-f.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. A temporary increase in traffic may occur while equipment is being moved to the project area, out of the project area, or transporting biomass from the project area to the biomass plant near Ione (Buena Vista Biomass Power Facility). However, because of the nature of the proposed project activities, it is not anticipated that the proposed project would conflict with applicable plans, ordinances, policy establishing measures, congestion management plans or programs, or policies or programs regarding alternative transportation (public transit, bicycles, or pedestrian facilities).

The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. Thus, the proposed project would not impact air traffic patterns.

The proposed project includes vegetative treatments that would be applied to approximately 200 acres. No roadway construction or improvements would occur as a result of the proposed project. Therefore, the proposed project would not increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). No mitigation measures are required.

The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. This would improve emergency access to the area in case

of wildfire or other forest emergency. No impacts from the proposed project would occur. No mitigation measures are necessary.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<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 facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

a-g.) **No Impact.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project would not require wastewater treatment, water supply, or solid waste disposal, as the proposed project does not include utilities and service systems. The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest. No impacts to utilities and service systems would occur. No mitigation measures are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> |

- a.) **Less Than Significant.** The proposed project would include activities that would reduce fuel loads and fire hazards, improve wildlife habitat and watershed conditions, and encourage forest growth. The proposed project activities as described in Section 2.0, *Project Description*, as well as the design criteria provided in Appendix B would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. Temporary impacts would be less than significant. No mitigation measures are required.
- b.) **Less Than Significant.** The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. While air quality and greenhouse gas emissions could result in cumulative impacts as a result of the proposed project, all projects are required to comply with Calaveras County APCD rules and guidelines. The proposed project would reduce the threat of severe wildfire, and, therefore, long term impacts would not be cumulatively considerable. Impacts are considered less than significant.
- c.) **Less Than Significant.** The proposed project would improve forest health, reduce fuel loading and thus threat of wildfire, and maintain and enhance existing forest health. Overall impacts to human beings would be beneficial in nature, as wildfire threat and severity would be reduced as a result of the reduction in ladder fuels. Therefore, impacts would be less than significant.

## 5.0 RESPONSE TO COMMENTS

### 5.1 PURPOSE

As defined by Section 15050 of the California Environmental Quality Act (CEQA) Guidelines, the Sierra Nevada Conservancy (SNC) is serving as "Lead Agency," for preparation of the Mitigated Negative Declaration (MND) for the Lily Gap Forest Health Project, Phase 2 (proposed project). The Final MND presents the environmental information and analyses that have been prepared for the proposed project, including comments received addressing the adequacy of the Initial Study (IS)/Proposed MND and responses to those comments. The Final IS/MND, which includes these responses to comments, the Draft IS, and the technical appendices, will be used by the SNC Governing Board (SNC Board) in the decision-making process for the proposed project.

### 5.2 ENVIRONMENTAL REVIEW

The SNC prepared and distributed the IS/Draft MND, dated July 2014, for the proposed project (State Clearinghouse [SCH] No. 2014072017). The IS/MND was circulated for a 30-day review period which began on July 9, 2014 and extended to August 7, 2014. SNC received two (2) written comment letter and no verbal comments on the IS/MND. The agency that has commented on the Draft IS/MND is listed in Table 5-1, *Public Comments Received on the Draft IS/MND*.

**Table 5-1. Public Comments Received on the Draft IS/MND**

Letter/Comment No.	Commenter	Commenter Type
1	Governor's Office of Planning and Research – State Clearinghouse	State
2	California Water Boards – Central Valley Regional Water Quality Control Board	State

Pursuant to State CEQA Guidelines Section 15074, the SNC Governing Board shall consider the IS/MND together with any comments received during the public review process. The SNC Governing Board shall adopt the proposed MND only if it finds on the basis of the whole record, including the IS and public comments, that there is no substantial evidence that the proposed project would have a significant effect on the environment and that the MND reflects the lead agency's independent judgment and analysis. The responses to comments are contained in this chapter, Chapter 5, *Response to Comments*, of this IS/MND. A copy of the numbered comment letters and lettered responses to each comment is provided in Section 5.4, *Response to Comments*, of this chapter.

### 5.3 REVISIONS TO THE DRAFT IS/MND

Revisions made to the text of the IS/MND are shown within this document. Clarifications to this IS/MND text are shown with underlining and text removed from the IS/MND is shown with ~~strikeout~~. Page numbers for the revisions are provided within the appropriate response in Section 5.4, *Response to Comments*, below.

### 5.4 RESPONSE TO COMMENTS

The letter comments received on the Draft IS/MND are addressed in their entirety in this section. Each comment contained in the letters has been assigned a reference code. The responses to reference code comments follow each letter. Two (2) written comment letters were received and no verbal comments were received during the public comment period.

**Comment Letter 1**



Edmund G. Brown Jr.  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Ken Alex  
Director

August 8, 2014



Matthew Daley  
Sierra Nevada Conservancy  
11521 Blocker Drive, Suite 205  
Auburn, CA 95603

Subject: Lilly Gap Forest Health Project, Phase 2 (SNC 794)  
SCH#: 2014072017

Dear Matthew Daley:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 7, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan  
Director, State Clearinghouse

Enclosures

cc: Resources Agency  
1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044  
TEL (916) 445-0613 FAX (916) 329-3018 www.opr.ca.gov

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**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2014072017  
**Project Title** Lilly Gap Forest Health Project, Phase 2 (SNC 794)  
**Lead Agency** Sierra Nevada Conservancy

**Type** MND Mitigated Negative Declaration  
**Description** The BLM is requesting approximately \$185,000 in funding from the Sierra Nevada Conservancy's Proposition 84 Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Grant Program to reduce the risk of large damaging wild fires, thereby preventing erosion and enhancing overall forest health in the Lilly Gap area in the Sierra National Forest. The proposed project is the second phase of the 420-acre Lilly Gap Forest and Watershed Health Project, and is part of the Lilly Gap Biomass Demonstration Project (CA-180-10-25) for fuels reduction and ecosystem restoration for watershed protection. The total 420-acre Lilly Gap project area is located on BLM administered public lands on forested slopes adjacent to the Mokelumne River that has not experienced fire in decades.

**Lead Agency Contact**

**Name** Matthew Daley  
**Agency** Sierra Nevada Conservancy  
**Phone** 530 823 4698 **Fax**  
**email**  
**Address** 11521 Blocker Drive, Suite 205  
**City** Auburn **State** CA **Zip** 95603

**Project Location**

**County** Calaveras  
**City**  
**Region**  
**Lat / Long** 38° 26' N / 120° 29' W  
**Cross Streets** Lily Gap Road/Winton Road  
**Parcel No.** 040-170-30  
**Township** 7N **Range** 13E **Section** 25 **Base** MDB&M

**Proximity to:**

**Highways** Hwy 88, 26  
**Airports**  
**Railways**  
**Waterways** Mokelumne River, Tiger Creek Reservoir  
**Schools**  
**Land Use** LUD: Timber-Mineral Resource Area, 2A-Dam Inundation; Z: Unclassified (U)

**Project Issues** Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Water Quality; Cumulative Effects

**Reviewing Agencies** Resources Agency; Department of Fish and Wildlife, Region 2; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 10; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission

**Date Received** 07/09/2014 **Start of Review** 07/09/2014 **End of Review** 08/07/2014

***Response to Comment Letter 1: Governor's Office of Planning and Research - State Clearinghouse (August 8, 2014)***

1. Thank you for your comment. The participation of the State Clearinghouse in the public review of this document is appreciated. The commenter states that the State Clearinghouse distributed the Draft IS/MND for selected agencies to review; in compliance with the California Environmental Quality Act (CEQA). One comment letter was received from the Central Valley Regional Water Quality Control Board (CVRWQCB) (July 17, 2014) and was attached to the comment letter. Responses to the CVRWQCB letter are provided in Comment Letter 2. The comments have been noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

**Comment Letter 2**



**Central Valley Regional Water Quality Control Board**

17 July 2014



Matthew Daley  
Sierra Nevada Conservancy  
11521 Blocker Drive, Suite 205  
Auburn, CA 95603

CERTIFIED MAIL  
7013 1710 0002 3644 7297

**COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, LILY GAP FOREST HEALTH, PHASE 2 (SNC 794) PROJECT, SCH NO. 2014072017, CALAVERAS COUNTY**

Pursuant to the State Clearinghouse's 9 July 2014 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Lily Gap Forest Health, Phase 2 (SNC 794) Project, located in Calaveras County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

**Construction Storm Water General Permit**

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:  
[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml).



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**Phase I and II Municipal Separate Storm Sewer System (MS4) Permits<sup>1</sup>**

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:  
[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/municipal\\_permits/](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/).

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:  
[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/phase\\_ii\\_municipal.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml)

**Industrial Storm Water General Permit**

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:  
[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/industrial\\_general\\_permits/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml).

**Clean Water Act Section 404 Permit**

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

<sup>1</sup> Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

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**Clean Water Act Section 401 Permit – Water Quality Certification**

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

**Waste Discharge Requirements**

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/help/business\\_help/permit2.shtml](http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml).

**Low or Limited Threat General NPDES Permit**

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

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For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/general\\_orders/r5-2013-0074.pdf](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf)

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/general\\_orders/r5-2013-0073.pdf](http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf)

Lily Gap Forest Health,  
Phase 2 (SNC 794)  
Calaveras County

- 4 -

17 July 2014

If you have questions regarding these comments, please contact me at (916) 464-4684 or  
tcleak@waterboards.ca.gov.



Trevor Cleak  
Environmental Scientist

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cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

**Response to Comment Letter 2: Central Valley Regional Water Quality Control Board  
(July 17, 2014)**

- A. Thank you for your comment. The participation of the Central Valley Regional Water Quality Control Board (RWQCB) in the public review of this document is appreciated. The commenter discusses their responsibility in protecting the quality of surface and groundwater and provides information on the different permits that are issued under CVRWQCB.

The commenter is referred to the subsection *Hydrology and Water Quality* provided on page 24 of Chapter 4, *Evaluation of Environmental Impacts*, of this IS/MND. The U.S. Department of the Interior, Bureau of Land Management (BLM), Mother Lode Field Office analyzed a larger project (Lily Gap Forest Health Project [Phase 1 and Phase 2]) under the National Environmental Policy Act (NEPA). BLM prepared an Environmental Assessment (EA) and adopted a Finding of No Significant Impact (FONSI) in March 2011 and issued a Decision Record in May 2011, which is within the CVRWQCB's jurisdiction. The proposed project is required to meet water quality requirements as identified in the NEPA EA/FONSI and Decision Record, which includes the design criteria. Compliance with the 2011 EA/FONSI and Decision Record will result in the protection of water quality. The NEPA documentation requirements include, but are not limited to streamside buffers (100-foot minimum from the centerline of the stream), prohibiting waste (i.e., petroleum products, soil, silt, sand, rock, felled trees, slash, sawdust, and bark) from being discharged to surface waters, and allowing only hand treatments near the boundaries of the 100-foot streamside buffers. The enforcement of hand treatments near the boundaries of the 100-foot streamside buffers will minimize erosion potential. In addition, the proposed project includes Design Criteria (as provided in Appendix A of this IS/MND), that would protect water quality within the project boundaries. If it is determined that the proposed project is required to obtain additional permits, beyond what is set forth in the NEPA EA/FONSI and Decision Record, the BLM Mother Lode Field Office will obtain all required permits. The comment is noted for the record and will be provided to the Sierra Nevada Conservancy Governing Board for consideration. No further response or change to the Draft IS/MND is necessary.

## 6.0 DISTRIBUTION LIST

- San Andreas Central Library  
1299 Gold Hunter Road  
San Andreas, CA 95249
- West Point Branch Library  
291 Main Street  
West Point, CA 95255
- Calaveras County Water District  
120 Toma Court  
San Andreas, CA 95249
- BLM – Mother Lode Field Office  
Bill Haigh – Manager  
5152 Hillsdale Circle  
El Dorado Hills, CA 95762
- Calaveras Board of Supervisors  
Madaline Krska, County Clerk Recorder  
891 Mountain Ranch Road  
San Andreas, CA 95249
- California State Clearinghouse (Hand Deliver)  
1400 Tenth Street  
Sacramento, CA 95814

## **7.0 PREPARERS**

Matthew Daley, Senior Grants Analyst, Sierra Nevada Conservancy

Christa Redd, Environmental Planner, Kimley-Horn and Associates, Inc.

Bruce Grove, Environmental Planner, Kimley-Horn and Associates, Inc.

Nicole Marotz, Environmental Planner, RBF Consulting, a M. Baker International Company

Erin Longo, Technical Editor, Kimley-Horn and Associates, Inc.

Appendix A  
**Silvicultural Prescription for Sierran Mixed-Conifer/Lower  
Montane Forest**

Source: BLM, *Lily Gap Biomass Demonstration Project (CA-180-10-25)*  
*Decision Record and Finding of No Significant Impact*, April 2011

## Appendix A

### Silvicultural Prescription for Sierran Mixed-Conifer/Lower Montane Forest

#### A.1 Background and the Importance of Fire

Our definition of healthy forest conditions within the project area draws heavily from the research of North et al. (2009) in the western Sierra Nevada. Their recent report titled *An ecosystem management strategy for Sierran mixed-conifer forests* (North et al. 2009) contains key concepts and silvicultural principles that we feel can be incorporated into the proposed action to achieve the goal of creating a healthy forest conditions within the project area.

Chief among these concepts is the importance of wildfire. North et al (2009) explains that:

Fire plays a pivotal role in reshaping and maintaining mixed-conifer ecosystems. Fire was once very common in most of the western Sierra and has been a primary force shaping the structure, composition, and function of mixed-conifer forests. ... [Most of the fires were of low intensity and returned at frequent intervals.] The main effect of low-intensity fire is its reduction of natural and human-created (i.e., resulting from management activities) fuels, litter, shrub cover, and small trees. These reductions open growing space, provide a flush of soil nutrients, and increase the diversity of plants and invertebrates. By reducing canopy cover, fire also increases habitat and microclimate heterogeneity at site, stand, and landscape levels [North et al. 2009:5-6].

Forest fuels are usually assessed in three general categories: surface, ladder, and canopy bulk density. Fuel treatments often focus on ladder fuels (generally defined to be variably sized understory trees that provide vertical continuity of fuels from the forest floor to the crowns of overstory trees.) Some studies and models, however, suggest a crown fire entering a stand is rarely sustained (i.e., sustained only under extreme weather conditions) if understory fuels are too sparse to generate sufficient radiant and convective heat. [North et al. 2009:3].

By itself, prescribed fire is difficult to apply in some forests owing to fuel accumulations, changes in stand structure, and operational limitations on its use. Mechanical treatments can be effective tools to modify stand structure and influence subsequent fire severity and extent and are often a required first treatment in forests containing excessive fuel loads. [North et al. 2009:6-7]

Prescribed fire is generally implemented very carefully, killing only the smaller size class trees. In some cases, it is ineffective for restoring resilience, at least in the first pass. For example, prescribed fire may not kill many of the larger ladder-fuel or co-dominant true fir trees that have grown in with fire suppression. In many stands, mechanical thinning followed by prescribed fire may be necessary to achieve forest resilience much faster than with prescribed fire alone. [North et al. 2009:7]

Some forests cannot be prescription burned, at least as an initial treatment, because of air quality regulations, increasing wildland home construction, and limited budgets. Yet restoration of these forests still depends on modifying fuels because it reduces wildfire intensity when a fire does occur and can produce stand conditions that simulate some of fire's ecological effects. [North et al. 2009:7]

One measure of resilience is that fire disturbance produces mortality patterns consistent with the dynamics under which the forest evolved. Mixed-conifer resilience might be best ensured by (1) reducing fuels such that if the forest burned, the fire would most likely be a low severity surface and (2) producing a forest structure that keeps insect and pathogen mortality at low, chronic levels. Where intermediate-size trees are abundant, they may present a fire and fuels risk, especially when live crowns are continuous to the forest floor (North et al. 2009:v).

Intermediate-size trees can contribute to overly dense stands that are moisture stressed and at risk of bark beetle attacks:

In addition to ladder and surface fuels, managers have been concerned with reducing canopy bulk density in DFPZs and the defense zone of wildland urban interfaces (WUI). Overstory trees are commonly removed, and residual trees are evenly spaced to increase crown separation. The efficacy of canopy bulk density reduction in modifying fire behavior is largely a function of weather conditions. Research has suggested there is often limited reduction in crown fire potential through overstory thinning alone, without also treating surface fuels. [North et al. 2009:4]

A concern with the widespread use of canopy bulk density thinning in defensible fuel profile and defense zones is the ecological effects of the regular tree spacing. In the Sierra Nevada, historical data, narratives, and reconstruction studies indicate mixed conifer forests were highly clustered with groups of trees separated by sparsely treed or open gap conditions. This clustering can be important for regenerating shade-intolerant pine, increasing plant diversity and shrub cover moderating surface and canopy microclimate conditions within the tree cluster and providing a variety of microhabitat conditions for birds and small mammals. [North et al. 2009:4]

## A.2 Importance of Stand Heterogeneity and Density

Recent studies have shown that spatial heterogeneity was a key feature in forest resiliency and characteristic of frequent fire's effect on mixed-conifer forests. Fuel treatments that produce uniform tree spacing reduce this ecologically important spatial heterogeneity. North et al. (2009) explains that:

Horizontal heterogeneity, however, used to be relatively common in Sierran mixed-conifer forests [due to logging/reforestation practices]. All of the Sierran reconstruction studies suggest mixed-conifer forests, under an active fire regime, had a naturally clumped distribution containing a variety of size and age classes. [North et al. 2009:15]

At the stand level, vertical heterogeneity can still be provided by separating groups of trees by their canopy strata. For example, a group of intermediate-size trees that could serve as ladder fuels might be thinned or removed if they are growing under large overstory trees. The same size trees in a discrete group, however, might be lightly thinned to accelerate residual tree growth or left alone if the group does not present a ladder fuel hazard for large, overstory trees. [North et al. 2009:15-16]

To increase horizontal heterogeneity, we suggest using microtopography as a template. Wetter areas, such as seeps, concave pockets, and cold air drainages, may have burned less frequently or at lower intensity. Limiting thinning to ladder fuels in these areas is suggested because with their potentially higher productivity and cooler microclimate, they can support greater stem densities, higher canopy cover, and reduced fire effects. A concern with current uniform fuel reduction is that these microsite habitats associated with sensitive species would be eliminated. Surface fuel loads at these microsites should still be reduced to lower their vulnerability to high-intensity fire.

In contrast, upslope areas, where soils may be shallower and drier and where fire can burn with greater intensity, historically had lower stem densities and canopy cover. On these sites, thinning might reduce the density of small or, where appropriate, intermediate trees and ladder and surface fuels toward a more open condition. In some circumstances this thinning may reduce water stress, accelerating the development of large residual trees. Within a stand, varying stem density according to potential fire intensity effects on stand structure would create horizontal heterogeneity. [North et al. 2009:16-18]

Historical forests can provide a better understanding of the ecological processes that have shaped mixed-conifer forest and the habitat conditions to which wildlife have adapted. All reconstruction studies, old forest survey data sets, and 19th-century photographs suggest that frequently burned forests had very low tree densities. ... Studies reconstructing pre-European conditions all indicate that forests had a greater percentage of pine, a clustered pattern with highly variable canopy cover, and a high percentage of the growing stock in more fire resistant, large-diameter classes. ... What these reconstructions do provide is inference about the cumulative process effects of fire, insects, pathogens, wind, and forest dynamics on stand structure and composition, producing forests resilient to most disturbances, including wildfire. ... [Modeling] found a low-density forest dominated by large pines was most resilient to wildfire, sequestered the most carbon, and had the lowest carbon dioxide (CO<sub>2</sub>) emissions and thus contributed less to global warming. An analysis of carbon emissions and storage from different fuel treatments, found

understory thinning followed by prescribed fire produced the greatest reduction in potential wildfire severity without severely reducing carbon stocks. [North et al. 2009:9].

In fire-suppressed forests, shrubs are often shaded out, reducing their size, abundance, and fruit and seed production in low-light forest understories. Anecdotal narratives, a forest reconstruction, and a few early plot maps suggest shrub cover in active-fire conditions might have been much higher than in current forests, mostly owing to large shrub patches that occupied some of the gaps between tree clusters. [North et al. 2009:12]

Studies in the Sierra Nevada and Klamath Mountains found that mixed-conifer structure and composition varied by fire patterns that were controlled by landscape physiographic features. Fire intensity, and consequently a more open forest condition, increased with higher slope positions and more southwesterly aspects. ... Cumulatively these studies suggest that forest landscapes varied depending on what structural conditions would be produced by topography's influence on fire frequency and intensity. [North et al. 2009:19]

### A.3 Silvicultural Strategy

North et al. (2009) asserts that a new silviculture for Sierran mixed-conifer forest that

balances ecological restoration and wildlife habitat with fuel reduction can meet multiple forest objectives. By necessity, recent Sierran silviculture has first been focused on reducing fire severity through fuel reduction. For many reasons, including maintaining or restoring resilient forests, public safety, and property loss, fuel reduction remains a priority. We suggest that, with some modification, wildlife and ecological objectives can also be met. [North et al. 2009:22]

Diameter-limit prescriptions applied equally to all species will not remedy the significant deficit of hardwoods and pines in current forests. Prescriptions that differ by species can retain hardwoods, which are important for wildlife, and favor pines that can increase the forest's fire resilience. Given their current scarcity in many locations, there are few instances that warrant cutting either hardwoods or pines in mixed-conifer forests. [Id.]

In general, leaving pine and thinning white fir, Douglas-fir, and incense-cedar will help restore historical species composition and increase the forest's fire resilience. There are times, however, where removing pine can reduce fuels, decrease the risk of drought or insect induced mortality, and accelerate the growth of the residual pine trees.

We suggest creating landscape heterogeneity in the Sierra Nevada by mimicking the forest conditions that would be created by the fire behavior and return interval associated with differences in slope position, aspect, and slope steepness. In general, stem density and canopy cover would be highest in drainages and riparian areas, and then decrease over the midslope and become lowest near and on ridgetops. Stem density and canopy cover in all three areas would be higher on northeast aspects compared to southwest. Stand density would also vary with slope becoming more open as slopes steepen. [North et al. 2009:20]

Locating gaps in areas with thinner soils or lower productivity may be logical to foster lower canopy cover since these areas historically supported lower tree densities and fuel loads. In the forest matrix between tree groups and gaps, frequent-fire forests generally consisted of widely spaced, large trees, most of which were pines. The relative proportion of these conditions (i.e., low density, dispersed large trees, and large and small gaps and tree groups) and their composition could be varied depending on existing forest conditions and topographic position.

The proposed silvicultural approach is a multiaged-stand strategy driven by the need for wildlife habitat, fire-resistant stand structures, and restoration of stand and landscape patterns similar to active-fire conditions in mixed-conifer forests. Although we use the term multiage, we are most interested in size and structure, and their associated ecological attributes. Multiaged stands are a flexible means of including variable stand structures with two or more age classes and integrating existing stand structures into silvicultural prescriptions. [North et al. 2009:22]

Clusters of intermediate to large trees (i.e., >20 inches diameter at breast height [DBH]) are sometimes marked for thinning with the belief that they are overstocked and thinning would reduce moisture stress. Some evidence, however, suggests these groups of large trees may not be moisture stressed by within-group competition.... Reconstructions of Sierran forests with active fire regimes have consistently found large trees in groups. These groups, however, can be at risk if intermediate and small trees grow within the large tree groups. Thinning these small and intermediate trees will reduce fire laddering. [North et al. 2009:23-24]

What is considered a ladder fuel differs from stand to stand, but typically these are trees in the 10- to 16-inch DBH classes. Trees larger than this may be thinned, for additional fuel reduction by reducing canopy bulk density in strategic locations. Removal of some of the intermediate sized trees would also have the economic benefit of providing revenue to help offset the costs of the fuels reduction and could fund additional projects (North et al. 2009:24).

Thinned intermediate-size trees should only be fire-sensitive, shade-tolerant species such as white fir, Douglas-fir, and incense-cedar. In mixed-conifer forest, attempt to keep intermediate-size pines and hardwoods because of their relative scarcity and importance to wildlife and fire resilience. . . Some intermediate-size trees can still function as ladder fuel, particularly those that were initially grown in more open conditions. These trees can have live and dead limbs that extend down close to the forest floor providing a continuous fuel ladder. . . [In] middle to upper slope topographic position . . . some thinning of intermediate-size trees may help accelerate the development of large "leave" trees. We suggest, however, that these criteria not be applied to riparian areas, moist microsites often associated with deeper soils, concave topography, or drainage bottoms because these areas may have supported higher tree densities and probably greater numbers of intermediate size trees. [North et al. 2009:24-25]

Appendix B  
**Design Criteria**

# DESIGN CRITERIA

To minimize potential adverse impacts to resources in the area from the proposed project, the United States Department of the Interior, Bureau of Land Management, Mother Lode Field Office identified the following design criteria within the NEPA Environmental Assessment/Finding of No Significant Impact prepared for the 420-acre Lily Gap Forest Health Project. These design criteria are broken into resource groups but many of these features can reduce impacts to other resources as well. Project-wide design criteria are applicable to the proposed project as a whole and are not resource specific.

The following design criteria cover 200 acres known as the Lily Gap Forest Health Project, Phase 2; this proposed project is a part of the larger 420-acre Lily Gap Forest Health Project. The design criteria are considered part of the proposed project activities, where applicable.

- *Minimize New Ground Disturbance.* Cut vegetation would be taken to designated staging areas: existing roads, road pullouts, and landings on BLM-administered land for further processing and loading into trucks. No new landings would be built. In some cases, it would be necessary to create tracks into the project area. The tracks are needed to drive heavy equipment to harvest sites and to, then, transport the harvested vegetation to the designated staging areas. Wherever possible, a hand crew with chainsaws and a rubber-tracked chipping and hauling equipment would be used (rather than a feller buncher) to harvest biomass and sawtimber. Biomass material may be harvested and transported to the biomass plant near Ione (Buena Vista Biomass Power Facility). Berms, large boulders, and other kinds of barriers may be placed at strategic locations after harvest to prevent dirt bikes and other off-highway vehicles from driving in the treated area and causing erosion.
- *Erosion and Sedimentation Control.* Erosion and sedimentation are potential issues affecting the drainages near where the center line (running east-west) of the Section 25, crosses the drainage that appears on the USGS 1:24,000 topographic map. This stream drainage has been degraded by previous land use. Mining and timber harvest have left an areas of un-vegetated slope and has caused some sedimentation in the channel. To prevent any further potential degradation, streamside buffers (100ft minimum from the centerline of the stream) would be established for the perennial streams that flow through the project area. No equipment operation would be allowed on slopes greater than 35 percent; hand work would be allowed.
- *Weed Control.* To minimize the potential for introduction or spread of invasive weeds, equipment used for the proposed action would be cleaned prior to entering area and, where possible, would avoid operating within weed-infested areas, such as stands of scotch broom or oblong spurge. Occurrences of these weed species were found only at the edge of the public land and avoidance should be feasible.
- *Cultural Resources.* Flagging-tape buffers would be established around identified cultural resources. These cultural resources would be protected during project implementation.
- *Wildlife.* Attempt to implement the project outside the breeding season, generally spring (March-June) so as not to disrupt nests, dens, and young animals.
- *Wildlife.* Avoid wood rat nests and large woody debris when creating burn piles. If a potential nest cannot be avoided, check the pile for signs of wildlife before lighting. If nests or dens are found, leave the pile alone. If it must be burned, restack it nearby or give the animal a path to escape from the fire.
- *Wildlife.* Leave an uncut patch (minimum of 0.25 acres) for every 10 acres harvested, with patches totaling 5 percent of the area. Use leave trees or large snags as the center for uncut patches. Riparian and other buffers can help to satisfy this goal.
- *Wildlife.* Retain live trees with existing cavities.

- *Wildlife.* Avoid damaging existing downed woody debris, especially large (18+ inches) hollow or rotten logs and rotten stumps during all harvesting operations. Leave all existing coarse woody material (more than 6 inches in diameter at the large end) and snags as possible.
- *Wildlife.* Retention of coarse woody debris in managed stands should more closely model coarse woody debris found in natural stands. Retain and scatter tops and limbs from 20 percent of the trees harvested.
- *Mining Activity.* There are several active mining claims in the project area. BLM is regulating the use of these claims under the federal mining regulations at 43 CFR 3809 and 3715. Mining claimant Louis Saltzer has been authorized by BLM under these regulations to live on one of his mining claims, now within the project area analyzed in this EA. BLM would work with Louis Saltzer to ensure that his mining activity and related occupancy, as allowed under the regulations, is not negatively affected by the proposed action.

# **Lily Gap Forest and Watershed Health Project, Phase 2**

## **Category One Grant Proposal: Site Improvement**

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Project Title: Lily Gap Forest and Watershed Health Project, Phase 2  
County: Calaveras  
Sierra Nevada Conservancy (SNC) Subregion: South Central  
SNC Area Representative: Brandon Sanders  
Area Manager: Julie Bear

### **ORGANIZATION INFORMATION**

Organization: United States Department of the Interior, Bureau of Land Management (BLM), Mother Lode Field Office, 5152 Hillside Circle, El Dorado Hills, CA 95762

Organization Type: Government

Organization Website: <http://www.blm.gov/ca/st/en/fo/folsom.html>

Has the organization successfully completed similar project(s)?: Yes

If yes, please describe the project(s): Lily Gap Forest Health Project, Phase 1. Adjacent to Phase 2 site, 157 acres, \$182,000 budget, application of United States Forest Service's General Technical Report 220 forest health approach, biomass sold to Buena Vista biomass plant near Ione, California.

### **PROJECT CONTACT INFORMATION**

Authorized Representative/Title: William Haigh, Mother Lode Field Manager.

Email: [whaigh@blm.gov](mailto:whaigh@blm.gov)

Address: 5152 Hillside Circle

City, State, Zip: El Dorado Hills, CA 95762

Phone Number: 916 941-3102

Fax Number: 916 941-3199

Day-to-Day Grant Project Manager (Person/Title): Brian Mulhollen

Email: [bmulholl@blm.gov](mailto:bmulholl@blm.gov)

Address: 5152 Hillside Circle

City, State, Zip: El Dorado Hills, CA 95762

Phone Number: 916 941-3118

Fax Number: 916 941-3199

### **DETAILED PROJECT DESCRIPTION NARRATIVE**

#### **Project Description**

BLM's 420-acre Lily Gap Forest and Watershed Health Project is located on BLM-administered public lands in Calaveras County, California. The project is located near the town of West Point in Calaveras County, California at Township 7 North, Range 13 East, Section 25, at latitude 38 degrees, 26 minutes north; longitude 120 degrees, 29 minutes west.

Lily Gap is situated on forested slopes within the Mokelumne River watershed on the south rim of the North Fork Mokelumne River Canyon. Within the project area the consequence of decades of suppression has been the buildup of dead brush, slash, and litter debris in the understory and dense thickets of conifers (especially incense-cedar and ponderosa pine). These conditions are considered unhealthy with many potential downsides, such as loss of ecological diversity, and greater susceptibility to disease/insect infestation.

Critically, these conditions are more likely to support a high severity, high intensity fire—such as a crown fire—that could be devastating to the watershed, not to mention property and lives. The area has not experienced fire in decades, leading to dead brush, slash and litter in the understory surrounding dense thickets of conifers. The parcel is entirely within the wildland urban interface (WUI), near several small towns and dozens of private residences.

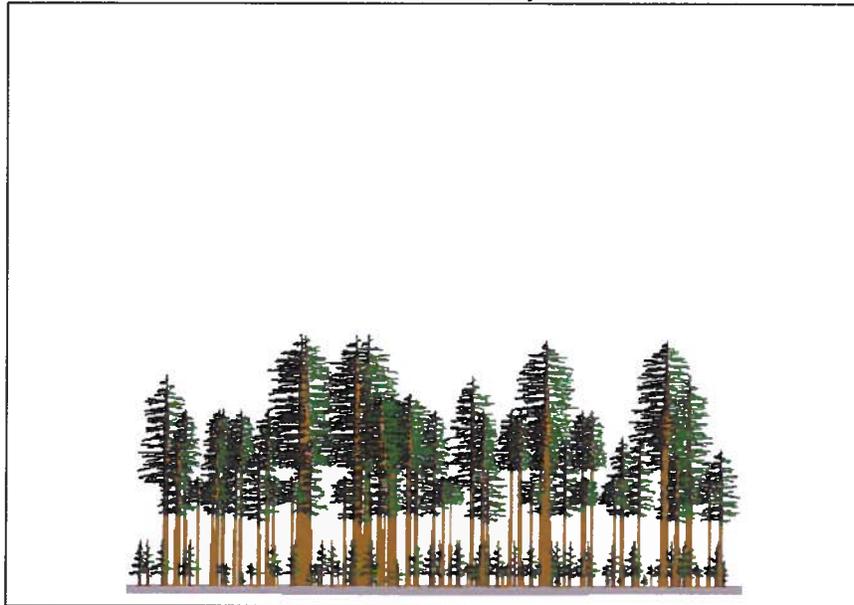
BLM proposes to recreate pre-suppression forest conditions, increase resiliency to future wildfires to reduce the risk of a large damaging fire, and reduce erosion and thereby protect and restore the Mokelumne River watershed. All treatments will conform to the recommendations of the United States Forest Service's General Technical Report 220, *An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests* (GTR-220). Consistent with the recommendations in this report, BLM will implement the following silviculture strategy on the Lily Gap parcel. BLM will create landscape heterogeneity by mimicking the forest conditions that would be created by the fire behavior and return interval associated with differences in slope position, aspect, and slope steepness. Stem density and canopy cover will be highest in drainages and riparian areas, and then decrease over the midslope. Stem density and canopy cover would be higher on northeast aspects compared to southwest. In general pine will be left and white fir, Douglas-fir, and incense-cedar thinned, which will help restore historical species composition. Gaps may be located in areas with thinner soils or lower productivity to foster lower canopy cover since the Lily Gap area historically supported lower tree densities and fuel loads. The relative proportion of these conditions (i.e., low density, dispersed large trees, and large and small gaps and tree groups) and their composition would be varied depending on existing forest conditions and topographic position.

A higher density of tree stems and canopy cover would be retained in the cooler moister microsites, such as along the prominent drainage (outside of the riparian buffer) near the center of the parcel. Defect trees, snags, and downed logs would be retained for wildlife to the extent feasible. In particular, snags greater than 24 inches DBH provide hiding, denning, nesting, and food storage sites for a variety of wildlife. These large snags would be retained unless to do so would create an unusually unsafe concentration of fuels.

The majority of the work would be done by a hand crew under the supervision of BLM's fuel/fire management specialists. Treatment methods will include use of a brush chipper with pile burning and mechanical mastication. No new landings would be built. In some cases, it would be necessary to create tracks into the project area. The tracks are needed to drive heavy equipment to harvest sites and to, then, transport the harvested vegetation to the designated staging areas. Wherever possible, a hand crew with chainsaws and a rubber-tracked chipping and hauling equipment would be used

Figure 1 depicts the stand as it is today. Figure 2 represents what the stand would generally look like after treatment is fully implemented. All the trees less than 8 inches DBH have been removed and some of the larger diameter trees have been removed to increase spacing and reduce overall density. Snags and areas of brush would be retained to provide habitat for certain wildlife.

Stand=1001 Year=2011 Inventory conditions



**Figure 1. Before Treatment**

Stand=1001 Year=2012 Post cutting



**Figure 2. After Treatment**

A small seasonal stream flows through the project site and, within a mile, reach the North Fork of the Mokelumne River. The Lily Gap Phase 2 project will decrease the risk of fire in these watersheds and, in so doing, reduce long-term soil erosion and sediment flow into the Mokelumne River. This is important because of the project's location immediately above the Tiger Creek Reservoir, a critical component of the hydroelectric power generation infrastructure that has been constructed throughout the North Fork canyon. Enhanced fire protection will also contribute to the maintenance of the late seral forest stands characteristic of the north-facing slopes of the river canyon. In addition, BLM's Sierra Resource Management Plan (2008) found the North Fork Mokelumne to be suitable for wild and scenic river designation because it possesses outstandingly remarkable wild, scenic and recreational values (ORVs). Lily Gap Phase 2's beneficial impacts on watershed health would be consistent with this finding and the protection and enhancement of river ORVs.

Forest health improvements will be particularly helpful in the late seral stage stands that are found in

the south central portion of the Lily Gap parcel, adjacent to the small seasonal creek. This would contribute to future enhancement of these stands for wildlife. On-site riparian habitat within the parcel will be protected due to such project design features as streamside buffer zones. This, together with the retention of downed wood, coarse woody debris and snags will benefit a variety of wildlife species, including cavity-nesting birds. Finally, the treatments would enhance a small wet meadow that is located in the riparian drainage. BLM's botanist describes the meadow, with its horsetail, leopard lily, digitalis, columbine, mugwort, sedges and rushes as an interesting and unusual community for this area.

Harvest of material for woody biomass utilization such as electric power generation and shaved animal bedding will occur throughout the project area where it is most economically feasible. It will also provide a demonstration of a dozer and brush rake to pile vegetation, all in a manner that minimizes new ground disturbance and erosion, prevents the spread of weeds and retains coarse woody debris for wildlife habitat.

Phase I of the Lily Gap project, a 157 acre treatment, was completed in July 2013. This request for SNC funding will allow BLM to address a further 200 acres immediately to the north of the Phase 1 site. The total project cost will be \$200,450. BLM is requesting \$185,000 from SNC through this grant process. The remaining \$15,450 will be provided by Congressionally-appropriated forestry funds.

### Workplan and Schedule Narrative

Due to its relatively low elevation (approximately 3,500 feet), the project will be implemented after the end of the fire season, that is, between mid fall and late spring. The anticipated start date is late 2014. Selection of a private timber contractor(s) will be completed by March 2015. Work will begin shortly after the contractor is selected, and will continue over a two year period, with completion by Spring 2017. Pile burning will be conducted in the spring of both 2016 and 2017. Final site cleanup and restoration will occur by April 2017. A detailed project schedule follows:

#### Project Schedule

<b>DETAILED PROJECT DELIVERABLES</b>	<b>TIMELINE</b>
<b>Contracting</b> Prepare government estimate, prepare and post statement of work, conduct bidder site visit, review timely bids, select and award contract.	October 2014 – March 2015
<b>Forest Treatments 2015 - 2016</b> Thin white fir, Douglas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 107 acres.	October 2015 – April 2016
<b>Pile Burning Spring 2016</b> Burn piles of residual forest waste and slash prior to start of fire season.	April 2016
<b>Forest Treatments 2016 - 2017</b> Thin white fir, Douglas fir, incense cedar. Remove brush. Generally leave pine. Leave higher densities of tree stems and cover in cooler moister microsites. Transport biomass for energy production, and transport logs to mills. Treat approximately 50 acres.	October 2016 – December 2016
<b>Pile Burning 2017</b> Burn piles of residual forest waste and slash prior to start of fire season.	January 2017 – March 2017
<b>Final Site Cleanup and Restoration</b> Complete final removal of biomass and project cleanup by start of fire season.	April 2017
<b>Progress Reports</b> Prepare reports describing accomplishments to date	May 2015, May 2016, May 2017

## **Land Tenure**

BLM holds fee title to all project lands. No other agencies or jurisdictions hold any real property interest in these parcels. The property is not a part of any BLM grazing lease. There are no other agreements with any entity that affect project lands or their future operation and maintenance.

## **Restrictions, Technical/Environmental Documents and Agreements Narrative**

National Environmental Policy Act documents have already been prepared and public review completed. A Finding of No Significant Impacts and a Decision Record were signed in May 2011. The Decision Record is the federal approval document; no additional BLM approvals are required and no permissions or permits from other entities are necessary. There are no known encumbrances on the property that could adversely impact project completion. All project work would occur on public lands under the jurisdiction of the BLM. Access to this property is currently available: these are not land locked parcels. Thus, the project is "shovel ready."

## **Organizational Capacity Narrative**

BLM has the staff, training and expertise to complete the project as proposed. All necessary environmental documents have been prepared. BLM will retain ownership and, as a natural resources and land management agency, has the capability and Congressional policy direction to provide long term management for this parcel.

## **Cooperation and Community Support Narrative**

Lily Gap has been endorsed by the Amador Calaveras Consensus Group (ACCG), an award-winning forest collaborative that has implemented numerous healthy forest projects with the participation of federal and state agencies, local jurisdictions, non governmental organizations and private businesses. BLM has been an active participant in the ACCG since its inception in 2008 and the Lily Gap project is BLM's most ambitious contribution to the ACCG's regional watershed protection and restoration strategy. Thus Lily Gap is consistent with the ACCG's All Lands - Triple Bottom Line approach, as well as the Amador Calaveras Cooperative Association for Biomass Utilization's community economic development work.

The project is also a key component of the watershed health strategy currently being developed by the interagency Mokelumne Avoided Cost Analysis (MACA) team. MACA's purpose is to determine how upper Mokelumne River watershed conditions affect forest health, fire risk, erosion potential and other factors directly impacting water users, including major utilities. The MACA team has identified a number of agency projects that could improve the health of surrounding forests, reduce erosion and fire risk and thereby improve water quality and protect related infrastructure. The Lily Gap project is one of the projects being considered by the MACA team. It is located in a MACA planning unit that is being recommended as an area in need of immediate forest treatments to provide for the protection and restoration of the Mokelumne River drainage, lakes and reservoirs along the river, and other natural resources within the watershed.

Though not required for the proposed completion of the site treatment described above this project will also be conducted in such a way as to inform work being done by the Sierra Cascades All-Lands Enhancement (SCALE) Demonstration. In this demonstration project Burney-Hat Creek Community Forest and Watershed Group and the ACCG are working together to advance triple-bottom line (environment, economy, and community) outcomes and connect learning and adaptive work through monitoring. This project will coordinate with projects of the Burney-Hat Creek Community Forest and Watershed Group to share experience and data that informs SCALE efforts. Collectively the SCALE projects intend to advance forest and watershed restoration and fuels thinning on private and

public lands (BLM and Forest Service). The two groups will draw on existing SNC indicators and explore development of new indicators as needed—including identifying indicators and metrics that more effectively address triple-bottom line outcomes. The two groups are jointly exploring and describing ways to advance multi-party monitoring and adaptive learning and management through these projects.

There is no known opposition to this project.

### **Long-Term Management and Sustainability Narrative**

Long term management would be guided by the BLM's Sierra Resource Management Plan (RMP), adopted in 2008, which provides management direction for public lands in the Sierra Nevada Foothills and which is to remain in place through the year 2038. The Sierra RMP requires that BLM's forested lands be managed for late succession/old growth conditions, and that they be thinned for forest health, fuels reduction and special status species habitat. This requirement applies to the Lily Gap parcel, and will dictate its future management. BLM anticipates that the Lily Gap parcel will be monitored by field staff on a regular basis and, when necessary, maintained to ensure that the parcel is moving towards late succession conditions. This would involve selective site retreatment by hand crews every five to seven years.

BLM's permanent staff includes fire and fuel reduction crews who will be available to maintain and retreat this site. Thus the agency has the capacity to sustain a long-term commitment to manage this parcel.

### **SUPPLEMENTAL DOCUMENTS**

The following documents are attached.

- Project Maps, including
  - Project Location Map
  - Parcel Map with County Assessor's Parcel Numbers
  - Topographic Map and Site Plan
  - Air Photo
- Photos of the Project Site

### **FINANCIAL FORMS**

#### **Detailed Budget Form**

A **detailed budget form** is attached that identifies all project costs for which SNC funds are being requested. The form identifies matching funds that will be provided by BLM.

#### **Cost Allocation Plan**

Fifteen percent (15%) of grant funds will be applied to cover the BLM's costs to administer the Lily Gap Forest and Watershed Health project. Administrative costs will include only those direct and indirect expenses that are specifically charged to the Lily Gap project. These will include compensation for personal services (salaries, wages and benefits), office expenses and supplies, equipment including fleet (mileage), contracting oversight and other miscellaneous support costs. Costs will not include insurance, facilities, telephones and communications. No printing or training expenses are anticipated.

# Supplemental Documents

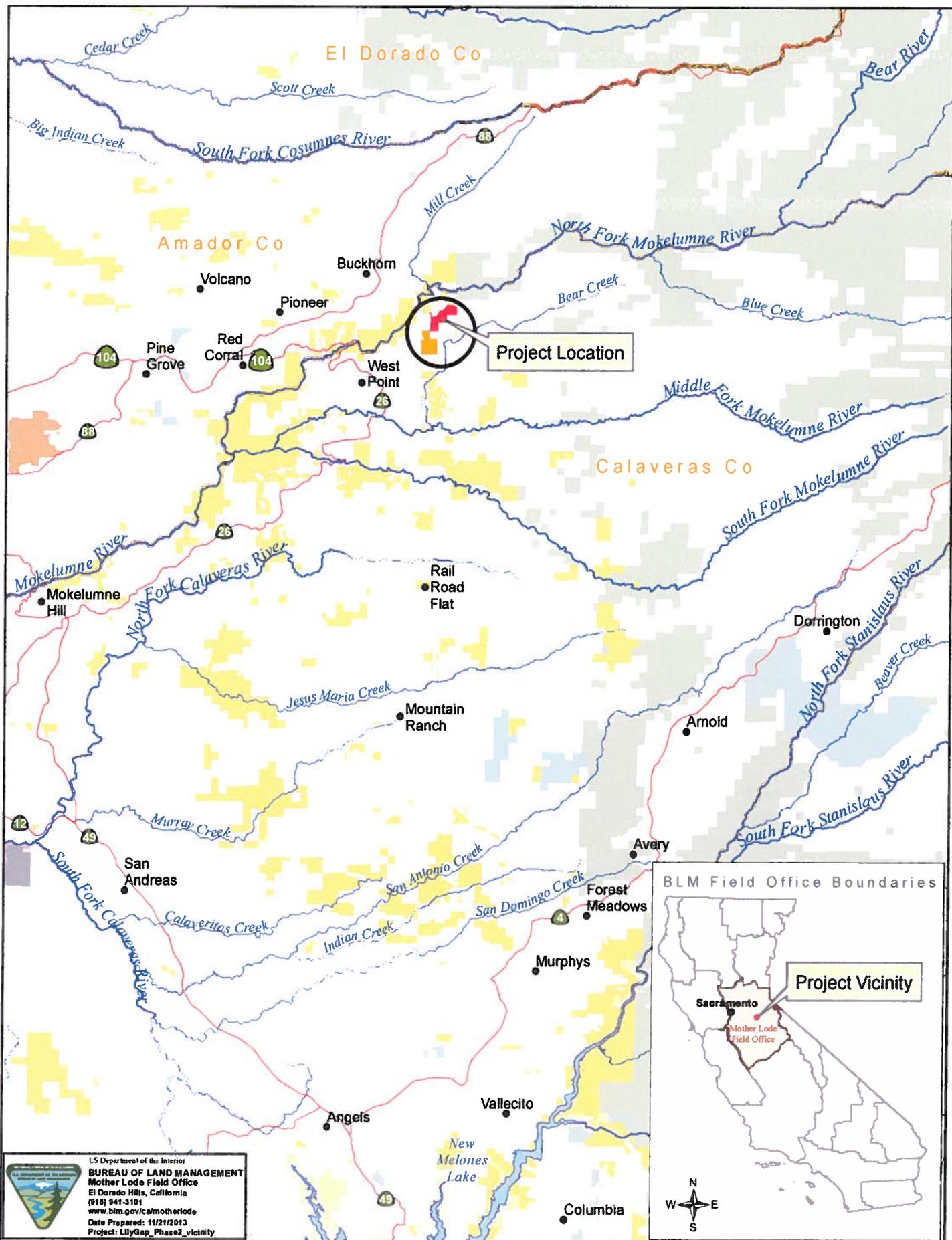
## Project Maps

- Project Location Map
- Parcel Map
- Topographic Map and Site Plan
- Aerial Photo

## Photos

# Project Location Map

## Lily Gap Forest and Watershed Health Project, Phase 2



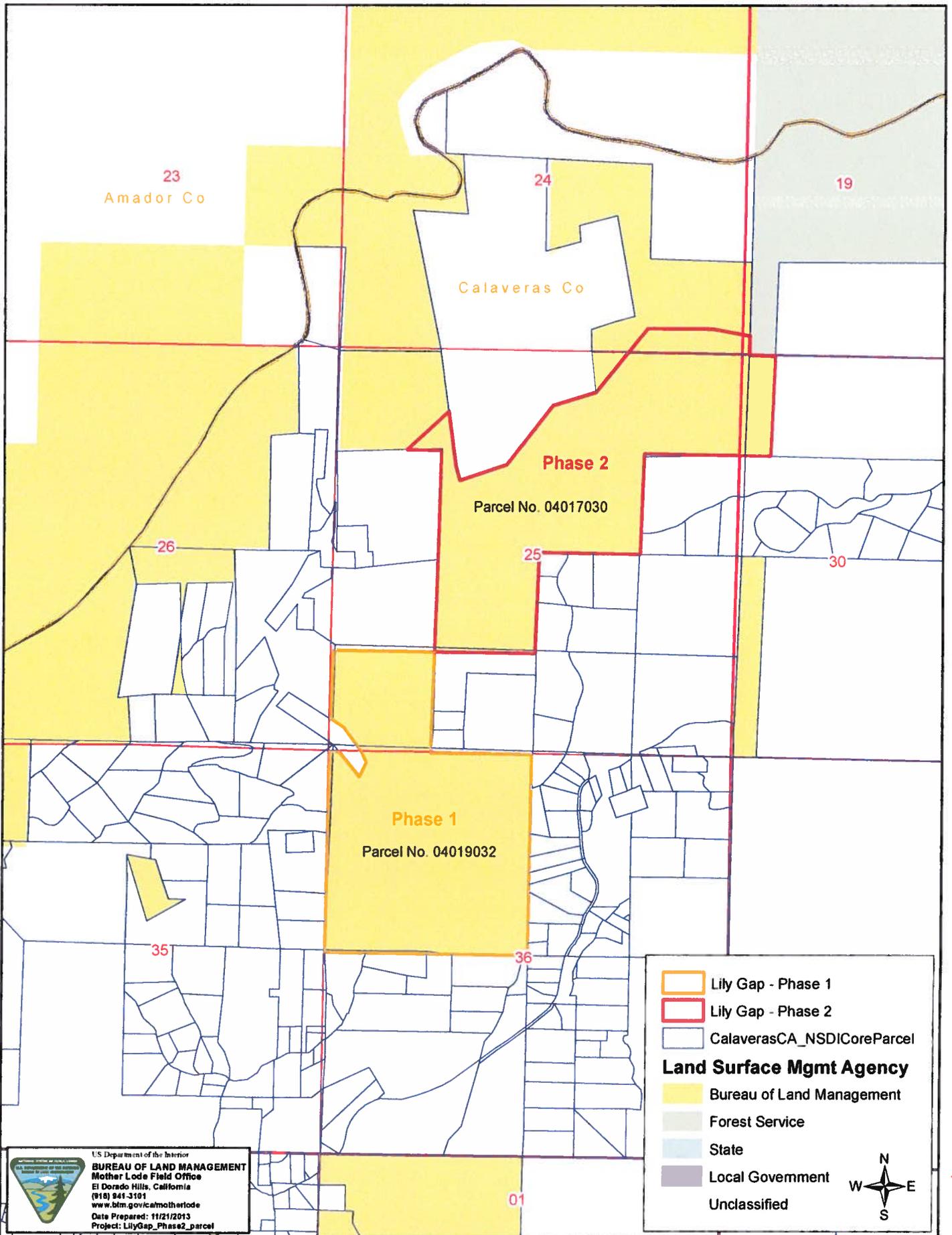
US Department of the Interior  
**BUREAU OF LAND MANAGEMENT**  
Mother Lode Field Office  
El Dorado Hills, California  
(916) 941-3101  
www.blm.gov/motherlode  
Date Prepared: 11/21/2013  
Project: LilyGap\_Phase2\_vicinity

1:250,000

0 1.25 2.5 5 7.5 10 Miles

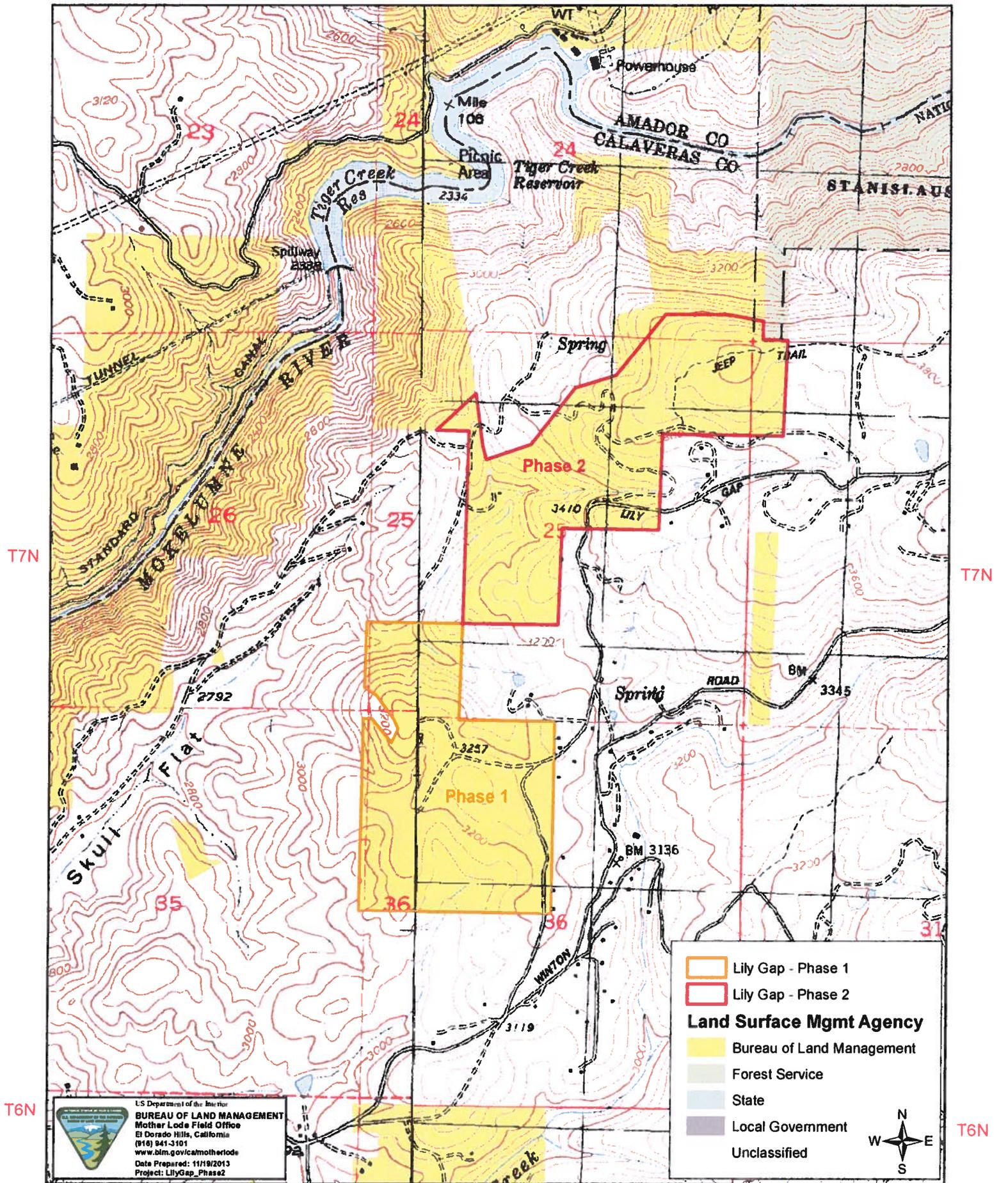
# Parcel Map

## Lily Gap Forest and Watershed Health Project, Phase 2



# Topographic Map and Site Plan

## Lily Gap Forest and Watershed Health Project, Phase 2



US Department of the Interior  
**BUREAU OF LAND MANAGEMENT**  
 Mother Lode Field Office  
 El Dorado Hills, California  
 (916) 841-3101  
[www.blm.gov/calmothere/ode](http://www.blm.gov/calmothere/ode)  
 Date Prepared: 11/19/2013  
 Project: LilyGap\_Phase2

	Lily Gap - Phase 1
	Lily Gap - Phase 2
<b>Land Surface Mgmt Agency</b>	
	Bureau of Land Management
	Forest Service
	State
	Local Government
	Unclassified

1:20,000

R13E



R14E



T7N

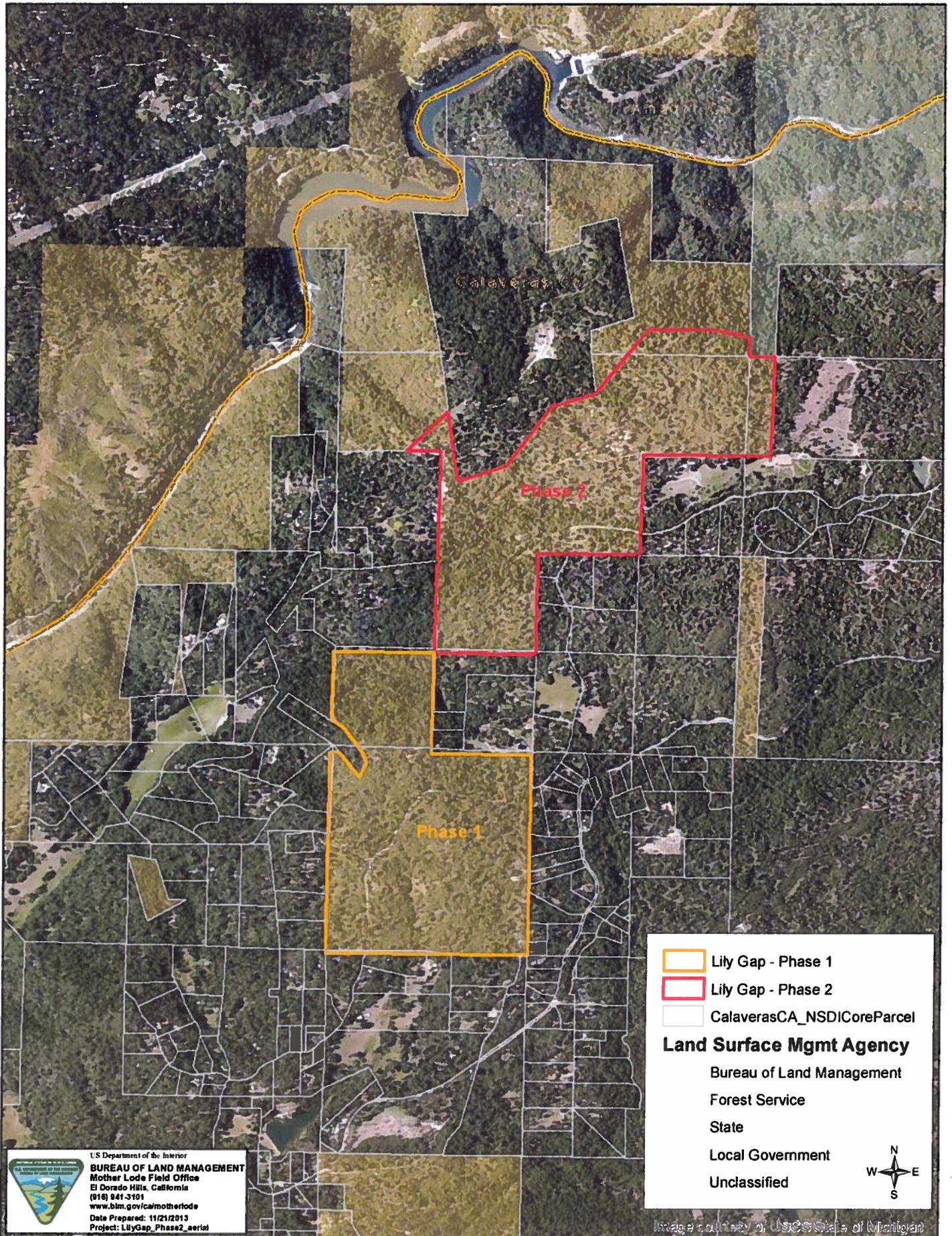
T7N

T6N

T6N

# Aerial Photo

## Lily Gap Forest and Watershed Health Project, Phase 2





**Lily Gap Phase 2: Unthinned Young Tree Stand**

**Lily Gap Phase 2: Dense Manzanita Thicket**





Above and Below: Lily Gap Phase 2 Unthinned General Forest





Lily Gap Phase 1, Post Treatment. Note clustering of trees at bottom of slope.



Above and Below: Lily Gap Phase 1, Post Treatment.



# Detailed Budget Form

**SIERRA NEVADA CONSERVANCY  
PROPOSITION 84 - DETAILED BUDGET FORM**

**Project Name: Lily Gap Forest and Watershed Restoration Project, Phase 2  
Applicant: Bureau of Land Management**

SECTION ONE	Units	Unit Cost	Total Cost	Project Cost Breakdown				Total
				Year One (2014)	Year Two (2015)	Year Three (2016)	Year Four (2017)	
<b>DIRECT COSTS</b>								
<i>Project Management and Forestry/Fuels Staff Costs</i>	740 Hours	\$35/hour	26,000.00	\$4,000.00	\$14,000.00	\$8,000.00		\$26,000.00
<i>Project Timber Contractor</i>	157 Acres	\$766/acre	120,250.00		\$60,125.00	\$60,125.00		\$120,250.00
<i>Pile Burning</i>	2 weeks	\$4,000/week	8,000.00		\$2,500.00	\$5,500.00		\$8,000.00
			0.00					\$0.00
			0.00					\$0.00
			0.00					\$0.00
<b>DIRECT COSTS SUBTOTAL:</b>	0	\$0.00	\$154,250.00	\$4,000.00	\$76,625.00	\$73,625.00	\$0.00	\$154,250.00

SECTION TWO	Units	Unit Cost	Total Cost	Project Cost Breakdown				Total
				Year One	Year Two	Year Three	Year Four	
<b>INDIRECT COSTS</b>								
<i>Monitoring</i>	86 Hours	\$35/hour	3,000.00		\$1,000.00	\$2,000.00		\$3,000.00
<i>Project materials &amp; supplies purchased</i>			0.00					\$0.00
<i>Publications, Printing, Public Relations</i>			0.00					\$0.00
			0.00					\$0.00
<b>INDIRECT COSTS SUBTOTAL:</b>	0	\$0.00	\$3,000.00	\$0.00	\$1,000.00	\$2,000.00	\$0.00	\$3,000.00
<b>PROJECT TOTAL:</b>	0	\$0.00	\$157,250.00	\$4,000.00	\$77,625.00	\$75,625.00	\$0.00	\$157,250.00

SECTION THREE	Units	Unit Cost	Total Cost	Project Cost Breakdown				Total
				Year One	Year Two	Year Three	Year Four	
<b>Administrative Costs (Costs may not to exceed 15% of total Project Cost) :</b>								
<i>Contracting, clerical and natural resource staff salaries and benefits</i>	650 Hours	\$35/hour	22,750.00	\$7,000.00	\$8,000.00	\$7,750.00		\$22,750.00
<i>Equipment including fleet</i>			5,000.00	\$1,000.00	\$2,000.00	\$2,000.00		\$5,000.00
			0.00					\$0.00
			0.00					\$0.00
<b>ADMINISTRATIVE TOTAL:</b>	0	\$0.00	\$27,750.00	\$8,000.00	\$10,000.00	\$9,750.00	\$0.00	\$27,750.00
<b>SNC TOTAL GRANT REQUEST:</b>	0	\$0.00	\$185,000.00	\$12,000.00	\$87,625.00	\$85,375.00	\$0.00	\$185,000.00

SECTION FOUR	Units	Unit Cost	Total Cost	Years Fund Received				Total
				Year One	Year Two	Year Three	Year Four	
<b>OTHER PROJECT CONTRIBUTIONS</b>								
<i>BLM Congressionally Appropriated Funding</i>			15,450.00	\$4,000.00	\$7,000.00	\$4,450.00		\$15,450.00
			0.00					\$0.00
			0.00					\$0.00
			0.00					\$0.00
			0.00					\$0.00
<b>Total Other Contributions:</b>	0	\$0.00	\$15,450.00	\$4,000.00	\$7,000.00	\$4,450.00	\$0.00	\$15,450.00

**NOTE:** The categories listed on this form are examples and may or may not be an expense related to the project. Rows may be added or deleted on the form as needed. Applicants should contact the SNC if questions arise.

\* Operating Costs should be allocated to the percentage that is applicable to the grant based on your cost allocation methodology and cannot exceed 15% of your total project costs.

# Environmental Documentation

Environmental Assessment,  
Finding of No Significant Impact,  
and  
Decision Record



# United States Department of the Interior



## BUREAU OF LAND MANAGEMENT

Mother Lode Field Office  
5152 Hillside Circle  
El Dorado Hills, CA 95762  
[www.ca.blm.gov/motherlode](http://www.ca.blm.gov/motherlode)

### Lily Gap biomass demonstration project (CA-180-10-25) Decision Record April 2011

#### **1.0 Introduction and Background**

The Bureau of Land Management's Mother Lode Field Office (BLM) manages thousands of acres of public lands in the central western Sierra Nevada, particularly within the transition between the lower montane forest and chaparral "belt." These public lands include densely forested tracts in the Lily Gap area north of West Point on the divide between the north and middle forks of the Mokelumne River. Due to decades of fire suppression and other factors, brushy chaparral species, young overstocked stands of conifers (ponderosa pine and incense cedar), and other volatile fuels have increased markedly on these lands, resulting in a corresponding increase in the probability of a high-severity wildfire, with potentially devastating effects on the environment and adjacent private properties. The primary goal of the proposed action is to create healthier, more fire-resilient conditions on 450 acres of forested public land off of Lily Gap Road. Our definition of forest health draws heavily from the ideas and silvicultural strategies of long-term Forest Service research in the central western Sierra Nevada (North et al. 2009). The most important underlying principle of this research is that western Sierran forests are adapted to, and perhaps even dependent on, regular low intensity low severity wildfires. Forest managers should attempt to return forests to pre-suppression-era conditions—prior to circa 1910 when low intensity low severity wildfires likely occurred naturally on a regular interval as a result of lightning strikes and perhaps Native American- (and early settler-) caused ignitions. This fire regime is likely to improve forest health and, critically, lower the potential for the forest to support a catastrophic wildfire; thus protecting the environment and private properties. BLM would demonstrate various fuel reduction methods (chipping, pile burning, mastication, feller buncher, etc.) to determine which treatment is the most cost effective way to create healthy conditions. BLM would explore opportunities to provide vegetative material to the proposed biomass utilization plant near Lone, CA as a way of reducing fuels and thus mimicking the effects of a low intensity low severity fire within the project area. Prescribed fire is the most obvious way to move the project area forest toward healthier pre-suppression conditions. However, prescribed fire was not analyzed in the EA because BLM does not foresee having the budget, personnel, and other resources necessary to conduct a prescribed fire within the project area in a safe manner. Based on information in the EA, the project record, and recommendations from my staff, the following constitutes my decision.

#### **2.0 Decision**

##### **2.1 Alternatives Considered but not Selected**

The no action alternative was considered but not selected. Under this alternative, fuels would not be treated within the project area. None of the negative impacts discussed in the EA would occur: negligible soil disturbance caused by the use of a mechanized equipment and temporary dust due to mastication of vegetation and temporary smoke due to burning piled vegetation. However, BLM would miss an opportunity to determine which treatment method would most cost effectively help BLM to apply the current silvicultural strategies of North et al. (2009). These silvicultural strategies make a lot

of sense from a current management standpoint. These strategies are designed to move west-slope Sierran forests such as the forest found within the project area toward pre-suppression-era conditions—these conditions would potentially create a healthier and more fire-resilient forest. These conditions would help lower the potential for the forest to support a highly destructive wildfire—such as a crown fire—within the Lily Gap area. Local residents are concerned with protecting their homes from wildfire. Therefore, the strategies help BLM to address the fire management goals, objectives, and strategies laid out in the Sierra Resource Management Plan and the office’s Fire Management Plan.

## **2.2 Decision and Rationale**

Based on information in the EA, the project record, and recommendations from my staff, I have decided to implement the proposed action as described in the EA. The proposed action is needed to try to create healthy forest conditions within the project area and, thus, reduce the threat of a high-severity wildfire. BLM would also demonstrate different treatments to determine which method (or methods) is the most cost effective way of reaching the goal of creating healthy forest conditions. The proposed action will help reduce threats to the environment and private property adjacent to public land caused by catastrophic wildfire. There is no time restriction on when the project can be implemented, though all of the project design features must be followed, particularly with respect to preventing unnecessary erosion of sediments into drainages, preventing the introduction of noxious weeds, avoiding identified cultural resources, and ensuring that mining claimants’ activities allowed under BLM’s mining regulations are not unnecessarily disturbed.

## **3.0 Consultation and Coordination**

No special status animal or plant species (or their habitats) will be affected by the project; therefore, consultation with US Fish and Wildlife Service was unnecessary.

## **4.0 Public Involvement**

An earlier version of this EA was posted on the BLM Mother Lode Field Office internet website for a formal 30-day public comment period in October and November 2010. On November 2, 2010, BLM received a letter from the Foothill Conservancy commenting on this EA. In their letter the Foothill Conservancy raised several issues regarding the proposed action. The Foothill Conservancy questioned why BLM had not considered prescribed burning as a treatment option. They pointed out that chipping and mastication without actually removing fuels may not help BLM reach the stated goal of preventing the possibility of a high severity fire—that, in fact, it may not change fire behavior at all. They also pointed out that the EA lacked detail. On November 17, 2010, BLM met to discuss the EA with members of the Foothill Conservancy as well as members of another interested group, Sierra Forest Legacy, at the office of Foothill Conservancy in Pine Grove, CA. We went over specific issues raised in the Foothill Conservancy letter. Another issue that the Foothill Conservancy raised at the meeting is that the EA lacked specifics regarding the current environmental conditions (affected environment) within the project area and the EA also lacked specifics regarding what the project area might look like after the proposed action was fully implemented (the desired future condition). There was also concern that the needs of the proposed biomass plant near Lone might drive BLM forest management in the future. In subsequent email communication, members of Sierra Forest Legacy directed BLM to the long-term forest management research of the US Forest Service (summarized in North et al. 2009) which they believe might be a worthwhile approach to consider in the EA. BLM took the public’s comments into consideration and produced another version of the EA which adopts many of the management ideas of North et al. (2009). BLM met at the project area with the Foothill Conservancy and other interested members of the public on March 7, 2011 to discuss the proposed action and the revised EA. The EA was released for another 30 day public review period on the BLM Mother Lode Field Office internet website during March and April 2011. On April 18, 2011, BLM received an email from the Foothill Conservancy commenting on this EA. In the email the Foothill Conservancy pointed

out that the proposal to remove all conifers under 8 inches DBH was not consistent with the approach of North et al. (2009) which calls on forest managers to leave a full range of conifer size and age classes. BLM updated the EA proposed action to ensure that a full range of conifer size and age classes would be maintained as part of the treatment.

### 5.0 Plan Consistency

Based on information in the EA, the project record, and recommendations from my staff, I conclude that this decision is consistent with the management goals, objectives, and strategies laid out in the Sierra Resource Management Plan and the Fire Management Plan. Specifically, the Sierra Resource Management Plan's Record of Decision (pages 15-16) gives BLM the goal of establishing a cost-efficient fire management program commensurate with threats to life, property, public safety, and environmental resources. My decision is also in compliance with the Endangered Species Act; Section 106 of the National Historic Preservation Act; and other applicable laws, regulations, and BLM policies.

### 6.0 Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825. The effective date of this decision is the date this decision is signed.



William S. Haigh  
Field Manager, Mother Lode Field Office



Date



# United States Department of the Interior



## BUREAU OF LAND MANAGEMENT

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### Lily Gap biomass demonstration project (CA-180-10-25) Finding of No Significant Impact April 2011

It is my determination that this decision will not result in significant impacts to the quality of the human environment. Anticipated impacts are within the range of impacts addressed in the Sierra Resource Management Plan (RMP)/Final Environmental Impact Statement. The proposed action does not constitute a major federal action having a significant effect on the human environment; therefore, an environmental impact statement is not necessary and will not be prepared. This conclusion is based on my consideration of CEQ's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA, and based on my understanding of the proposed action:

- 1) *Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.* Potential impacts include negligible soil disturbance caused by use of a rubber-tracked chipper, masticator, and other mechanized equipment, and temporary dust due to mastication of vegetation and temporary smoke due to pile burning or burning in the biomass plant near Lone, CA. However, with the project design features, none of these impacts would be significant at the local or regional scale (cumulatively) because of the small scale of the proposed action.
- 2) *The degree of the impact on public health or safety.* No aspects of the proposed action have been identified as having the potential to significantly and adversely impact public health or safety. In fact, the project is designed to help firefighters fight wildfire and to protect nearby private residences from wildfire; therefore protecting public health and safety, especially for local residents.
- 3) *Unique characteristics of the geographic area.* The area affected by the proposed action does not have any unique characteristics. Soils, vegetation, wildlife, and cultural resources are all typical for the elevation and terrain in the west central Sierra Nevada.
- 4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial effects.* No anticipated effects have been identified that are scientifically controversial. As a factor for determining within the meaning of 40 C.F.R. § 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration*, 117 F.3d 1520, 1536 (9th Cir. 1997). "The term 'highly controversial' refers to instances in which 'a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.'" *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).
- 5) *The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks.* The analysis does not show that the proposed action would involve any unique or unknown risks.

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* Fuels reduction using hand crews and mechanized equipment (i.e., rubber-tracked chipper, masticator, etc.) is not precedent setting. BLM undertakes these types of projects on a regular basis. Biomass utilization is somewhat new to the Mother Lode Field Office, but the environmental impacts are similar to fuels projects with a pile-burning component, which are nothing new to the field office and are not precedent setting.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.* No significant cumulative impacts have been identified. The proposed action is relatively small in scale and is consistent with the actions and impacts anticipated in the Sierra RMP. BLM has not recently proposed any projects of this scope within the Mokelumne River watershed. Nothing like this is planned in the foreseeable future.

8) *The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources.* The proposed action would not affect cultural resources listed on or eligible for the National Register of Historic Places.

9) *The degree to which the action may adversely affect ESA listed species or critical habitat.* No ESA listed species (or their habitat) would be affected by the proposed action.

10) *Whether the action threatens a violation of environmental protection law or requirements.* There is no indication that this decision would result in actions that would threaten such a violation.



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William S. Haigh  
Field Manager, Mother Lode Field Office



\_\_\_\_\_  
Date



# United States Department of the Interior



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**EA Number:** CA-180-10-25

**Project Name:** Lily Gap biomass demonstration project

**Location:** MDM T 7 N, R 13 E, Sections 24, 25, 26, and 36,  
T 7 N, R 14 E, Section 30  
Lily Gap area near West Point, Calaveras County, CA  
(See attached project area maps in Appendix B)

## 1.0 Purpose of and Need for Action

### 1.1 Need for Action

The Bureau of Land Management's Mother Lode Field Office (BLM) manages scattered public lands off of Winton Road, north of West Point—what is referred to as the Lily Gap area. Much of this area has not experienced wildfire in decades. Shrub stands have aged and now contain a larger proportion of dead fuels, and in some forest stands understory fuels have increased, creating unhealthy forest conditions and making the probability that the area will experience a devastating wildfire more likely. At the same time, the local communities have grown. There are now numerous private residences in the area, many of them adjacent to BLM-administered parcels containing dense fuels. Local residents are concerned about wildfire and are anxious to see public land managers like BLM take action to reduce fuels on public lands. The Lily Gap area is considered to be within the wild land-urban interface (WUI) and the local communities are considered “at risk.”

With this need in mind, the primary purpose of the proposed action is to create healthy forest conditions on approximately 450 acres of forested public land managed by BLM in the Lily Gap area. Our definition of forest health within the project area draws from the findings of long-term US Forest Service research in the montane/mixed conifer forests of the western central Sierra Nevada (North et al. 2009). A key finding of this (and related) research is that mixed coniferous forests of the west central slopes of the Sierra Nevada (including forests types within the project area) are well adapted to, and perhaps dependent upon, regular low severity, low intensity wildfire—something that the Lily Gap area has not experienced for decades. In other words, wildfire was likely an integral part of the lifecycle of western Sierran forests. Within the project area the consequences of decades of suppression have been, most obviously, the buildup of dead brush, slash, and litter debris in the understory and dense thickets of conifers (especially incense-cedar and ponderosa pine). These conditions are considered unhealthy with many potential downsides, such as loss of ecological diversity, and greater susceptibility to disease/insect infestation. Critically, these conditions are more likely to support a high severity, high intensity fire—such as a crown fire—that could be devastating to the environment, not to mention property and lives. A key consideration, then, is how to restore the healthier pre-suppression conditions to the project area. This outcome would have the important effect of increasing the resilience of the forest to future wildfires and reducing the possibility of a high severity, high intensity fire in the Lily Gap area. This is good for the environment as well as for local residents.

The title of this EA is “Lily Gap biomass demonstration project.” If BLM decides to implement the proposed action, what would we be demonstrating? An important aspect of the proposed action is to determine which treatment method would help us achieve our goal of creating healthy forest conditions within the project area in the most cost effective manner. The treatment methods are laid out in Section 2.1.

The most basic question is what would this forest look like if fire had been left to play its natural role? There would be far less brush and shrubs, fewer small diameter trees (including thickets of ponderosa pine and incense cedar), and widely spaced large diameter dominant trees of diverse species (sugar pine, Douglas fir, ponderosa pine, incense cedar, black oak, canyon live oak, madrone, etc.). The majority of trees would be ponderosa pine. There would also be more diversity in the herbaceous layer. This is the desired future condition we are working toward in the proposed action.

If a fire were to occur in this stand during the time of year fires normally start in California, it would likely move into the upper story burning virtually all the trees and vegetation within the project area. By doing proposed treatment, we can move this stand to a healthier, more resilient condition so if a fire were to occur after treatment, it would just kill the small evergreens trees and remove much of the shrub and forb understory—which is what likely occurred historically.

Of note, broadcast prescribed fire seems to be the most obvious and effective way to restore forest health. If healthy forest conditions are seemingly dependent on regular low intensity fire, why not reintroduce fire under controlled conditions? Due to the project area’s close proximity to several homes/communities, air quality issues, the massive accumulation of fuels, budget constraints, and other factors, it is extremely unlikely that BLM would be able to do broadcast prescribed burning within the project area at this time. This treatment is not considered in this EA. Therefore, the treatment options considered would involve cutting vegetation either by hand or by mechanical means (i.e., chipper, masticator, etc.) or both.

Cutting does not, by itself, reduce vegetation/fuels; it rearranges them. Since it is possible that a biomass electric generation plant may be in operation near Lone, Amador County by the time this project is implemented, one goal of the proposed action is to determine which method of treatment could generate biomass for this plant in the most feasible and cost effective manner. This could help to remove unwanted cut vegetation. If hauling cut vegetation to the biomass plant is not feasible, BLM would consider pile burning as an alternative. Regardless of the treatment method demonstrated, the desired future condition of a healthy forest will remain the primary goal.

## **1.2 Conformance with Applicable Land Use Plans**

The proposed action—to improve the health of forests on public land in the Lily Gap area and to make this forest more fire resistant to help protect adjacent private property—is consistent with the Sierra Resource Management Plan, approved in February 2008. The Sierra Resource Management Plan’s Record of Decision (pages 15-16) gives BLM the goal of establishing a cost-efficient fire management program commensurate with threats to life, property, public safety, and environmental resources. BLM’s objectives for meeting these goals are to 1). reduce the risk of wildfire in WUI communities; 2). reduce the risk of catastrophic wildfire through fuels management; 3). use prescribed fire, mechanical, and biological treatments to reduce fuels and promote ecosystem diversity and resilience, control invasive species, reduce fuel hazard, improve wildlife habitat, increase water yield, and enhance watersheds. The Folsom/Mother Lode Field Office Fire Management Plan, approved in March 2008 gives BLM various fire and fuels treatment objectives and strategies for specific lands under BLM’s administration. Specific objectives and strategies for the fire management unit, in which the project area is located, are laid out in the plan. The proposed action is consistent with these objectives and strategies.

### **1.3 Silvicultural Prescriptions for Sierran Mixed-Conifer/Lower Montane Forest**

Our definition of healthy forest conditions within the project area draws heavily from the research of North et al. (2009) in the western Sierra Nevada. Their recent report titled *An ecosystem management strategy for Sierran mixed-conifer forests* (North et al. 2009) contains key concepts and silvicultural principles that we have incorporated into the proposed action to achieve the goal of creating a healthy forest conditions within the project area. Appendix A presents a summary of this research.

## **2.0 Proposed Action and Alternatives**

### **2.1 Proposed Action**

BLM proposes to treat Lily Gap as a “demonstration project,” that is, as a venue for applying a variety of different treatment methods to determine which are the most ecologically effective and economically feasible. Regardless of the treatment method demonstrated, the goal would be to create healthy forest conditions within the project area by applying the management ideas of North et al. (2009) (see Appendix A).

**Silvicultural Strategy:** The silvicultural strategy laid out in Appendix A (especially section A.3) would be applied to all portions of the project area that have the characteristics of a Sierran mixed-conifer/lower montane forest type. This would include nearly the entire the project area with the exception of a dry meadow area and a small wet meadow.

Dead and decadent stands of manzanita and other brush would be removed. All oaks would be retained regardless of canopy position unless they constitute a potential ladder fuel. Other tree species such as madrone and dogwood would be left to create diversity.

Most conifers less than 8 inches diameter at breast height (DBH) would be removed. This includes the dense thickets of incense-cedar and pine. Some conifers less than 8 inches DBH would be retained to ensure that a full range of size and age classes would be represented. Large pines and groups of large pines would be retained, with strategic clearing of potential ladder fuels around them to give them additional protection and to create some open gaps in the canopy. This means that some trees greater than 8 inches DBH would be removed if they are potential ladder fuels and to decrease overall stand density. Any conifers greater than 8 inches DBH that are to be removed to protect the larger “leave” trees and tree clusters would be marked by a BLM forester or fuels specialist. The cut trees would be sold at their highest and best use. Trees larger than 12 inches DBH generally would be sold as sawtimber.

A higher density of tree stems and canopy cover would be retained in the cooler moister microsites, such as along the prominent drainage (outside of the riparian buffer) near the center of Section 25. Defect trees, snags, and downed logs would be retained for wildlife to the extent feasible. In particular, snags greater than 24 inches DBH provide hiding, denning, nesting, and food storage sites for a variety of wildlife. These large snags would be retained unless to do so would create an unusually unsafe concentration of fuels.

**Treatment Methods:** The different treatment methods to be demonstrated are outlined below. The majority of the work would be done by a hand crew (i.e., BLM fuels crew, inmates, Hotshots, contractors, etc.) under the supervision of BLM’s fuel/fire management specialists.

- 1. Brush Chipper with Pile Burning.** The crew would feed cut vegetation into a rubber-tracked brush chipper staged on existing roads. The crew would pile and prep vegetation in 6 x 6 ft

piles for burning at a later date in accordance with a BLM-approved burn plan and other BLM policy. Approximately 60 piles per acre would be constructed.

2. **Mechanical Masticator.** The crew would use a mechanical masticator to grind, chip, and chew vegetation. The masticated vegetation would be broadcasted across the project area, leaving an altered fuel type, which does not reduce the quantity of fuels, but rearranges them so they are more manageable in the event of wildfire suppression. Equipment selected to carry out this task would be designed to minimize ground disturbance. Multiple cutting attachments would be used to adapt to the terrain and fuels.
3. **Biomass.** If the proposed biomass plant is built near Lone, BLM may attempt to harvest biomass size material. The likely method for harvesting biomass within the project areas is as follows. Fallers would use chainsaws to cut brush and trees less than 8 inches diameter at breast height (unless the trees are a potential ladder fuels that threatens the larger "leave" pines). Cut vegetation would be bucked into manageable lengths for the crew to feed into a rubber-tracked chipper. The chips would be fed directly into a trailer towed by a small rubber-tracked vehicle. The vehicle would tow the chips to designated staging areas (existing roads, pullouts, and landings). Here, the chips would be loaded into a semi-truck trailer and transported to the biomass plant.
4. **Biomass Using Feller Buncher.** Another method for harvesting biomass that may be used involves a feller buncher—a tractor with an attachment that can rapidly cut and gather several trees. The feller buncher would cut and position trees and other vegetation into piles at the harvest site. A rubber-tracked skidder would then move the vegetation from the harvest sites to designated staging areas (existing roads, pullouts, and landings). Here, a large-scale tub grinder would chip the vegetation directly into the trailer of a semi-truck for transport to the biomass plant near Lone. Trees of larger diameter which could be utilized as sawtimber would be loaded on log trucks to be hauled to the closest mill. It would be necessary to create tracks into the project area to access harvest sites and to, then, transport vegetation from the harvest sites to the designated staging areas for further processing and loading. Ground disturbance would be kept to a minimum and would occur only where necessary. No new roads would be built. The number of new tracks into the project area would be minimized. The tracks would be put to bed after work at the harvest site is completed. Only existing roads, pullouts, and landings would be used as designated staging areas.
5. **Dozer and Brush Rake.** BLM would demonstrate for the public the use of a dozer and brush rake to pile vegetation for chipping and biomass utilization in a 5-acre area in the project area. BLM would study the environmental effects of this kind of treatment on the 5-acre area.

The project area may see fuels work at any time over the following 10 years. At the end of this 10-year period, fuels work of any kind within the project area would need to be reauthorized, if necessary with a "fresh" NEPA document. The present EA will be reviewed by staff to determine whether it is adequate to use to reauthorize the proposed action and/or other kinds of fuels work.

Any fuels treatment work (i.e., broadcast prescribed burn, etc.) that BLM may propose in the future outside of the scope of the above described proposed action and/or affecting land outside of the project area analyzed in this EA would be subject to BLM's full environmental review/decision-making process. In other words, a new NEPA document may be needed, including new cultural and biological recommendations.

## 2.2 Project Design Features

All treatment work would be conducted subject to the following stipulations.

1. **Minimize New Ground Disturbance.** Cut vegetation would be forwarded to designated staging areas: existing roads, road pullouts, and landings on BLM-administered land for further processing and loading into trucks. No new landings would be built. In some cases, it would be necessary to create tracks into the project area. The tracks are needed to drive heavy equipment to harvest sites and to, then, transport the harvested vegetation to the designated staging areas. Wherever possible, a hand crew with chainsaws and a rubber-tracked chipping and hauling equipment would be used (rather than a feller buncher) to harvest biomass and sawtimber. Biomass material would not be harvested unless the biomass plant is built at Lone, as proposed. Berms, large boulders, and other kinds of barriers may be placed at strategic locations after harvest to prevent dirt bikes and other off-highway vehicles from driving in the treated area and causing erosion.
2. **Erosion and Sedimentation Control.** Erosion and sedimentation are potential issues affecting the drainages near where the center line (running east-west) of the section 25, crosses the drainage that appears on the USGS 1:24,000 topographic map. This stream drainage has been degraded by previous land use. Mining and timber harvest have left an areas of un-vegetated slope and has caused some sedimentation in the channel. To prevent any further potential degradation, streamside buffers (100 ft minimum from the centerline of the stream) would be established for the perennial streams that flow through the project area. No equipment operation would be allowed on slopes greater than 35 percent; hand work would be allowed.
3. **Weed Control.** To minimize the potential for introduction or spread of invasive weeds, equipment used for the proposed action would be cleaned prior to entering area and, where possible, would avoid operating within weed-infested areas, such as stands of scotch broom, or oblong spurge. Occurrences of these weed species were found only at the edge of the public land and avoidance should be feasible.
4. **Cultural Resources.** Flagging-tape buffers would be established around identified cultural resources. These cultural resources would be protected during project implementation.
5. **Wildlife.** Attempt to implement the project outside the breeding season, generally spring (March-June) so as not to disrupt nests, dens, and young animals.
6. **Wildlife.** Avoid wood rat nests and large woody debris when creating burn piles. If a potential nest cannot be avoided, check the pile for signs of wildlife before lighting. If nests or dens are found, leave the pile alone. If it must be burned, restack it nearby or give the animal a path to escape from the fire.
7. **Wildlife.** Leave an uncut patch (minimum of 0.25 acres) for every 10 acres harvested, with patches totaling 5 percent of the area. Use leave trees or large snags as the center for uncut patches. Riparian and other buffers can help to satisfy this goal.
8. **Wildlife.** Retain live trees with existing cavities.
9. **Wildlife.** Avoid damaging existing downed woody debris, especially large (18+ inches) hollow or rotten logs and rotten stumps during all harvesting operations. Leave all existing coarse woody material (more than 6 inches in diameter at the large end) and snags as possible.

10. **Wildlife.** Retention of coarse woody debris in managed stands should more closely model coarse woody debris found in natural stands. Retain and scatter tops and limbs from 20 percent of the trees harvested.
11. **Mining Activity.** There are several active mining claims in the project area. BLM is regulating the use of these claims under the federal mining regulations at 43 CFR 3809 and 3715. Mining claimant Louis Saltzer has been authorized by BLM under these regulations to live on one of his mining claims, now within the project area analyzed in this EA. BLM would work with Louis Saltzer to ensure that his mining activity and related occupancy, as allowed under the regulations, is not negatively affected by the proposed action.

### **2.3 No Action**

Under the no action alternative, BLM would not treat fuels in the project area. Fuels would not be harvested for biomass.

### **2.4 Alternatives Considered but Eliminated from Detailed Analysis**

Due to the project area's close proximity to several homes/communities, air quality issues, budget constraints, and other factors, it is extremely unlikely that BLM would be able to do broadcast prescribed burning within the project area. This alternative is eliminated from detailed analysis.

## **3.0 Affected Environment**

The project area is approximately 420 acres of public land located off of Lily Gap Road/Winton Road, two air miles north east of the town of West Point, in the central Sierra Nevada foothills. Specifically, the project area is located just northwest of Skull Flat, on the divide between the north and south forks of the Mokelumne River. Elevations within the project area range from 3760 to 2840 ft above sea level. There are several unnamed seasonal streams in the project area that drain to the North Fork of the Mokelumne River. One of the drainages (known historically as Skull Flat Gulch or Skull Flat Creek) runs east-west through the project area in Section 25. This drainage is, in some sections, deeply incised and flows perennially. Please refer to the project area maps in Appendix B.

Vegetation in the project area varies depending on elevation, aspect, soils, etc. While westside Ponderosa pine forest tends to be the dominate overstory species over much of the area, the occurrence of Douglas fir, incense-cedar, sugar pine and oak, lends portions of the project area to being classified as mixed conifer type. Whiteleaf manzanita and mountain misery dominate the understory layers. On more north facing slopes the amount of Douglas fir, incense-cedar, and sugar pine as well as canyon live oak increases. Along Skull Flat Creek, big leaf maple, mock orange, white alder, and mountain dogwood become prominent. Other associated woody species include black oak, madrone, deer brush, buckbrush, pinemat ceanothus, toyon, Sierra gooseberry, golden fleece, and poison oak. Due to the lack of disturbance, the area has become thick with brush and suppressed conifers of many species. There are numerous places where the whiteleaf manzanita is so thick, it is impossible to walk through.

The drainages do not support riparian vegetation for the most part. The prominent east-west drainage in Section 25, known as Skull Flat Creek, does support some riparian vegetation (as indicated in the paragraph above), but it is not well developed probably because of the steepness of the grade. Of note, near where the center line (running east-west) of Section 25 crosses Skull Flat Creek, there is a wet meadow dominated by horsetail, with leopard lily, digitalis, columbine, mugwort, sedges, and rushes. There is a dry meadow in the southern portion of the parcel in Section 36.

The vegetation within the project area provides habitat for a variety of wildlife typical for the central Sierra foothills, including black bear, coyote, bobcat, grey fox, California quail, Steller's jay, raven, hawks, and eagles.

The project area is generally within the Mother Lode (east belt), a region of California that experienced substantial gold mining beginning shortly after the discovery of gold in the region in 1848 and lasting to approximately the time that the USA entered World War II (and, in some cases, after World War II). In fact, gold mining (and later logging) was historically the backbone of the region's economy. Many of the current towns in the vicinity of the project area (such as West Point and Railroad Flat) were founded during the Gold Rush (1848 to ca. 1858). Logging intensified after World War II. Evidence of mining and logging activity within the project area is a legacy of the region's historic mining and logging economies—economies that helped to support these and other towns. For more information about the cultural resources found within the project area, refer to the attached cultural resources inventory report by the BLM archaeologist.

The project area is near the boundary of the Stanislaus National Forest. There are numerous residences on private land in the general area, including along the boundaries of BLM-administered land within the project area. The level of recreational use in the project area is quite low. The project area may see some use by hunters. There has been off-highway vehicle use within the project area, as well. Under the 2008 Sierra RMP this use is not allowed off of roads designated for motorized use.

BLM manages this area in accordance with class III visual resource management (VRM) standards. BLM's objective for class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat basic elements found in the predominant natural features of the characteristic landscape.

There are several active mining claims within the project area. BLM is regulating the use of these claims under the federal mining regulations at 43 CFR 3809 and 3715. Mining claimant Louis Saltzer has been authorized by BLM under these regulations to live on one of his mining claims, now within the project area analyzed in this EA.

## **4.0 Environmental Effects**

The following critical elements have been considered in this environmental assessment and have been determined to be unaffected by the proposal: areas of critical environmental concern, prime/unique farmlands, floodplains, wetlands and riparian zones, wilderness, and environmental justice.

### **4.1 Impacts of the Proposed Action and Alternatives**

**Forestry.** Using data from the Forest Inventory and Analysis gathered by the Forest Service and field observations by the BLM forester, we were able to visually depict what the forest looks like now and what it would look like after we have fully implemented the proposed action. This was accomplished by processing the data through the Forest Vegetation Simulator (FVS). This computer program takes stand data and allows you to set parameters for different types of treatments, and then project the stand into the future to see what would happen after the treatments have been implemented. It is important to remember that this is a "representation" of this stand using real data, and not an exact duplication.

Figure 1 depicts the stand as it is today. Figure 2 represents what the stand would generally look like after treatment is fully implemented. All the trees less than 8 inches DBH have been removed and some of the larger diameter trees have been removed to increase spacing and reduce overall density. Keep in mind that snags and areas of brush would be retained to provide habitat for certain wildlife.

Stand=1001 Year=2011 Inventory conditions



**Figure 1. Before Treatment**

Stand=1001 Year=2012 Post cutting



**Figure 2. After Treatment**

**Soil – Air – Water.** The proposed action would have negligible short-term negative impacts on atmospheric, water, and soil resources in the project area, especially if heavy equipment is not used to harvest vegetation for biomass. There are small seasonal streams in the area that feed into the North Fork of the Mokelumne River, a mile or so to the west. The proposed action could cause erosion and some additional sediment to flow into these streams and into the river. BLM has recommended that the river, from Tiger Creek Reservoir to Highway 49 be incorporated into the national wild and scenic river system. Water quality is one of the outstandingly remarkable values that, in BLM's view, makes this stretch of river potentially eligible for wild and scenic designation. The area that would be treated is relatively small in size and ground disturbance would be minimized using the project design features in Section 2.2 of this EA. In particular, heavy equipment would not operate on slopes greater than 30 percent and/or within 100 ft of perennial streams. Equipment used for the project is small in terms of size and power and would be equipped with rubber-tracked tires to minimize ground disturbance. The proposed action would not have more than a negligible impact on soils and water quality. Cutting and chipping of vegetation, as proposed, would create some dust, but again dust created by the proposed action is small and not enough to seriously affect air quality. The same can be said for potentially burning vegetation harvested in the project area in a biomass plant. The proposed action is too small to seriously affect air quality on a local or regional scale.

**Botany.** BLM botanists analyzed the impacts of the proposed action on botanical/vegetation resources, especially special status plants. The analysis is designed to help BLM meet its obligations under the Endangered Species Act and meet other authorities and BLM policies. The botanist recommended that the proposed actions would not affect threatened and endangered plants or other BLM special status plants. White leaf manzanita chaparral and ponderosa pine/black oak forest are project area plant communities adapted to periodic wildfire. It is likely that the project area has experienced natural wildfire events in the past and has recovered after the wholesale removal of shrubs and other understory vegetation. Likewise, the common woody species (e.g., white leaf manzanita) that would be cut in the course of the proposed action would reestablish themselves within the project area over time. However the relative abundance of species can be altered by the treatment method used to reduce fuels. For instance, cutting shrubs with a chainsaw or masticator favors sprouting species like chamise or toyon that are not killed by cutting. These species can reestablish themselves quickly. Obligate seeding species like white leaf manzanita may become less abundant in the stand after this kind of treatment.

**Wildlife.** The BLM wildlife biologist analyzed the impacts of the proposed action on wildlife, especially on special status wildlife. Her analysis was designed to help BLM meet its obligations under the Endangered Species Act and other authorities and BLM policies. The biologist recommended that the proposed action would not affect threatened and endangered wildlife or other BLM special status wildlife.

While mechanical fuels treatments can decrease the risk of catastrophic fire, they do not provide the ecosystem benefits of low intensity low severity fire, and they alter habitat needed by wildlife. In general, fire-dependent species, species preferring open habitats, and species that are associated with early successional vegetation or that consume seeds and fruit appear to benefit from mechanical fuel reduction activities. Increasing understory light for shrub patch development can increase habitat for some small mammals and birds. In contrast, species that prefer closed-canopy forests or dense understory, and species closely associated with those habitat elements that may be removed or consumed by fuel reductions, would likely be negatively affected by fuel reductions. Some habitat loss may persist for only a few months or a few years, such as the loss of shrubby understory vegetation which can recover quickly. The loss of large-diameter snags and down wood, which are important habitat elements for many wildlife and invertebrate species, may take decades to recover and thus represent some of the most important habitat elements to conserve during fuel reduction treatments.

Retention of snags is addressed in the proposed action. Downed wood retention is addressed in project design features 10 and 11. These measures would reduce this impact.

Overall, direct mortality of wildlife owing to crushing from heavy equipment during fuel reduction is considered to be low, but this is mostly based on anecdotal information. It is believed that most species are able to find refuge microsites (e.g., inside burrows or under surface objects) or move away from approaching equipment. However, spring-season thinning during the breeding season may result in mortality of ground- and shrub-nesting bird nestlings and species living within litter such as small mammals, reptiles, amphibians, and invertebrates. Project design feature 6 that attempts to avoid the breeding/nesting period would reduce this impact.

Black bear. By volume, about 25 percent of black bear diet can consist of insects (mainly ants and yellowjackets) obtained primarily from down logs. A decrease in down wood would result in fewer ants and yellowjacket nests available to black bears. Project design features 10 and 11 address the retention of coarse woody material. Fuels reduction would likely increase the amount of grasses and berries used by black bears for foraging.

Deer. The proposed fuels reduction strategy would increase forage quantity and quality for deer. However, escape cover for mule deer, and other animals that need high shrub cover to avoid predators would be reduced. Project design feature 8 which calls for the retention of uncut patches of vegetation would reduce the impacts of less escape cover.

Small Mammals. Shrubs, down wood, and snags provide important cover from predators thus the loss of these habitat elements may have negative consequences for some small mammal species. The silvicultural strategy to be implemented, along with project design features 10 and 11, address snag and down wood retention and would reduce this impact. Small mammal species that need high shrub cover to avoid predators may be negatively affected by shrub removal for the first few years post-treatment, but then exceed pretreatment population levels when shrubs recover and food sources are high from increased light, herbaceous growth, and seed production. Project design feature 8 that retains patches of uncut vegetation would reduce the impacts of shrub removal. However, other species prefer open habitat conditions and may benefit from the food resources provided by plentiful grasses and forbs that may establish after fuel reduction. Some species of small mammals prefer high canopy closure, such as northern flying squirrel, and thus may be adversely affected by thinning treatments. Thinned stands would likely be poor bushy tailed woodrat habitat due to their association with abundant large snags, mistletoe brooms and soft log cover. Project design feature 10 that addresses retention of pre-harvest coarse woody material and the proposed action which addresses retention of snags will reduce these impacts.

Bats. Several species of bats roost under the bark of tall, large-diameter trees or in cavities of large snags. If large-diameter snags and trees are protected during fuel reduction as proposed, it is likely that fuels reduction may have minimal or even positive effects on bat populations. Retention of large trees and snags is addressed in the proposed action and project design features.

Birds. Fuels reduction conducted during the nesting season is more likely to result in high mortality of nestlings, especially for species nesting on the ground and in shrubs and small trees. Project design feature 3 that attempts to avoid the breeding/nesting period would reduce this impact. Fuels reduction prior to the nesting season is likely to reduce nesting habitat for ground- and shrub-nesting species. At the population level, the proposed project would not have a measurable negative effect on migratory bird populations. This is in part because the project is relatively small compared to the amount of mixed conifer forest within the field office boundary. The impact is further reduced by project design feature 8 which leaves patches of uncut vegetation.

Bird responses to fuels reduction are dependent on the species and other factors. Some bird species prefer early successional and open habitats, and these species are likely to increase in abundance after fuel reduction. In contrast, some bird species may be less abundant after fuel reduction. Hurteau et. al (2008) found that mountain chickadee and yellow-rumped warbler were particularly sensitive to thinning treatment in his study at the Southwestern Plateau. Removal of large trees or snags would likely affect species nesting in tree canopies and cavities of snags or live tree boles. Recruitment of large snags for cavity nesters may take decades or longer, depending on existing stand conditions. The proposed action which addresses the retention of large trees and snags would reduce these impacts. Further, project design feature 9 that addresses retention of live trees with cavities would reduce these impacts.

**Cavity-nesting birds.** If fuel treatments involve removing or eliminating snags, then a net loss of nesting habitat for primary and secondary cavity-nesting birds might be expected for many years. The majority of research studies report that fuel treatments result in a decrease in populations of cavity nesters owing to loss of dead trees used for nesting and roosting. The proposed action which addresses the retention of large trees and snags would reduce these impacts. Further, project design feature 9 that addresses retention of live trees with cavities would reduce these impacts.

**Raptors.** The more open understory created by fuel reduction may be advantageous to some species of hawks, owls, and eagles that prey on small mammals and birds in open forests and small clearings. Prey species that have less cover are more easily captured, and some prey species prefer open forests (for example, deer mice). However, some raptor species and some small mammals and avian prey prefer closed canopy forests and thus may avoid stands that have been treated to reduce fuels. Raptor species that prefer closed canopy forest, such as California spotted owl and northern goshawk, were not detected in the project area so these raptors will not be impacted by the project. The removal of trees with dwarf mistletoe brooms during thinning treatments would likely be detrimental to wildlife species that nest in mistletoe brooms, including great horned owl, northern goshawk, Cooper's hawk, California spotted owl, and red-tailed hawk. Retention of defect trees which is addressed in the proposed action would reduce this impact.

Thinning from below, while still retaining large trees, snags, large downed wood, and high canopy closure should allow continued habitat suitability for northern goshawk and California spotted owl. Although vegetation manipulation to reduce wildfire hazard may create less than optimum habitat for northern goshawk and California spotted owl, this should be weighed against the hazard for stand replacement fires and complete loss of habitat over large areas. Retaining large trees, snags, large downed wood, and patches of high canopy closure is addressed in the proposed action and the project design features. In addition, northern goshawk and California spotted owl were not detected in the project area, and therefore would not be impacted by the proposed action.

**Amphibians.** A few amphibians are strictly aquatic, but most use upland habitats at various times during the year, and a few species are strictly terrestrial. Upland habitat use by forest amphibians largely depends on the availability of moist duff and litter and rotting down wood. Amphibian response to reducing canopy cover would likely be unfavorable because of the warmer and drier conditions created in the understory vegetation, down wood, litter, and soil. Most terrestrial salamanders require moist soils or decomposing wood to maintain water balance, and dry conditions usually result in suppressed populations. Project design features 10 and 11 that address retention of downed wood would reduce this impact. Anurans (frogs and toads) may be less affected by changes in environmental conditions associated with the proposed fuel reduction project because of their tendency to travel at night and during rain events, their greater vagility than salamanders, and their close association with wetlands. Still, species that frequently occupy terrestrial habitats such as many salamanders, boreal toads, and tree frogs may be killed during fuel treatments or find post-treatment conditions unsuitable.

These negative effects would be expected to be short-term. The direct mortality of amphibians during fuels reduction treatment is not anticipated to be high. Fuels reduction treatments may contribute fine sediment to streams because of increased surface runoff. Sedimentation causes reduced survivorship of eggs and tadpoles of some stream-breeding amphibians that lay their eggs and rear tadpoles under rocks or within interstitial spaces in the substratum. Project design feature 2 that establishes stream buffer zones would reduce sedimentation into the stream, thus reducing this impact.

**Reptiles.** James and M'Closkey (2003) found that the removal of dead trees (standing and prone) during fuels treatment on the Colorado Plateau may limit the local distribution, abundance, and diversity of lizards, which include dead trees in their microhabitat for shelter, perching, foraging, courting, and defending territories. Removal of dead trees could seriously affect the local abundance and diversity of lizard species, which spend substantial time in this microhabitat. Project design features 10 and 11 address the retention of coarse woody debris, and the proposed action addresses retention of snags. The retention of snags and coarse woody debris would reduce these impacts.

**Coarse Woody Debris.** One of the key differences between biomass removal and a traditional timber harvest is the reduction of dead wood on the forest floor. Besides providing wildlife habitat, dead wood serves as a seedbed for regeneration, releases nutrients back into the soil and forest, decreases runoff and erosion, facilitates nitrogen fixation, and stores forest carbon.

Butts and McComb (2000) found in their study site in western Oregon that coarse woody debris reductions associated with thinning of stands may negatively impact salamanders and shrews. The abundance of ensatina and clouded salamanders increased with the volume of coarse woody debris. In addition, the probability of encountering either ensatina or Trowbridge's shrew increased with cover of coarse woody debris on the forest floor. The study suggests that current management guidelines for coarse woody debris retention may not provide adequate habitat for forest-floor vertebrates that depend on this component of the habitat. The authors suggest that the retention of coarse woody debris in managed stands should more closely model coarse woody debris found in natural stands, and thus recommend coarse woody debris retention in the range of 100-300 m<sup>3</sup>/hectare. This is more likely to provide coarse woody debris for terrestrial salamanders.

In three regions (West, North and East) of south and central Sweden, Gunnarson et. al. (2004) studied short-term effects of slash removal on species richness and abundance of beetles in coniferous and mixed forests. The study concluded that extensive slash removal leads to impoverished species richness of beetles at a local scale. Slash heaps left on site may provide important refuges for ground-active beetles. Moreover, the results support the general theory that microhabitat structure affects arthropod abundance and diversity. Project design features 10 and 11 that address the retention of coarse woody debris would reduce these impacts.

**Cultural Resources.** The BLM archaeologist has conducted a cultural resource study of the proposed action to determine whether significant cultural resources could be affected by the proposed action. The study includes a background records search and field inventory. The study is designed to help BLM meet its obligations under Section 106 of the Historic Preservation Act. The background record search and field inventory indicate very low sensitivity for prehistoric resources, especially village sites. The terrain is mostly steep and heavily forested. The project area has a much higher sensitivity for historic-era gold-mining- and logging-related resources. Logging during the last 30 to 50 years has also left a mark on the project area in the form of skid roads, stumps, and eroded areas. All cultural resources found within the project that could be affected by the proposed action would be flagged for avoidance. In other words, no cultural resources would be affected by the proposed action. It is anticipated that the proposed actions would not affect significant cultural resources. Consultation with Native Americans is occurring as this EA is put out for public review. All Native American input will

be carefully considered. We do not anticipate that any places of traditional religious and cultural significance to Native Americans would be affected. If we do identify such places we will work with the affected Native Americans to modify the proposed action to avoid negative effects.

**Recreation.** The proposed action could have negligible short-term negative impacts on recreational use. Hunters and motorists on designated routes might be inconvenienced temporarily during project implementation due to the noise and the dust caused by cutting and chipping fuels, and the use of the roads in the area by project-related vehicles including a semi-truck/trailer. Recreationists would continue to use the project area after the proposed action is implemented with no additional inconvenience. As noted in the affected environment section, there has been off-highway vehicle use within the project area. Under the 2008 Sierra RMP this use is not allowed off of designated roads. The proposed action would be done in a way that does not increase unauthorized use of off-highway vehicles within the project area.

**Visual Resources.** The project area is not known for its visual resources. The proposed project could have a negligible negative impact on visual resources. Vegetation would be removed. Some might consider this an improvement to the scenery. Most importantly, the proposed action would be consistent with BLM's VRM class III management objective under the 2008 Sierra RMP, which is to partially retain the existing character of the landscape.

#### **4.2 Impacts of the No Action Alternative**

There would be no direct impacts to environmental resources, such as atmospheric, soil, water, biological, and cultural resources. Though highly variable and difficult to predict with certainty, not implementing the proposed action could lead to detrimental impacts to forest health, firefighting efforts, and adjacent private properties. If a fire were to occur within the project area during the usual California fire season, it would likely move into the upper story—a crown fire—burning virtually all the trees and vegetation within the project area. By doing proposed treatment, we can move this stand to a healthier, more resilient condition so if a fire were to occur after treatment, it would just kill the small evergreens trees and remove much of the shrub and forb understory—which is what likely occurred historically. The BLM may also miss an opportunity to provide vegetation to a biomass plant near Ione. We would miss an opportunity to help produce energy and increase economic growth. Quantifying this impact is impossible.

#### **4.3 Cumulative Impacts**

Negative cumulative impacts on the larger watershed scale are not anticipated. The proposed action would have negligible negative impacts on commonplace plants and wildlife. The current condition of the vegetation has been influenced by decades of wildfire suppression. Other than prescribed fire (or an uncontrolled wildfire), which has been removed from further consideration in this EA for a variety of reasons (refer to Section 2.4), there is not at present a better way to reduce dense understory vegetation that would have been reduced by wildfire in the past, before fire suppression was practiced. Prescribed burning is severely limited by safety and air quality concerns, especially in the wildland urban interface. The number of homes in close proximity to the project area would make burning here problematic. The proposed action is expected to have beneficial cumulative impact on wildfire suppression in the area, as long as BLM maintains the treatment area.

With respect to atmospheric, soil, and water resources, negative cumulative impacts on the watershed scale are not anticipated. The project design features would greatly limit the amount of potential erosion of sediments into the drainages/tributaries of the North Fork of the Mokelumne River. BLM has not recently proposed any projects of this scope within the Mokelumne River watershed. Nothing like this is planned in the foreseeable future.

## 5.0 Agencies and Persons Consulted

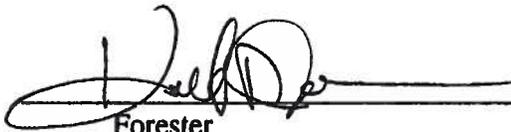
### 5.1 Authors

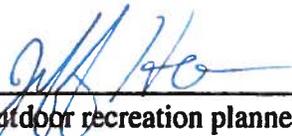
James Barnes, BLM NEPA coordinator/archaeologist  
Keith Johnson, BLM forester  
Al Franklin, BLM botanist  
Peggy Cranston, BLM wildlife biologist  
Brian Mulhollen, BLM fuels specialist

### 5.2 BLM Interdisciplinary Team/Reviewers:

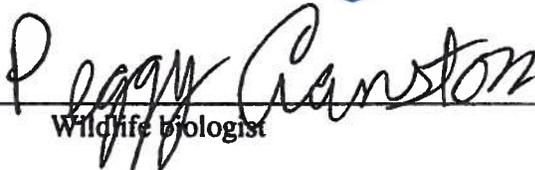
  
NEPA coordinator/Archaeologist      3/1/11  
Date

  
Fuels specialist      3/1/11  
Date

  
Forester      3/1/11  
Date

  
Outdoor recreation planner/VRM specialist      2/25/11  
Date

  
Botanist      2/24/2011  
Date

  
Wildlife biologist      2/25/2011  
Date

### 5.3 Availability of Document and Comment Procedures

This EA will be posted on Mother Lode Field Office's website ([www.blm.gov/ca/motherlode](http://www.blm.gov/ca/motherlode)) under NEPA and will be available for a 30-day public review period. The EA is also available by mail upon request during this 30-day public review period. Comments should be sent to James Barnes at Bureau of Land Management, Mother Lode Field Office, 5152 Hillsdale Circle, El Dorado Hills, California 95762 or emailed to [jjbarnes@blm.gov](mailto:jjbarnes@blm.gov).

#### **5.4 References Cited and Sources of Information**

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## Appendix A

### Silvicultural Prescription for Sierran Mixed-Conifer/Lower Montane Forest

#### A.1 Background and the Importance of Fire

Our definition of healthy forest conditions within the project area draws heavily from the research of North et al. (2009) in the western Sierra Nevada. Their recent report titled *An ecosystem management strategy for Sierran mixed-conifer forests* (North et al. 2009) contains key concepts and silvicultural principles that we feel can be incorporated into the proposed action to achieve the goal of creating a healthy forest conditions within the project area.

Chief among these concepts is the importance of wildfire. North et al (2009) explains that:

Fire plays a pivotal role in reshaping and maintaining mixed-conifer ecosystems. Fire was once very common in most of the western Sierra and has been a primary force shaping the structure, composition, and function of mixed-conifer forests. ... [Most of the fires were of low intensity and returned at frequent intervals.] The main effect of low-intensity fire is its reduction of natural and human-created (i.e., resulting from management activities) fuels, litter, shrub cover, and small trees. These reductions open growing space, provide a flush of soil nutrients, and increase the diversity of plants and invertebrates. By reducing canopy cover, fire also increases habitat and microclimate heterogeneity at site, stand, and landscape levels [North et al. 2009:5-6].

Forest fuels are usually assessed in three general categories: surface, ladder, and canopy bulk density. Fuel treatments often focus on ladder fuels (generally defined to be variably sized understory trees that provide vertical continuity of fuels from the forest floor to the crowns of overstory trees.) Some studies and models, however, suggest a crown fire entering a stand is rarely sustained (i.e., sustained only under extreme weather conditions) if understory fuels are too sparse to generate sufficient radiant and convective heat. [North et al. 2009:3].

By itself, prescribed fire is difficult to apply in some forests owing to fuel accumulations, changes in stand structure, and operational limitations on its use. Mechanical treatments can be effective tools to modify stand structure and influence subsequent fire severity and extent and are often a required first treatment in forests containing excessive fuel loads. [North et al. 2009:6-7]

Prescribed fire is generally implemented very carefully, killing only the smaller size class trees. In some cases, it is ineffective for restoring resilience, at least in the first pass. For example, prescribed fire may not kill many of the larger ladder-fuel or co-dominant true fir trees that have grown in with fire suppression. In many stands, mechanical thinning followed by prescribed fire may be necessary to achieve forest resilience much faster than with prescribed fire alone. [North et al. 2009:7]

Some forests cannot be prescription burned, at least as an initial treatment, because of air quality regulations, increasing wildland home construction, and limited budgets. Yet restoration of these forests still depends on modifying fuels because it reduces wildfire intensity when a fire does occur and can produce stand conditions that simulate some of fire's ecological effects. [North et al. 2009:7]

One measure of resilience is that fire disturbance produces mortality patterns consistent with the dynamics under which the forest evolved. Mixed-conifer resilience might be best ensured by (1) reducing fuels such that if the forest burned, the fire would most likely be a low severity surface and (2) producing a forest structure that keeps insect and pathogen mortality at low, chronic levels. Where intermediate-size trees are abundant, they may present a fire and fuels risk, especially when live crowns are continuous to the forest floor (North et al. 2009:v).

Intermediate-size trees can contribute to overly dense stands that are moisture stressed and at risk of bark beetle attacks:

In addition to ladder and surface fuels, managers have been concerned with reducing canopy bulk density in DFPZs and the defense zone of wildland urban interfaces (WUI). Overstory trees are commonly removed, and residual trees are evenly spaced to increase crown separation. The efficacy of canopy bulk density reduction in modifying fire behavior is largely a function of weather conditions. Research has suggested there is often limited reduction in crown fire potential through overstory thinning alone, without also treating surface fuels. [North et al. 2009:4]

A concern with the widespread use of canopy bulk density thinning in defensible fuel profile and defense zones is the ecological effects of the regular tree spacing. In the Sierra Nevada, historical data, narratives, and reconstruction studies indicate mixed conifer forests were highly clustered with groups of trees separated by sparsely treed or open gap conditions. This clustering can be important for regenerating shade-intolerant pine, increasing plant diversity and shrub cover moderating surface and canopy microclimate conditions within the tree cluster and providing a variety of microhabitat conditions for birds and small mammals. [North et al. 2009:4]

## **A.2 Importance of Stand Heterogeneity and Density**

Recent studies have shown that spatial heterogeneity was a key feature in forest resiliency and characteristic of frequent fire's effect on mixed-conifer forests. Fuel treatments that produce uniform tree spacing reduce this ecologically important spatial heterogeneity. North et al. (2009) explains that:

Horizontal heterogeneity, however, used to be relatively common in Sierran mixed-conifer forests [due to logging/reforestation practices]. All of the Sierran reconstruction studies suggest mixed-conifer forests, under an active fire regime, had a naturally clumped distribution containing a variety of size and age classes. [North et al. 2009:15]

At the stand level, vertical heterogeneity can still be provided by separating groups of trees by their canopy strata. For example, a group of intermediate-size trees that could serve as ladder fuels might be thinned or removed if they are growing under large overstory trees. The same size trees in a discrete group, however, might be lightly thinned to accelerate residual tree growth or left alone if the group does not present a ladder fuel hazard for large, overstory trees. [North et al. 2009:15-16]

To increase horizontal heterogeneity, we suggest using microtopography as a template. Wetter areas, such as seeps, concave pockets, and cold air drainages, may have burned less frequently or at lower intensity. Limiting thinning to ladder fuels in these areas is suggested because with their potentially higher productivity and cooler microclimate, they can support greater stem densities, higher canopy cover, and reduced fire effects. A concern with current uniform fuel reduction is that these microsite habitats associated with sensitive species would be eliminated. Surface fuel loads at these microsites should still be reduced to lower their vulnerability to high-intensity fire.

In contrast, upslope areas, where soils may be shallower and drier and where fire can burn with greater intensity, historically had lower stem densities and canopy cover. On these sites, thinning might reduce the density of small or, where appropriate, intermediate trees and ladder and surface fuels toward a more open condition. In some circumstances this thinning may reduce water stress, accelerating the development of large residual trees. Within a stand, varying stem density according to potential fire intensity effects on stand structure would create horizontal heterogeneity. [North et al. 2009:16-18]

Historical forests can provide a better understanding of the ecological processes that have shaped mixed-conifer forest and the habitat conditions to which wildlife have adapted. All reconstruction studies, old forest survey data sets, and 19th-century photographs suggest that frequently burned forests had very low tree densities. ... Studies reconstructing pre-European conditions all indicate that forests had a greater percentage of pine, a clustered pattern with highly variable canopy cover, and a high percentage of the growing stock in more fire resistant, large-diameter classes. ... What these reconstructions do provide is inference about the cumulative process effects of fire, insects, pathogens, wind, and forest dynamics on stand structure and composition, producing forests resilient to most disturbances, including wildfire. ... [Modeling] found a low-density forest dominated by large pines was most resilient to wildfire, sequestered the most carbon, and had the lowest carbon dioxide (CO<sub>2</sub>) emissions and thus contributed less to global warming. An analysis of carbon emissions and storage from different fuel treatments, found

understory thinning followed by prescribed fire produced the greatest reduction in potential wildfire severity without severely reducing carbon stocks. [North et al. 2009:9].

In fire-suppressed forests, shrubs are often shaded out, reducing their size, abundance, and fruit and seed production in low-light forest understories. Anecdotal narratives, a forest reconstruction, and a few early plot maps suggest shrub cover in active-fire conditions might have been much higher than in current forests, mostly owing to large shrub patches that occupied some of the gaps between tree clusters. [North et al. 2009:12]

Studies in the Sierra Nevada and Klamath Mountains found that mixed-conifer structure and composition varied by fire patterns that were controlled by landscape physiographic features. Fire intensity, and consequently a more open forest condition, increased with higher slope positions and more southwesterly aspects. ... Cumulatively these studies suggest that forest landscapes varied depending on what structural conditions would be produced by topography's influence on fire frequency and intensity. [North et al. 2009:19]

### **A.3 Silvicultural Strategy**

North et al. (2009) asserts that a new silviculture for Sierran mixed-conifer forest that

balances ecological restoration and wildlife habitat with fuel reduction can meet multiple forest objectives. By necessity, recent Sierran silviculture has first been focused on reducing fire severity through fuel reduction. For many reasons, including maintaining or restoring resilient forests, public safety, and property loss, fuel reduction remains a priority. We suggest that, with some modification, wildlife and ecological objectives can also be met. [North et al. 2009:22]

Diameter-limit prescriptions applied equally to all species will not remedy the significant deficit of hardwoods and pines in current forests. Prescriptions that differ by species can retain hardwoods, which are important for wildlife, and favor pines that can increase the forest's fire resilience. Given their current scarcity in many locations, there are few instances that warrant cutting either hardwoods or pines in mixed-conifer forests. [Id.]

In general, leaving pine and thinning white fir, Douglas-fir, and incense-cedar will help restore historical species composition and increase the forest's fire resilience. There are times, however, where removing pine can reduce fuels, decrease the risk of drought or insect induced mortality, and accelerate the growth of the residual pine trees.

We suggest creating landscape heterogeneity in the Sierra Nevada by mimicking the forest conditions that would be created by the fire behavior and return interval associated with differences in slope position, aspect, and slope steepness. In general, stem density and canopy cover would be highest in drainages and riparian areas, and then decrease over the midslope and become lowest near and on ridgetops. Stem density and canopy cover in all three areas would be higher on northeast aspects compared to southwest. Stand density would also vary with slope becoming more open as slopes steepen. [North et al. 2009:20]

Locating gaps in areas with thinner soils or lower productivity may be logical to foster lower canopy cover since these areas historically supported lower tree densities and fuel loads. In the forest matrix between tree groups and gaps, frequent-fire forests generally consisted of widely spaced, large trees, most of which were pines. The relative proportion of these conditions (i.e., low density, dispersed large trees, and large and small gaps and tree groups) and their composition could be varied depending on existing forest conditions and topographic position.

The proposed silvicultural approach is a multiaged-stand strategy driven by the need for wildlife habitat, fire-resistant stand structures, and restoration of stand and landscape patterns similar to active-fire conditions in mixed-conifer forests. Although we use the term multiage, we are most interested in size and structure, and their associated ecological attributes. Multiaged stands are a flexible means of including variable stand structures with two or more age classes and integrating existing stand structures into silvicultural prescriptions. [North et al. 2009:22]

Clusters of intermediate to large trees (i.e., >20 inches diameter at breast height [DBH]) are sometimes marked for thinning with the belief that they are overstocked and thinning would reduce moisture stress. Some evidence, however, suggests these groups of large trees may not be moisture stressed by within-group competition.... Reconstructions of Sierran forests with active fire regimes have consistently found large trees in groups. These groups, however, can be at risk if intermediate and small trees grow within the large tree groups. Thinning these small and intermediate trees will reduce fire laddering. [North et al. 2009:23-24]

What is considered a ladder fuel differs from stand to stand, but typically these are trees in the 10- to 16-inch DBH classes. Trees larger than this may be thinned, for additional fuel reduction by reducing canopy bulk density in strategic locations. Removal of some of the intermediate sized trees would also have the economic benefit of providing revenue to help offset the costs of the fuels reduction and could fund additional projects (North et al. 2009:24).

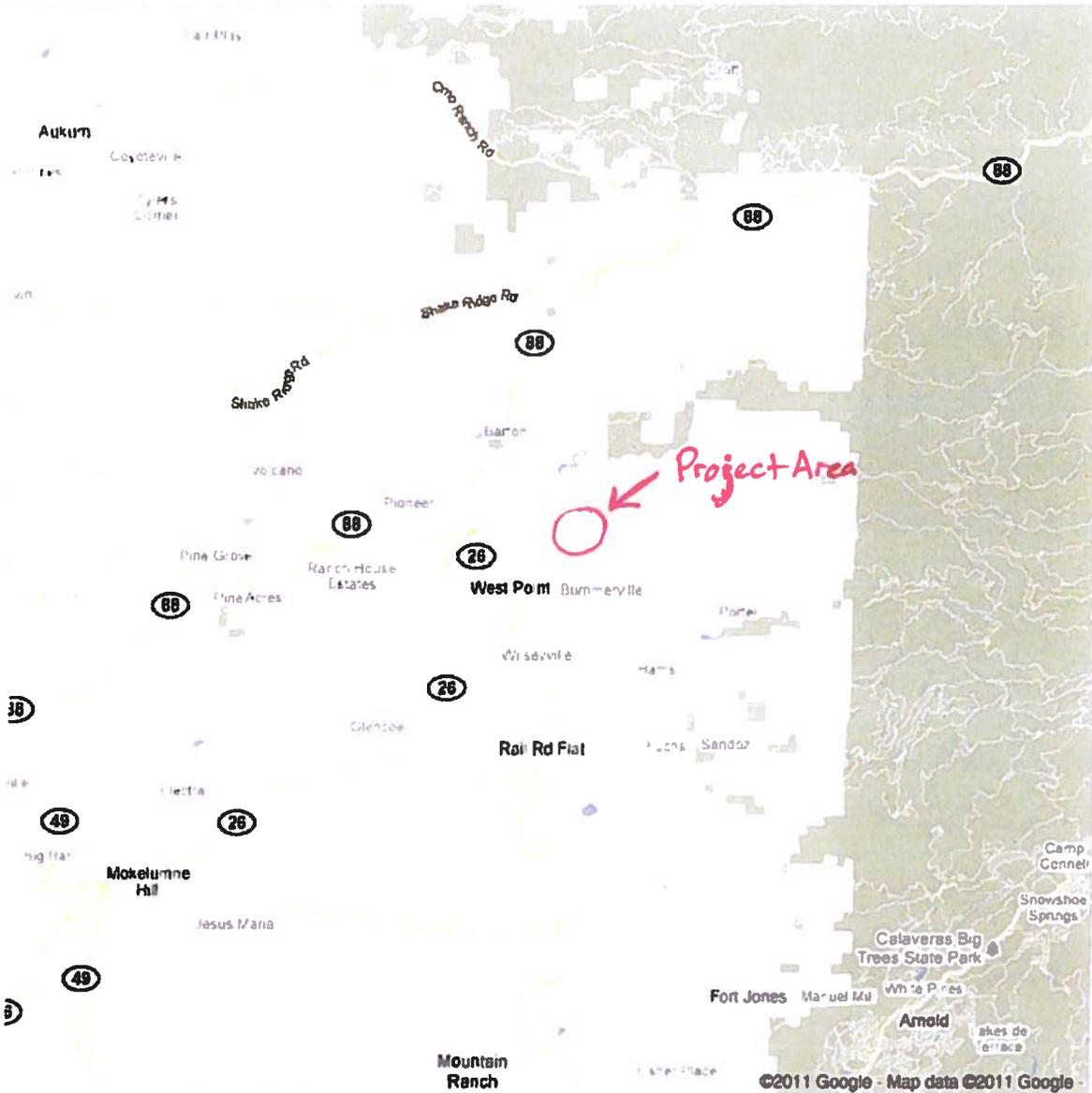
Thinned intermediate-size trees should only be fire-sensitive, shade-tolerant species such as white fir, Douglas-fir, and incense-cedar. In mixed-conifer forest, attempt to keep intermediate-size pines and hardwoods because of their relative scarcity and importance to wildlife and fire resilience. . . Some intermediate-size trees can still function as ladder fuel, particularly those that were initially grown in more open conditions. These trees can have live and dead limbs that extend down close to the forest floor providing a continuous fuel ladder. . . [In] middle to upper slope topographic position . . . some thinning of intermediate-size trees may help accelerate the development of large "leave" trees. We suggest, however, that these criteria not be applied to riparian areas, moist microsites often associated with deeper soils, concave topography, or drainage bottoms because these areas may have supported higher tree densities and probably greater numbers of intermediate size trees. [North et al. 2009:24-25]

**Appendix B**  
**Project area maps**

**Appendix B**  
**Project area maps**



Notes Project location map for the Lily Gap biomass demonstration project

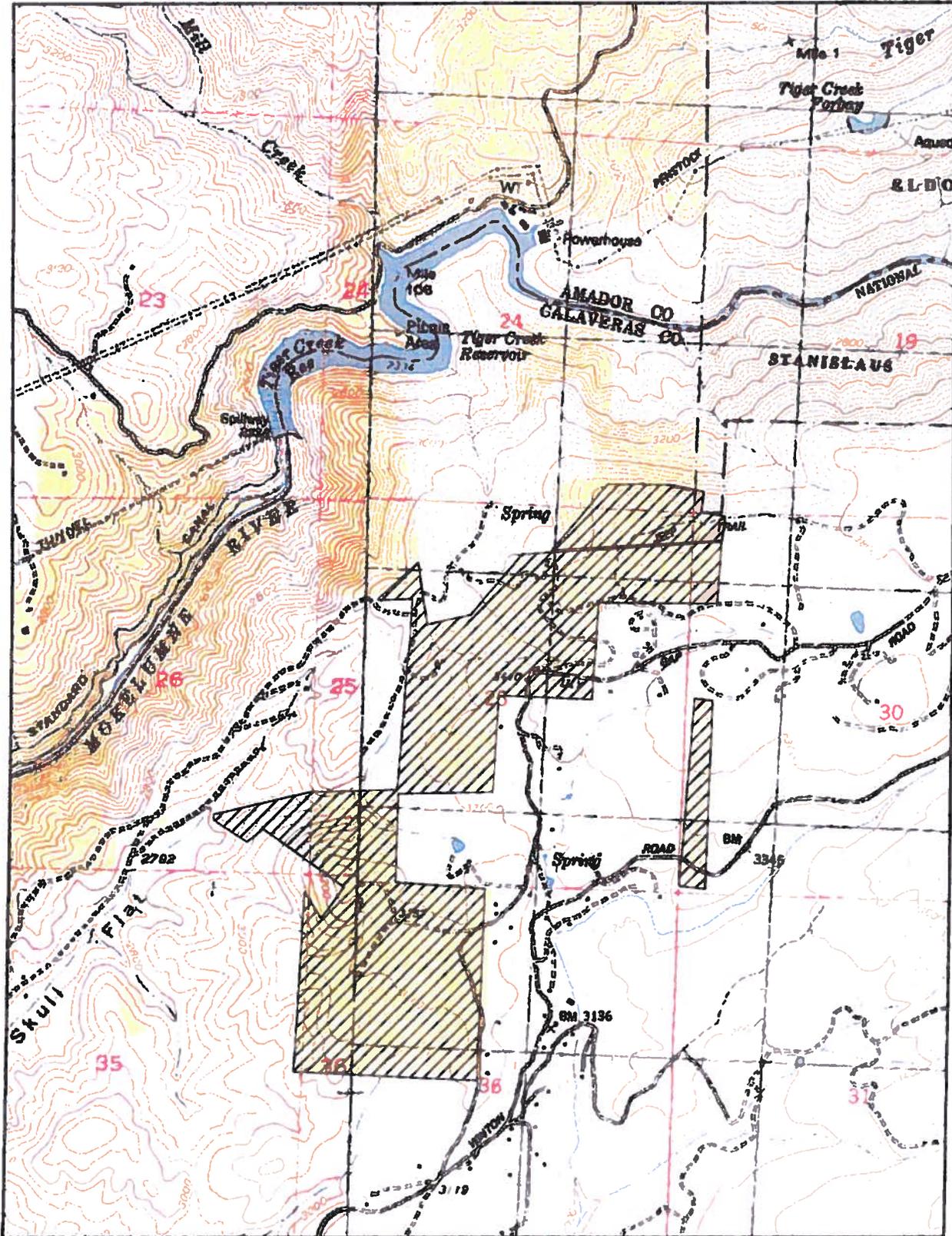


R13E

R14E

T7N

T7N



# Lilly Gap Biomass Demonstration Project



Harvest Area, 450 acres



U.S. Department of the Interior  
**BUREAU OF LAND MANAGEMENT**  
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 El Dorado Hills, California  
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 Date Prepared: 3/18/2011  
 Project: LillyGapBiomassEA 8x10.mxd

# Performance Measures

# Sierra Nevada Conservancy Performance Measures Description

August 5, 2008

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## Acres of Land Improved or Restored

### Purpose

The purpose of this Performance Measure (PM) is to track efforts to improve natural resource conditions, such as site productivity and wildlife habitat, through site improvement or restoration activities and reduce the risk of natural disasters, such as catastrophic wildfire, flood, avalanche, etc. Wherever possible, acres should be categorized by importance or priority rating, such as acres of critical habitat, or acres in moderate, high and very high fire hazard areas as delineated by CAL FIRE's Fire Hazard Severity Zoning Map.

### Likely Project Categories

This PM would likely be applicable for projects in the following category:

- Site improvement/restoration projects.

### Variations

This PM is further classified by the following two variations:

- Site Importance or Priority Rating
- Restoration/Improvement Project Purpose
  - ✓ Natural Disaster Risk Reduction – Fire
  - ✓ Natural Disaster Risk Reduction – Other
  - ✓ Natural Resource Protection, e.g., invasive species removal, erosion control, vegetation planting, trail/bridge replacement, forest health, etc.
  - ✓ Water Quality
  - ✓ Habitat, both aquatic or terrestrial
  - ✓ Resource Management, e.g. increasing site productivity, vegetation management, forest management, etc.
  - ✓ Recreation

### Guidance on Applying this PM to Your Project

This is a recommended approach to collecting data and reporting on this PM. Grantees are asked to further evaluate how these steps may best be applied to their specific projects and to discuss with SNC any steps or considerations that may be unique.

➤ Data collection:

- a. Document total acres treated.
- b. Identify land restoration or improvement purpose(s) for the acres treated, using the following list (check all that apply and provide number of acres for each purpose or topic area):
  - i. Natural Disaster Risk Reduction – Fire
  - ii. Natural Disaster Risk Reduction – Other
  - iii. Natural Resource Protection, e.g., invasive species removal, erosion control, vegetation planting, trail/bridge replacement, forest health, etc.
  - iv. Water Quality
  - v. Habitat, both aquatic or terrestrial
  - vi. Resource Management, e.g. increasing site productivity, vegetation management, forest management, etc.
  - vii. Recreation
- c. Where appropriate, identify the federal, state, or local government site importance or priority rating for the treated acres and the source of the rating
  - i. For fuel treatments, document the acres treated by risk category (moderate, high, very high) based on Cal Fire severity rating (<http://frap.cdf.ca.gov/data/frapgismaps/download.asp>).
  - ii. For habitat restoration, identify, if applicable, acres that contain rare natural communities (i.e., those communities that are of highly limited distribution); priority acres based on the California Wildlife Habitat Relationships System (<http://www.dfg.ca.gov/biogeodata/cwhr/morecwhr.asp>); or habitat for threatened or endangered species as listed by the California Department of Fish and Game or U.S. Fish and Wildlife Service).
  - iii. Consider other applicable importance or priority ratings as determined by federal, state, or local government resource management or planning agencies.

Sierra Nevada Conservancy  
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- **Reporting:** Report total number of acres improved or restored by importance/priority rating and treatment purpose. Note: one acre may be counted more than once if improvement/restoration of that acre meets more than one purpose. Suggested reporting format as follows:

Acres treated	Site importance or priority rating	Source of prioritization or importance rating	Purpose (from list provided above)

**Other**

The level of effort required to measure, analyze, and report acres of land improved or restored should be minimal, less than 40 hours. Accurate measurement and reporting requires careful record-keeping, but no special skills or knowledge are required.