

**Initial Study/Mitigated Negative Declaration  
for the  
Shaded Fuel Break Maintenance Project  
Madera and Mariposa Counties, California  
State Clearinghouse Number 2014071071**



Prepared by:

The California Department of Forestry and Fire Protection  
The Lead Agency Pursuant to Section 21082.1 of the  
California Environmental Quality Act

CAL FIRE's Resource Management Program  
P.O. Box 944246  
Sacramento, CA 94244-2460  
(916) 653-4995

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# MITIGATED NEGATIVE DECLARATION

## Introduction and Regulatory Context

### Stage of CEQA Document Development

- Administrative Draft.** This California Environmental Quality Act (CEQA) document is in preparation by California Department of Forestry and Fire Protection (CAL FIRE) staff.
- Public Document.** This completed CEQA document has been filed by CAL FIRE at the State Clearinghouse on July 24, 2014, and is being circulated for a 30-day agency and public review period. The public review period ends on August 22, 2014. Instructions for submitting written comments are provided on Pages 5-6 of this document.
- Final CEQA Document.** This Final CEQA document contains the changes made by the Department following consideration of comments received during the public and agency review period. The changes are displayed in strike-out text for deletions and underlined text for insertions. The CEQA administrative record supporting this document is on file, and available for review, at CAL FIRE's Sacramento Headquarters, which is located in the Natural Resources Building, 1416 Ninth Street, Sacramento, California.

### Introduction

This Initial Study/Mitigated Negative Declaration (IS/MND) describes the environmental impact analysis conducted for the proposed project. This document was prepared by CAL FIRE staff utilizing information gathered from a number of sources including research and field review of the proposed project area and consultation with environmental planners and other experts on staff at other public agencies. Pursuant to Section 21082.1 of the CEQA, the Lead Agency, CAL FIRE, has prepared, reviewed, and analyzed the IS/MND and declares that the statements made in this document reflect CAL FIRE's independent judgment as Lead Agency pursuant to CEQA. CAL FIRE further finds that the proposed project, which includes revised activities and mitigation measures designed to minimize environmental impacts, will not result in significant adverse effects on the environment.

### Regulatory Guidance

This IS/MND has been prepared by CAL FIRE to evaluate potential environmental effects, which could result following approval and implementation of the proposed project. This document has been prepared in accordance with current CEQA Statutes (PRC §21000 *et seq.*) and current CEQA Guidelines (14 CCR §15000 *et seq.*).

An Initial Study is prepared by a lead agency to determine if a project may have a significant effect on the environment (14 CCR § 15063(a)), and thus, to determine the appropriate environmental document. In accordance with CEQA Guidelines §15070, a "public agency shall prepare...a proposed negative declaration or mitigated negative declaration...when: (a) The Initial Study shows that there is no substantial evidence...that the project may have a significant impact upon the environment, or (b) The Initial Study

identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions will reduce potentially significant effects to a less-than-significant level.” In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the proposed project will not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report. This IS/MND conforms to these requirements and to the content requirements of CEQA Guidelines Section 15071.

## **Purpose of the Initial Study**

CAL FIRE has primary authority for carrying out the proposed project and is the lead agency under CEQA. The purpose of this IS/MND is to present to the public and reviewing agencies the environmental consequences of implementing the proposed project and describe the adjustments made to the project to avoid significant environmental effects or reduce them to a less-than-significant level. This disclosure document is being made available to the public and reviewing agencies for review and comment. The IS/MND is being circulated for public and agency review and comment for a review period of 30 days as indicated on the *Notice of Intent to Adopt a Mitigated Negative Declaration* (NOI). The 30-day public review period for this project begins on July 24, 2014 and ends on August 22, 2014.

The requirements for providing an NOI are found in CEQA Guidelines §15072. These guidelines require CAL FIRE to notify the general public by utilizing at least one of the following three procedures:

1. Publication in a newspaper of general circulation in the area affected by the proposed project,
2. Posting the NOI on and off site in the area where the project is to be located, or
3. Direct mailing to the owners and occupants of property contiguous to the project.

CAL FIRE has elected to utilize the first two of three notification options. The NOI will be published in the Mariposa Gazette and the Sierra Star. Additionally, the NOI will be posted off site for the entire 30-day public review period at two locations in the counties where the project is located. These two locations are:

1. At the building marked office within the CAL FIRE Ahwahnee Fire Station where it is prominently in view by any person visiting the station- 43033 Hwy 49 S, Ahwahnee, CA 93601
2. At the public greeting counter at CALFIRE Madera-Mariposa-Merced Headquarters-5366 Hwy 49 N Mariposa CA 95338.

A complete copy of this CEQA document was made available for review by any member of the public requesting to see it at the CAL FIRE Ahwahnee Fire Station and the CALFIRE Madera-Mariposa-Merced Headquarters listed above. An electronic version of the NOI and the CEQA document were made available for review for the entire 30-day review period through their posting on CAL FIRE’s Internet Web Pages at: [http://www.fire.ca.gov/resource\\_mgt/resource\\_mgt\\_EPRP\\_PublicNotice.php](http://www.fire.ca.gov/resource_mgt/resource_mgt_EPRP_PublicNotice.php)

If submitted prior to the close of public comment, views and comments are welcomed from reviewing agencies or any member of the public on how the proposed project may affect the environment. Written comments must be postmarked or submitted on or prior to the date the public review period will close (as indicated on the NOI) for CAL FIRE’s consideration. Written comments may also be submitted via email (using the email address that appears below) but comments sent via email must also be received on or prior to the close of the 30-day public comment period. Comments should be addressed to:

Christopher E. Browder, Deputy Chief, Environmental Protection  
California Department of Forestry and Fire Protection  
Resource Management – Environmental Protection Program  
P.O. Box 944246  
Sacramento, CA 94244-2460  
Phone: (916) 653-4995  
Email: [sacramentopubliccomment@fire.ca.gov](mailto:sacramentopubliccomment@fire.ca.gov)

After comments are received from the public and reviewing agencies, CAL FIRE will consider those comments and may (1) adopt the Mitigated Negative Declaration and approve the proposed project; (2) undertake additional environmental studies; or (3) abandon the project.

## **Project Description and Environmental Setting**

### **Project Location**

The proposed project is located in the eastern CAL FIRE State Responsibility Area (SRA) in the Madera-Mariposa-Merced Unit (MMU). There are four (4) shaded fuel break project sites: Stumpfield Road, Lush Meadows, Road 620 and Quartz Mountain. The Stumpfield Road and Lush Meadows shaded fuel breaks are located in Mariposa County. The Road 620 and Quartz Mountain shaded fuel breaks are located in Madera County. Total project area is 678 acres.

The Stumpfield Road Shaded Fuel Break is located along Stumpfield Mountain Road from the junction of Highway 49 to the junction of Watt Road, in Section 32, Township 5 South, Range 20 East, and portions of Sections 4, 5 and 9 Township 6 South, Range 20 East, Mt. Diablo Base Meridian (MDBM). The approximate acreage of the Stumpfield Road Shaded Fuel Break is 88 acres.

The Lush Meadows Shaded Fuel Break is located in the Lush Meadows Subdivision of Mariposa County, starting at the intersection of Whispering Pines and Darrah Road. It continues along a dominant ridge that parallels Tip Top Road and ends near Wass Road, in portions of Sections 13 and 24. Township 5 South, Range 19 East and in Portions of Sections 19, 30, and 31, Township 5 South, Range 20 East, MDBM. The approximate acreage of the Lush Meadows Shaded Fuel Break is 180 acres.

The Road 620 Shaded Fuel Break is a complex of Spatially Placed Area Fuel Treatments (SPLATs) starting in Mariposa County along Worman Road and Highway 49. It ends in the vicinity of Buckeye Gap Road and Road 628 in portions of Sections 7, 12, 19, 20, 21, 24, 28, 29, 30, 31 and 34, Township 16 South, Range 21 East, MDBM in Madera County. The approximate acreage of the Road 620 Shaded Fuel Break is 60 acres.

The Quartz Mountain Shaded Fuel Break is located adjacent to the Indian Lakes Subdivision and is in the town of Coarsegold. It starts at the intersection of Highway 41 and Road 420, follows the east side of Highway 41 south to a transmission line, then follows the transmission line west to a second crossing of Highway 41. It continues south along the east side of the highway to a point near the southwest of corner of Section 34, then it follows a ridgeline south and west to a transmission line, where it follows the transmission line west and south around Section 16. It then turns east to approximately the southeast corner of Section 16, then continues south along the section line to Flying O Road. From here the project follows

a ridge west to Quartz Mountain, where it turns south and ends at the south section line of Section 33. The project is approximately 11.5 miles in length, and it reaches into portions of Sections 26, 27 and 34 Township 8 South, Range 21 East, MDBM and Sections 3, 9, 10, 15, 22, 27, 33 and 34, Township 7 South, Range 21 East, MDBM. The approximate acreage of the Quartz Mountain Shaded Fuel Break is 350 acres.

## **Background and Need for the Project**

Through the California Public Resources Code, the California State Legislature has declared the CAL FIRE to have fire prevention and vegetation management expertise. The legislature has also mandated CAL FIRE to implement hazardous fuel treatment and vegetation management projects as a means of fire prevention. In addition the legislature has declared wildland fire prevention and vegetation management provides significant public resource benefits that include: decreasing wildland fire hazards, increasing rangeland production, improving watershed yields and quality, and improving wildlife habitat.

Within the last 60 years, MMU has had several catastrophic fires including: the Nelson Cove Fire (approximately 17,000 acres) in 1956, the Harlow Fire (approximately 41,000 acres) in 1961, the Stumpfield Mountain Fire (approximately 3,000 acres) in 1996, and the Telegraph Fire (approximately 32,000 acres) in 2008. In order to mitigate this threat, the Eastern Madera County Fire Safe Council, the Mariposa Fire Safe Council, and CAL FIRE MMU have constructed numerous shaded fuel breaks including: the Stumpfield Road Shaded Fuel Break, the Road 620 Shaded Fuel Break, the Lush Meadows Shaded Fuel Break and the Quartz Mountain Shaded Fuel Break, utilizing state and federal grants.

Shaded fuel breaks (also known as, fuel modification zones, or defensible fuel profiles zones) are carefully planned vegetation management projects where small trees and brush are removed. Larger trees are retained and often pruned to remove the lower limbs that contribute to the ladder fuels. These fuel breaks modify fire behavior by reducing ladder fuels, which reduces flame height and length and fire intensity; when flame heights and lengths and intensity are reduced fire suppression efforts are facilitated, and fire fighter safety is enhanced. Shaded fuel breaks are usually constructed along ridges or roads where firefighting efforts are concentrated.

These shaded fuel breaks were constructed in the last decade and are in need of periodic maintenance to remain effective. This project proposes to maintain these shaded fuel breaks. Construction of a shaded fuel break typically costs between \$600-\$1,000 per acre, not including the environmental assessment and the project administration costs. Periodic Maintenance (including herbicide treatment) will extend the useful life of the shaded fuel breaks. It is estimated that the useful life of the shaded fuel breaks can be extended indefinitely. The fuel break maintenance treatments described in this document encourage growth and development of forbs, grasses, and non-sprouting larger woody plants (mature trees) such as conifers. Mature trees are fire resistant. Reconstruction of shaded fuel breaks using mastication and hand cutting techniques requires reentry every 5-8 years. The cost of periodic maintenance of shaded fuel is estimated to be \$200-\$800 per acre.

## **Project Objectives**

The objective of this project and mitigated negative declaration is to maintain the following shaded fuel breaks: the Stumpfield Shaded Fuel Break, the Lush Meadows Shaded Fuel Break, the Road 620 Shaded Fuel Break and the Quartz Mountain Shaded Fuel Break, using herbicide and hand clearing in order to

mitigate the effects of catastrophic fire to watershed and infrastructure. These fuel breaks were constructed within the past five years primarily using mastication equipment. Sprouting and germinating brush are rapidly growing in these fuel breaks. The effectiveness of these fuel breaks is being reduced.

## **Project Start Date**

The target date to begin this project will be after approval of this document, and in accordance with herbicide labeling.

## **Project Description**

This project proposes maintenance to existing shaded fuel breaks with herbicide and hand clearing in order to modify fire behavior, allow successful fire suppression and control noxious weeds. Fuel break maintenance would include: targeted foliar herbicide application of sprouting brush, tree species and noxious weeds; hand clearing of brush; and removal of dead, dying and hazardous trees. It is expected these fuel breaks will be maintained every 3 to 5 years.

Foliar herbicide application would include hand spraying and off road rubber-tired mechanical application. The off road rubber-tire mechanical applicator would be restricted to a Quad all-terrain vehicle (ATV). The use of an ATV would be restricted to transport of mixed herbicide, target spraying of sprouting brush and trees, brush seedlings and noxious weeds. Examples of brush species that are to be treated with herbicide include *Ceanothus sp.*, interior live oak (*Quercus wislizenii*), scrub oak (*Quercus dumosa*), Toyon (*Heteromeles arbutifolia*), Manzanita (*Arctostaphylos sp.*), and poison oak (*Toxicodendron diversilbum*). These shrub and tree species are generally not killed when they are cut down; they also sprout new growth from the stump or root crown or produce large numbers of seedlings from seed stored in the soil for years. Examples of noxious weeds to be treated include yellow star thistle (*Centaurea solstitialis*), bull thistle (*Cirsium vulgare*), Italian thistle (*Carduus pycnocephalus*) and spotted knapweed (*Centaurea stoebe*). The project proposes to use water soluble herbicides with non-ionic surfactant. It is estimated that 20-30% of the project surface area will need to be treated with herbicides or 136 to 203 acres. Herbicides that have been classified by the Environmental Protection Agency as practically nontoxic to mammals, insects, fish and invertebrates and that bind tightly to organic matter and clay particles will be used. Use of these types of herbicides will result in no impact or a less than significant impact to biological resources and water quality. Herbicides that bind to organic matter and clay particles restrict herbicide movement to ground water and watercourses.

The type of herbicides proposed for use include: triclopyr (trade name Garlon®), aminopyalid (trade name Milestone®), and glyphosate (trade name Round-up®). Herbicides requiring a restricted materials permit will not be used. Prior to using herbicide a recommendation from a Pest Control Advisor (PCA) will be completed to comply with the California Code of Regulation pertaining to pesticide use (Sections 6000 thru 6960). Additionally, herbicide application will be supervised by licensed pest control applicator and used in accordance with the herbicide label.

The project will maintain the dominant vegetation structure. Large trees will be retained. Trees greater than 10 inches in diameter at breast height will not be cut or treated with herbicide and grass and forbs that are not designated noxious weeds will not be treated with herbicide. There will be nearly 100% contiguous vegetative ground cover at the project site following completion of the treatment.

Hand clearing would include cutting woody vegetation using hand tools and chainsaws and either chipping or pile burning the vegetation debris. Chipping would be restricted to the roadside. Hand clearing of vegetation would be limited to trees less than 10 inches in diameter at breast height, dead trees, brush and downed woody material. Oak and pine seedlings that are spaced 10 to 20 feet from other trees will be retained. Overall supervision of the project would be conducted by a Registered Professional Forester (RPF). The application and use of pesticides will comply with all laws and regulations.

## **Environmental Setting of the Project Region**

The environmental setting for this project includes the eastern SRA of MMU in Madera and Mariposa Counties. The fuel breaks follow predominant ridgelines and roads. These fuel breaks have been identified in MMU's Strategic Fire Plan and are tactically important. Major vegetation types as defined by the California Wildlife Habitat Relations vegetation types include: Mixed Chaparral (MCH), Montane Chaparral (MCP), Montane Hardwood Conifer (MHC), Montane Hardwood (MHW), Blue Oak Woodland (BOW) and Blue Oak Foothill (BOP). Tree species in the project sites include: grey pine (*Pinus sabinana*), ponderosa pine (*Pinus ponderosa*), valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizenii*) golden oak (*Quercus chrysolepis*) black oak (*Quercus kelloggi*) and California laurel (*Umbellularia californica*). Shrubs and surface cover include: several ceanothus species (*Ceanothus sp.*), manzanita species (*Arctostaphylos sp.*), poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), yerba santa (*Eriodictyon californicum*), various annual forbs and grasses.

Soils are typical of the southern Central Sierra foothills. Soil types in the project sites include: Ahwahnee and Auberry coarse sandy loam, Ahwahnee and Auberry rocky sandy loam, Holland sandy loam, Musick rocky sandy loam and Stump Springs-Musick rocky sandy loams. Erosion potential ranges from low to high for these soil types. Soils were identified from Soil Surveys of Madera and Mariposa County California (NRCS, formerly Soil Conservation Service, 1974 and 1994). Average annual rainfall for the project area is 33.5 inches.

## **Description of the Local Environment**

These shaded fuel breaks have been constructed to protect the mountain communities and surrounding areas of Mariposa, Lush Meadows, Ahwahnee, Oakhurst, Coarsegold, and the Indian Lake subdivision. The Stumpfield Shaded Fuel Break is located in the Stumpfield Mountain United States Geologic Survey (USGS) Quadrangle. The land in the Stumpfield Shaded Fuel break is under private ownership. To the east of the project is an isolated United States Forest Service parcel. A Native American allotment is near the south boundary. The lands that adjoin the project are rural and have similar natural and physical characteristics. Surrounding land uses include home sites, livestock grazing and dispersed recreation. Mariposa County has zoned the area Mountain General and Mountain Home. The average elevation of the Stumpfield Road Shaded Fuel Break is 2,800 feet. This fuel break is located along a roadside at the eastern base of Stumpfield Mountain along a north-south axis. The primary vegetation type present is Montane Hardwood Conifer with an understory of manzanita, poison oak, ceanothus and shrub oak.

The Lush Meadows Shaded Fuel Break is located in the Stumpfield Mountain and Buckingham Mountain USGS Quadrangles. The land in the Lush Meadows Shaded Fuel break is under private ownership. The

project is adjacent to or runs through a developed sub-division, private home ranchettes (5 acre minimum lot size) or agricultural grazing land. Mariposa County has zoned the area Mountain Home and Rural Residential. The average elevation of the Lush Meadows Shaded Fuel Break is 3,000 feet. This fuel break is located along series of north-south axis ridges. The primary vegetation type present is Montane Hardwood Conifer with an understory of manzanita, poison oak, ceanothus and shrub oak.

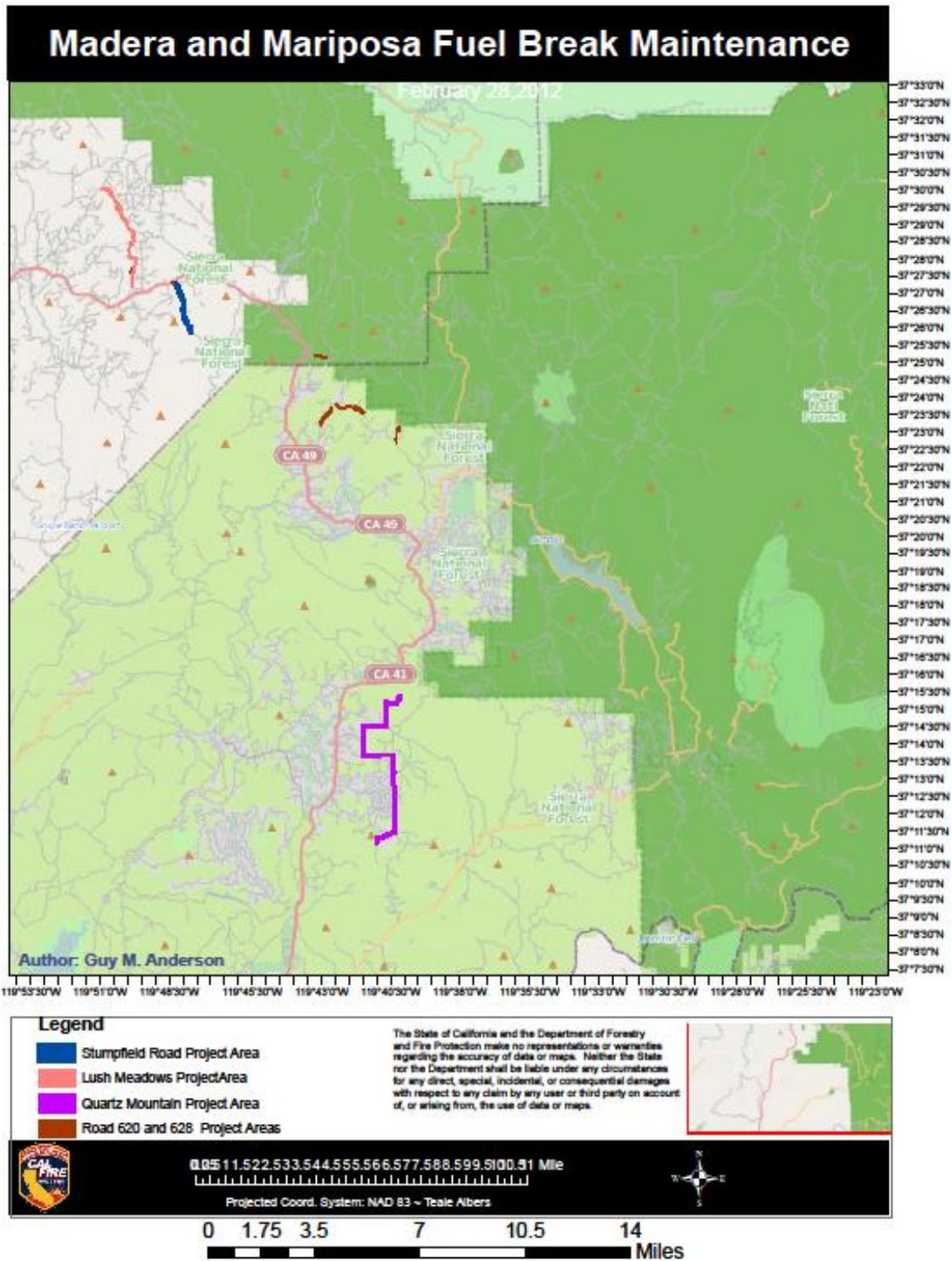
The Road 620 Shaded Fuel Break is located in the Ahwahnee and Fish Camp USGS Quadrangles. The project area is located in residential homes with a 5 acre minimum lot size, private ranchettes, or agricultural grazing land. Madera County has zoned the area Rural Estate Residential and Agricultural Residential. The average elevation of the Road 620 Shaded Fuel Break is 3,200 feet. Topography is best described as rolling with slopes up to 50%. The SPLATs of this fuel break are in crescent pattern with the ends along the north-south axis and the middle along the east-west axis. The primary vegetation type present is Montane Hardwood Conifer with an understory of manzanita, poison oak, ceanothus and shrub oak.

The Quartz Mountain Shaded Fuel Break is located in the Ahwahnee and O'Neal's USGS Quadrangles. The project area is located in undeveloped land adjacent to subdivided land used for single family ranchettes-style dwellings. Madera County has zoned the area Residential Medium Single, Rural Residential 2 acre minimum, Light Industrial, and Agricultural Rural Exclusive 40 acre minimum. The average elevation of the Quartz Mountain Shaded Fuel Break is 2,200 feet. This fuel break is located along rolling and flat topography in a primarily north-south axis. The primary vegetation cover present is mixed chaparral and Blue Oak Woodland.

## **Current Land Use and Previous Impacts**

The predominant land use in all treatment areas is single family rural residences and livestock grazing. There is some "checker boarding" of public lands adjacent to the project sites. Fuel levels in the general area are high. Minimal vegetation management has occurred in the form of grazing, power line right of way clearing and defensible space clearing around structures per Public Resource Code 4291. Previous and ongoing impacts include catastrophic fire and land development.

Figure 1. Project Vicinity Map



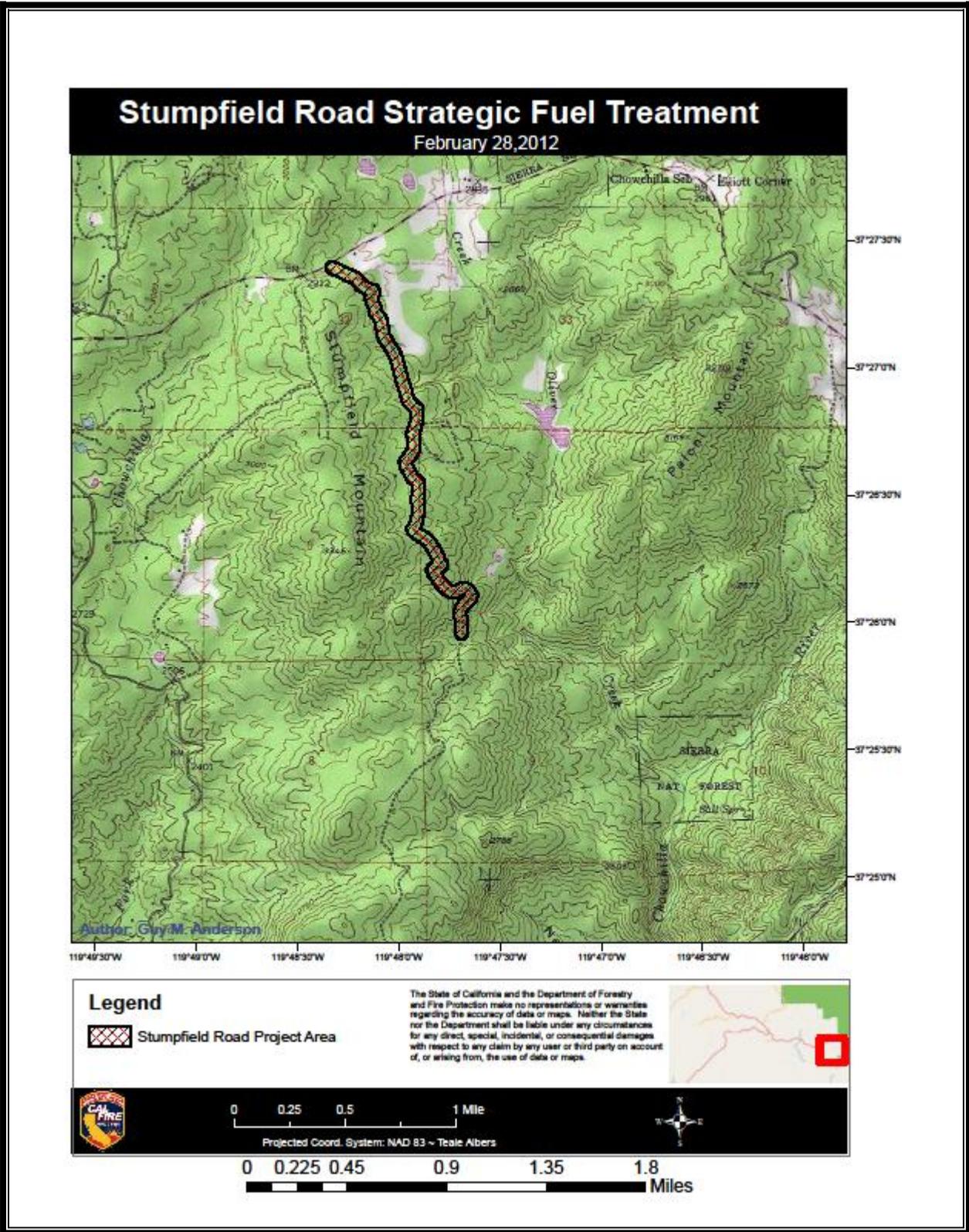
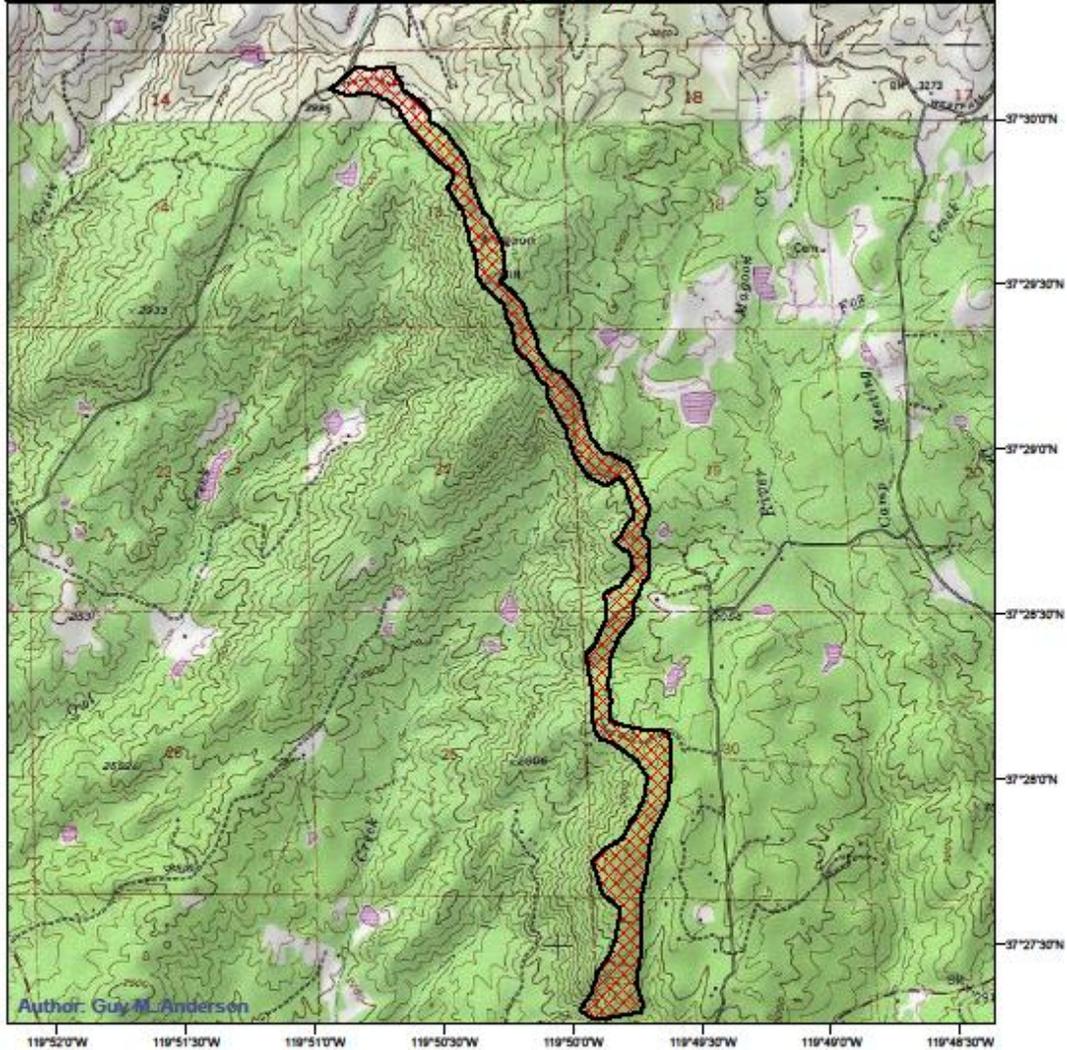


Figure 2. Project Location Map #1 of 4

# Lush Meadow Strategic Fuel Treatment

February 28, 2012



## Legend

 Lush Meadows Project Area

The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.



0 0.25 0.5 1 Mile

Projected Coord. System: NAD 83 - Teale Albers

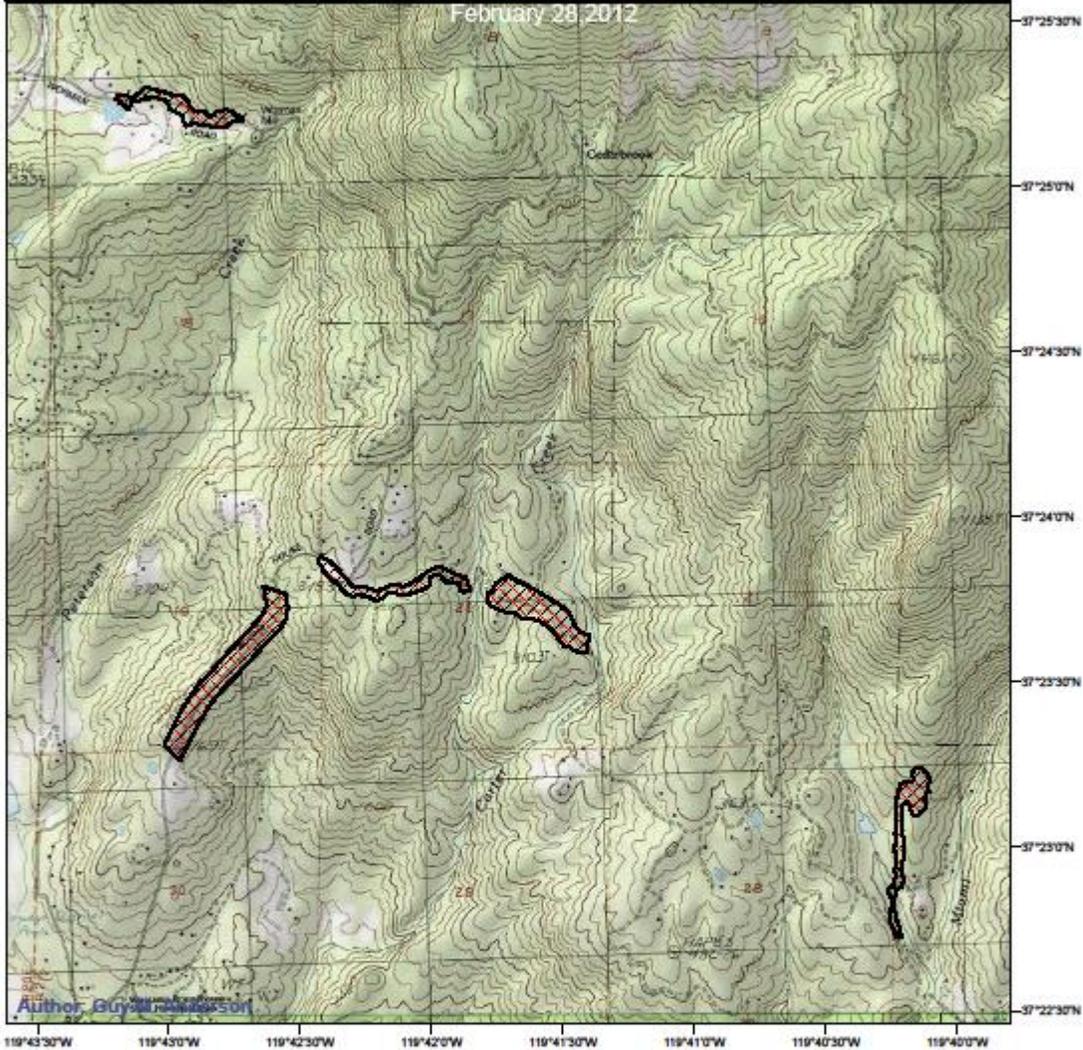
0 0.225 0.45 0.9 1.35 1.8 Miles



Figure 3. Project Location Map #2 of 4

# Road 620 and Road 628 Strategic Fuel Treatment

February 28, 2012



## Legend

 Road 620 and 628 Project Areas

The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.



0 0.25 0.5 1 Mile

Projected Coord. System: NAD 83 - Teale Albers

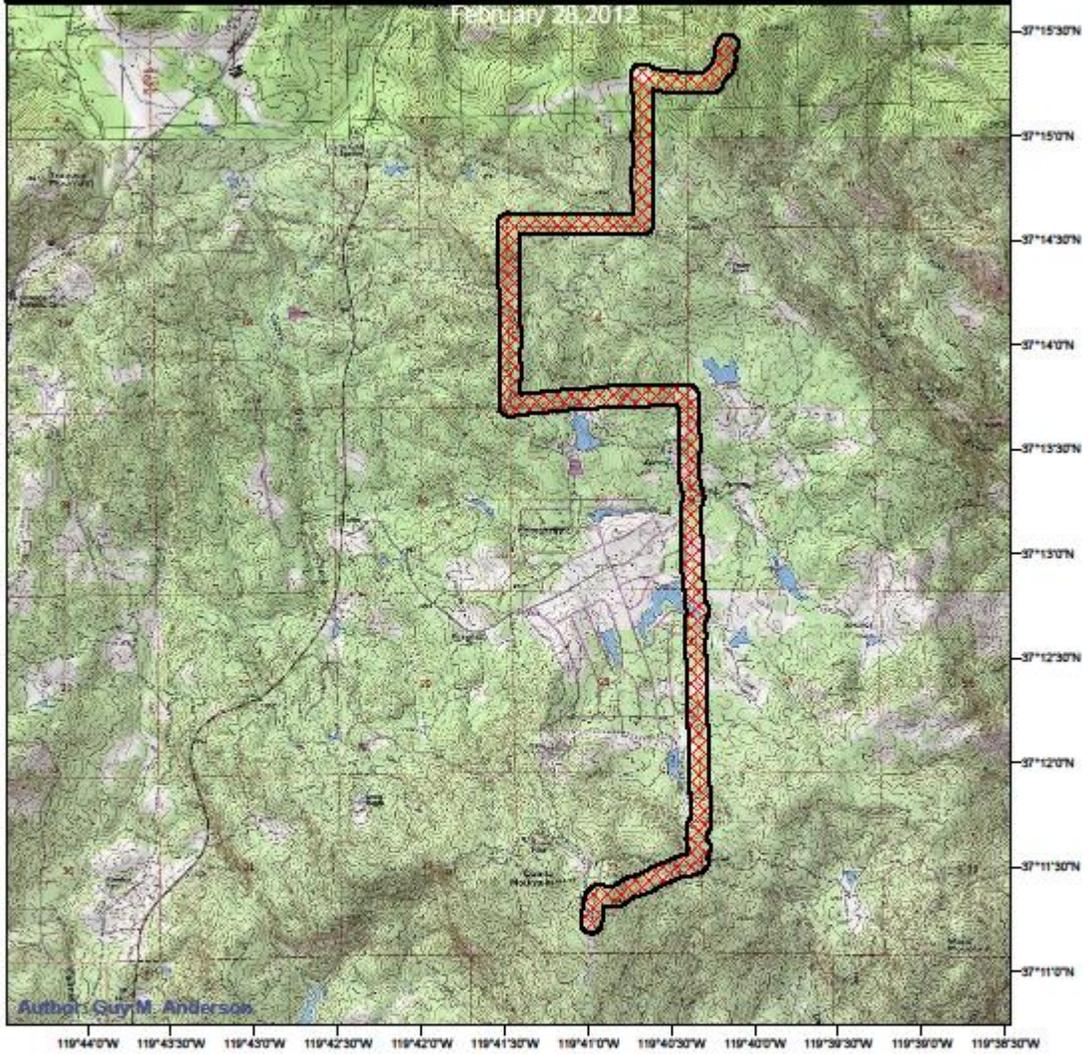


0 0.225 0.45 0.9 1.35 1.8 Miles

Figure 4. Project Location Map #3 of 4

# Quartz Mountain Stratgic Fuel Treatment

February 28, 2013



## Legend

 Quartz Mountain Project Area

The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.



0 0.25 0.5 1 1.5 2 Mile

Projected Coord. System: NAD 83 ~ Teale Albers



0 0.35 0.7 1.4 2.1 2.8 Miles

Figure 5. Project Location Map #4 of 4



Picture of Recently Masticated Shaded Fuel in the Lush Meadows Project Site



Picture of a Portion of the Stumpfield Shaded Fuel Break Completed in April 2011 (note sprouting and germinating brush)



Picture of a Portion of the Stumpfield Shaded Fuel Break Completed in April 2011 (note sprouting and germinating brush)

## **Conclusion of the Mitigated Negative Declaration**

### **Environmental Permits**

The proposed project will require environmental permits from local the Air Pollution Control Districts (APCD). CAL FIRE will be required to comply with all applicable State regulations pertaining to pesticide use. **Prior to herbicide application a Pest Control Advisor recommendation will be prepared and all herbicide application will be supervised by a licensed pesticide applicator.**

### **Mitigation Measures**

The following mitigation measures will be implemented by CAL FIRE to avoid or minimize environmental impacts. Implementation of the below mitigation measures will reduce the environmental impacts of the proposed project to a less than significant level.

**Mitigation Measure #1: Prior to fuel break maintenance activities, a stream channel buffer of at least 30 feet (15 feet on each side of channel) will be established. Stream channel buffers shall be established when riparian vegetation is present. Motorized equipment, herbicide spraying and mixing is prohibited within the stream buffer area. The RPF project manager shall determine which stream channels have riparian vegetation and establish buffer zones. (MM1)**

**Mitigation Measure #2: Prior to fuel break maintenance activities, a plant survey shall be conducted for plants listed in the biological analysis that may be impacted by the project. If plants are found within the project area, a minimum 15 foot buffer zone shall be established around plants. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify plants and establish buffer zones. (MM2)**

**Mitigation Measure #3: Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones. (MM3)**

**Mitigation Measure #4: Prior to project activities the most recently completed Confidential Archeological Addendum will be reviewed for recorded Archeological sites, and for all recorded archeological sites, the site boundaries will be flagged, pile burning will be excluded and only hand work will be permitted in these sites. For all Native American plant collection sites herbicide spraying will be excluded.**

**Mitigation Measure #5: No herbicide application during days when the National Weather Service has forecasted a chance (30% or more) of rain, during any rain event, during soil saturation conditions or when there are wind velocity levels of 15 miles per or greater.**

**Mitigation Measure #6 Herbicide use shall comply with all CCRs pertaining to pesticide use, licensing, mixing, storage, handling and reporting.**

**Mitigation Measure #7** Prior to project operations, all personnel associated with the project will receive a safety briefing. The safety briefing will include a discussion concerning proper chemical spill containment and clean-up procedures. All materials considered hazardous will be transported, used and disposed according to federal and state regulations. Herbicide will be applied according to pesticide regulations and label requirements.

**Mitigation Measure #8** Project hours of operation are from 7AM to 5PM.

**Mitigation Measure #9** If an archeological resource is found during project implementation, the MMU Environmental Coordinator and the CAL FIRE Regional Archeologist shall be immediately notified. The Environmental Coordinator or the Archeologist shall identify the boundaries of the archeological resource site. No further project activities shall take place within the boundaries of the archeological site until adequate protection measures have been incorporated into the project. The CAL FIRE Regional Archeologist shall approve these protection measures.

**Mitigation Measure #10** If human remains are found during the project, the MMU Environmental Coordinator, the CAL FIRE Regional Archeologist, the CAL FIRE Prevention Bureau Chief and the Unit Duty Chief shall be immediately notified. No further project activities shall take place until an investigation has been conducted and remains are in custody of the county coroner.

## **Summary of Findings**

This IS/MND has been prepared to assess the project's potential effects on the environment and provide an appraisal of the significance of those effects. Based on this IS/MND, it has been determined that the proposed project will not have any significant effects on the environment after implementation of mitigation measures. This conclusion is supported by the following findings:

1. The proposed project will have no effect related to aesthetics, agriculture and forestry resources, cultural resources, geology and soils, land use and planning, mineral resources, population and housing, public services, recreation, transportation/traffic, utilities and service systems.
2. The proposed project will have a less than significant impact on air quality and greenhouse gas emissions.
3. The proposed project will have a less than significant impact with mitigations incorporated on biological resources, cultural resources, hydrology and water quality, hazardous materials and noise.

The Initial Study/Environmental Checklist included in this document discusses the results of resource-specific environmental impact analyses that were conducted by the Department. This Initial Study revealed that potentially significant environmental effects could result from the proposed project; however, CAL FIRE revised its project plans and has developed mitigation measures that will eliminate the impact or reduce environmental impacts to a less than significant level. CAL FIRE has found, in consideration of the entire record, that there is no substantial evidence that the proposed project as currently revised and mitigated would result in a significant effect upon the environment. The IS/MND is therefore the appropriate document for CEQA compliance.

## INITIAL STUDY/ENVIRONMENTAL CHECKLIST

<b>PROJECT INFORMATION</b>					
1. Project Title:	Shaded Fuel Break Maintenance for Stumpfield, Lush Meadows, Road 620 and Quartz Mountain Shaded Fuel Breaks Project.				
2. Lead Agency Name and Address:	California Department of Forestry and Fire Protection 5366 Highway 49 North Mariposa CA				
3. Contact Person and Phone Number:	Guy Anderson (209) 742-1907				
4. Project Location:	Mariposa and Madera Counties				
5. Project Sponsor's Name and Address:	CAL FIRE is project sponsor and lead agency				
6. General Plan Designation:	Not Applicable				
7. Zoning:	See Description of Local Environment Section				
8. Description of Project: See Pages 8 and 9 of this document					
9. Surrounding Land Uses and Setting:	Refer to page 9 and 10 of this document				
10: Other public agencies whose approval may be required:	See page 19 of this document				
<b>ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:</b>					
<p>The environmental factors checked below are the ones which would potentially be affected by this proposed project and were more rigorously analyzed than the factors which were not checked. The results of this analysis are presented in the detailed Environmental Checklist which follows.</p>					
<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry Resources	<input checked="" type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology / Soils
<input checked="" type="checkbox"/>	Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Hazards & Hazardous Materials	<input checked="" type="checkbox"/>	Hydrology / Water Quality
<input type="checkbox"/>	Land Use / Planning	<input type="checkbox"/>	Mineral Resources	<input checked="" 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**

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.

*Christopher E. Browder for*

*7/23/14*

Duane Shintaku, Deputy Director of Resource Management  
Department of Forestry and Fire Protection  
P.O. Box 944246  
Sacramento, CA 94244-2460  
916-653-4298

Date Signed

## ANALYSIS OF POTENTIAL ENVIRONMENTAL IMPACTS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. Aesthetics. Will the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **Discussion**

**a) Will the project have a substantial adverse effect on a scenic vista? No impact-** The scenic vistas in project area are likely to be maintained or improved.

**b) Will the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? No impact-** There are no expected impacts to scenic resources. Trees greater than 10 inches in diameter at breast height will not be removed. Rock outcroppings and historic buildings will not be affected. The Lush Meadows Shaded Fuel Break is located within ½ mile of Highway 49, a scenic highway; however, the fuel break is not visible from the highway.

**c) Will the project substantially degrade the existing visual character or quality of the site and its surroundings? No impact-** Project will not degrade existing visual character or quality of the site and its surroundings. Project will maintain existing visual character of the area.

**d) Will the project create a new source of substantial light or glare which will adversely affect day or nighttime views in the area? No impact -** Project will not be a source of light pollution.

Project will occur on existing shaded fuel breaks. Large healthy overstory trees will be retained. Project will maintain the existing vegetation structure. Public has generally approved of the aesthetics of shaded fuel breaks.

**ENVIRONMENTAL ISSUES**

Potentially Significant Impact      Less Than Significant with Mitigation Incorporated      Less Than Significant Impact      No Impact

**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, as updated) prepared by the California Department 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 §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §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"/>

**Discussion**

**a) Would the project 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? No impact-** Project would not convert farmland or rangeland to non-agricultural use.

**b) Would the project conflict with existing zoning for agricultural use or a Williamson Act contract? No impact-** Project would not conflict with existing zoning for agricultural use or a Williamson Act contract.

**c) Would the project conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code**

**§51104(g) No impact-** Project would not conflict with or cause rezoning of timberland or timberland zoned as Timberland Production.

**d) Would the project result in the loss of forest land or conversion of forest land to non-forest use? No impact-** Project would not result in loss of forestland or conversion of forest land to non-forestland use.

**e) Would the project 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? No impact-** Project is a vegetation management project and would not result in conversion of farmland or forest land to other uses.

Project will have no impact on the above environmental resources. Project will not change existing zoning for either land zoned for agricultural use or timberland. Project will not result in loss of forest land or conversion of forest land. Project would not involve changes to existing environment that could result in conversion of farmland to nonagricultural use or conversion of forest land to non forest use. Project may actually improve forest and oak woodland resources resilience by removing competing brush species.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>III. Air Quality.</b>				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Will the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute 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 type="checkbox"/>	<input checked="" 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"/>

**Information about Air Quality**

**Discussion**

**a) Will the project conflict with or obstruct implementation of the applicable air quality plan? No impact-** Project will not conflict with or obstruct implementation of the applicable air quality plan.

**b) Will the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? Less than significant impact-** Project will not violate air

quality standards. Pile burning is a project component. Pile burning will be conducted utilizing the appropriate permits from the APCD.

**c) Will the project 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)?** **No impact-** Project will not 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. Pile burning will only be conducted on burn days designated by the local APCD.

**d) Will the project expose sensitive receptors to substantial pollutant concentrations?** **Less than significant impact-** Project will not expose sensitive receptors to substantial pollutant concentrations. Pile burning will be conducted on designated burn days when atmospheric conditions can mitigate particulate pollution levels to a less than significant impact.

**e) Will the project create objectionable odors affecting a substantial number of people?** **Less than significant impact-** Smoke that is generated from pile burning could be considered an objectionable odor. Project could create objectionable odors affecting a substantial number of people. Pile burning will be conducted on designated burn days when atmospheric conditions can mitigate objectionable odors to less than significant impact levels.

There will be a less than significant impact to air quality from this project from pile burning. Pile burning will be conducted with the appropriate permits from the local APCD. Pile burning is expected to be minimal, since most of the major vegetative removal occurred when these fuel breaks were constructed. Where feasible, the preferred method of woody debris disposal is chipping. The project is short term and requires a minimal amount of vehicle use to complete.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. Biological Resources. Will the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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"/>

**Information about Biological Resources**

**Discussion**

**a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? Less than significant impact with Mitigations Incorporated** - There are no expected adverse effects to species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (DFW) or the United States Fish and Wildlife Service (USFWS). A listing of habitats and species for USGS quadrangles where the project is located, and the adjacent quadrangles, was obtained from the California Natural Diversity Database (CNDBB). A biological analysis was completed for these listings. Habitats listed in the CNDBB such as: Central Valley Rainbow Trout Stream, Valley Sink Shrub, Great Valley Riparian Forest and Big Tree Forest were eliminated from further analysis. This project will not affect these habitats. Project will not eliminate habitats only modify existing vegetation within a narrow elevation range. See Appendix B for a complete discussion of all sensitive species listed. To reduce effects to biological resources to less significant level or no impact, the species listed in Appendix C will need to be surveyed and protected through Mitigation Measure #2.

**Mitigation Measure #2:** Prior to fuel break maintenance activities, a plant survey shall be conducted for plants listed in the biological analysis that may be impacted by the project. If plants are found within the project area, a minimum 15 foot buffer zone shall be established around plants. Motorized equipment and herbicide spraying, mixing and loading is prohibited within the buffer zones. The RPF project manager shall identify plants and establish buffer zones.

***b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service? Less than significant impact with Mitigations Incorporated-*** Impacts to riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations or by DFW or the USFWS are not expected. Riparian areas are protected from significant impacts through Mitigation Measure #1 and Mitigation Measure #3. During the biological scoping process, no sensitive natural communities identified in local or regional plans, policies, or regulations or by DFW or the USFWS were located in the project area.

**Mitigation Measure #1:** Prior to fuel break maintenance activities, a stream channel buffer of at least 30 feet (15 feet on each side of channel) will be established. Stream channel buffers shall be established when riparian vegetation is present. Motorized equipment and herbicide spraying, mixing and loading is prohibited within the stream buffer area. The RPF project manager shall determine which stream channels have riparian vegetation and establish buffer zones.

**Mitigation Measure #3:** Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones.

***c) Would the project 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? Less than significant impact with Mitigations Incorporated -*** Project is not expected to cause significant impacts to wetlands, which would be included in all those areas protected from significant impacts through Mitigation Measure #3. This project will not fill, remove, or cause hydrological interruption to wetlands, marshland or vernal pools. There are no marshes or vernal pools present on the project area.

**Mitigation Measure #3:** Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment and herbicide spraying, mixing and loading is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones.

***d) Would the project 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? No impact-*** Project will not impact migratory fish or wildlife species or with established native resident or migratory wildlife

corridors, or impede the use of native wildlife nursery sites. Shaded fuel breaks are linear with widths of 150 to 300 feet. They often provide edge type habitat desired by wildlife, where wildlife can forage easier.

**e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? No impact-**

There is no local tree preservation policy in Madera or Mariposa Counties. Removal is limited to dead trees and live trees with less than 10 inch diameter at breast height.

**f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? No impact-** The proposed project site is not within the boundaries of a Habitat Conservation Plan, Natural Community Conservation Plan, or other habitat conservation plan. The project does not conflict with implementation of any such plan in Madera or Mariposa Counties.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. Cultural Resources. Will the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Information about Cultural Resources**

As part of the environmental scoping process, recently completed Confidential Archeological Addendums were reviewed to determine if archeological sites could be impacted at the proposed project sites. On February 21, 2013, a letter of project notification was sent to all Native American tribal groups in Madera and Mariposa Counties. Prior to project activities the most recently completed Confidential Archeological Addendum will be reviewed for recorded Archeological sites. For all recorded archeological sites, the site boundaries will be flagged, pile burning will be excluded and only hand work will be permitted within these sites. For all Native American plant collection sites herbicide spraying will be excluded. A CAL FIRE Archeologist has reviewed these protection measures and approved the Archeology procedures discussed in this document. Additionally, a CAL FIRE Archeologist has reviewed and approved the fuel break maintenance activities.

**Mitigation Measure #4: Prior to project activities the most recently completed Confidential Archeological Addendum will be reviewed for recorded Archeological sites and for all recorded archeological sites, the site boundaries will be flagged, pile burning will be excluded and only hand**

work will be permitted in these sites. For all Native American plant collection sites herbicide spraying will be excluded.

### ***Discussion***

**a) *Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? No impact-*** All project areas have had archeological surveys and reports completed within the last 5 years in conjunction with the original clearing operations. Protection measures outlined in these reports will be implemented as part of this operation. An RPF certified to conduct limited archeological survey work supporting CAL FIRE projects will supervise the work. If an archeological resource is found during project implementation, the MMU Environmental Coordinator and the CAL FIRE Regional Archeologist shall be immediately notified. The Environmental Coordinator or the Archeologist shall identify the boundaries of the archeological resource site. No further project activities shall take place within the boundaries of the archeological site until adequate protection measures have been incorporated into the project. The CAL FIRE Regional Archeologist shall approve these protection measures.

**Mitigation Measure #9** If an archeological resource is found during project implementation, the MMU Environmental Coordinator and the CAL FIRE Regional Archeologist shall be immediately notified. The Environmental Coordinator or the Archeologist shall identify the boundaries of the archeological resource site. No further project activities shall take place within the boundaries of the archeological site until adequate protection measures have been incorporated into the project. The CAL FIRE Regional Archeologist shall approve these protection measures.

**b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? Less than significant impact with Mitigations Incorporated*** - All project areas have had archeological surveys and reports completed within the last 5 years in conjunction with the original clearing operations. Protection measures outlined in these reports will be implemented as part of this operation. An RPF certified to conduct limited archeological survey work supporting CAL FIRE projects will supervise the work. If an archeological resource is found during project implementation, the MMU Environmental Coordinator and the CAL FIRE Regional Archeologist shall be immediately notified. The Environmental Coordinator or the Archeologist shall identify the boundaries of the archeological resource site. No further project activities shall take place within the boundaries of the archeological site until adequate protection measures have been incorporated into the project. The CAL FIRE Regional Archeologist shall approve these protection measures.

**Mitigation #4:** Prior to project activities the most recently completed Confidential Archeological Addendum will be reviewed for recorded Archeological sites and for all recoded archeological sites, the site boundaries will be flagged, pile burning will be excluded and only hand work will be permitted in these sites. For all Native American plant collection sites herbicide spraying will be excluded.

**Mitigation Measure #9** If an archeological resource is found during project implementation, the MMU Environmental Coordinator and the CAL FIRE Regional Archeologist shall be immediately notified. The Environmental Coordinator or the Archeologist shall identify the boundaries of the archeological resource site. No further project activities shall take place within the boundaries of the archeological site until adequate protection measures have been incorporated into the project. The CAL FIRE Regional Archeologist shall approve these protection measures.

**c) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? No impact-*** There are no known paleontological resources, sites or unique geologic features in the project site.

**d) *Would the project disturb any human remains, including those interred outside of formal cemeteries? No impact-*** There are no known human remains in the project site. If human remains are found during the project, the MMU Environmental Coordinator, the CAL FIRE Regional Archeologist, the CAL FIRE Prevention Bureau Chief and the Unit Duty Chief shall be immediately notified. No further project activities shall take place until an investigation has been conducted and remains are in custody of the county coroner.

**Mitigation Measure #10** If human remains are found during the project, the MMU Environmental Coordinator, the CAL FIRE Regional Archeologist, the CAL FIRE Prevention Bureau Chief and the Unit Duty Chief shall be immediately notified. No further project activities shall take place until an investigation has been conducted and remains are in custody of the county coroner.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. Geology and Soils. Would the project:</b>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey 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 type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), 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"/>

### Discussion

Project would not expose people or structures to any substantial adverse effects relating to geology and soils.

**a) Would the project 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 California Geological Survey Special Publication 42.) No impact-** Per the Alquist-Priolo Earthquake Fault Zoning Map, there are no known active earthquake faults in Madera or Mariposa Counties.

**ii) Strong seismic ground shaking? No impact-** Per the Alquist-Priolo Earthquake Fault Zoning Map, there are no known active earthquake faults in Madera or Mariposa Counties. **iii) Seismic-related ground failure, including liquefaction? No impact-** The project will not alter the area, increasing risk associated with ground shaking.

**iv) Landslides? No impact-** There are no unstable areas known within the project sites. Target herbicide spraying of sprouting brush or hand clearing of vegetation will not activate landslides or unstable areas.

- b) **Would the project result in substantial soil erosion or the loss of topsoil? No impact-** Herbicide applications will be targeted at woody sprouting and germinating brush species or noxious weeds. This will encourage the establishment and growth of forbs and grasses. Vegetation, including large trees, forbs and grasses, will remain in the project sites to cover and protect soil resources.
- c) **Would the project 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? No Impact-** There are no unstable areas known within the project sites.
- d) **Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property? No impact-** Project would not impact soils because no expansive soil types are known within the project sites.
- e) **Would the project 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? No impact-** This subject is unrelated to the type of project discussed in this document.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. Greenhouse Gas Emissions. Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Information about Greenhouse Gas Emissions**

CEQA Guideline § 15064.4 requires a lead agency to make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of Greenhouse Gas (GHG) emissions resulting from a project, and make a careful judgment to determine significance. The analysis presented below is the good faith effort to calculate the amount of green house gases this project will generate and a determination as to the significance of environmental impact.

State Law (Health and Safety Code § 38505g) defines GHG to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and hexafluoride. Significant changes in global climate patterns have recently been associated with global warming which has been attributed to the accumulation of GHG emissions in the atmosphere. Greenhouse gases trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally while others are created and emitted solely through human activities. The emission of GHGs from burning fossil fuels (i.e., fuels containing carbon), in conjunction with other human activities, appears to be closely associated with global warming (OPR 2008:2). The standard unit to measure GHG emissions is expressed in metric tons (or tonnes) of CO<sub>2</sub>.

The source of GHG emissions for this project will be the use of motor vehicles to transport workers and equipment to the project site, chains saws to cut brush, motorized chippers to chip brush, drip touch fuel to burn brush piles, ATVs to spray herbicide and carbon released into the atmosphere from pile burning. This project is short term and once it is complete the only source of GHGs will be the chipped woody debris left to decompose. The chipped woody debris will emit small amounts of GHGs over a several year period. The GHG emissions from pile burning and chipped woody debris will be offset because the remaining vegetation will absorb the GHGs emitted from pile burning and decomposing chips. The remaining vegetation will grow at a faster rate since there will be more water and nutrients available. The GHG emissions that will be generated as a result of the MMU Unit Forester monitoring the project, or any other Unit management monitoring the project, will not be used in calculating the total metric tons of carbon dioxide. The monitoring and supervising activities of these personnel are part of a daily routine and are separate from the project activities.

The following estimates will be used in calculating GHG emissions. The foliar herbicide application portion of the project is estimated to take 4 weeks, or 160 personnel hours, to complete. This will require the use of two 1-ton diesel trucks to transport equipment and crews to the project sites. The crew will travel from Sonora, CA to the project sites on Monday, work out of temporary housing in Oakhurst, CA during the week, and return to Sonora, CA on Friday. Weekly travel would be 230 miles per truck or 460 miles total per week. Each 1-ton diesel truck gets 12 mpg. The herbicide operation will also require gasoline to run the mix tanks, transfer water and operate ATVs. Gasoline usage is estimated to be 100 gallons.

The hand cutting, pile burning and chipping portion of the project is estimated to take 30 hand crew days to complete, including travel time to the project sites. A crew bus gets 5 mpg and the average round trip distance to the project sites from the Mount Bullion Conservation Camp is 62 miles. A total of 60 chipper operating hours are estimated to complete the brush chipping. The fuel consumption for gas powered chippers is 2 gallons of gasoline per hour. The estimated fuel consumption for CDC hand crew using four chainsaws to cut brush is 2 gallons of gasoline per day. Total estimated drip touch fuel usage for the project is 20 gallons.

- a) ***Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Less than significant impact-*** The following table represents the results of CAL FIRE's calculations of GHG emissions for the project activities. The conversion factors were obtained from the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2013).

### Total GHG Emissions by Project Activity

Project Activity	Quantity	Conversion Factor	GHG Emissions CO2 in metric tons (2204.6 lbs)
Diesel Fuel Use in Herbicide Spray Crew Transport	156 gallons of diesel	10KG/GAL* (156 times 10.15 divided by 1000)	1.6
Gasoline use to run mix tanks and ATV use	100 gallons of gasoline	10KG/GAL* (100 times 10.15 divided by 1000)	1.0
Diesel Fuel Use in CDC Crew Transport	372 gallons of diesel	10KG/GAL* (372 times 10.15 divided by 1000)	3.8
Gasoline use to fuel chippers for project	120 gallons of gasoline	10KG/GAL* (120 times 10.15 divided by 1000)	1.2
Gasoline use to fuel chainsaws for project	60 gallons of gasoline	10KG/GAL* (60 times 10.15 divided by 1000)	.6
Drip touch fuel use	20 gallons of gasoline	10KG/GAL* (20 times 10.15 divided by 1000)	.2
<b>Total GHG Release from project</b>			<b>8.4 metric tons of CO2e</b>

\*[http://www.climateregistry.org/resources/docs/protocols/grp/GRP\\_3.1\\_January2009.pdf](http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf)

CAL FIRE has not established a significance threshold for GHG emissions and additional research is required before a useful threshold for these types of projects can be established. One recent study has suggested a GHG significance threshold of 900 metric tons, as a single event, for small-scale residential projects (CAPCOA 2008: 43). This project would emit approximately 8.4 metric tons of CO<sub>2</sub>. It is CAL FIRE's determination that this level of GHG emission is a less than significant impact.

***b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? No impact-*** There are no local plans, policies, or regulations which are applicable to this issue.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. Hazards and Hazardous Materials. Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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, will 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"/>
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 type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

**a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Less than significant impact-** Project has the potential for small amounts of herbicide and petroleum products to accidentally spill during project implementation.

**Mitigation Measure #7** Prior to project operations, all personnel associated with the project will receive a safety briefing. The safety briefing will include a discussion concerning proper chemical spill containment and clean-up procedures. All materials considered hazardous will be transported, used and disposed according to federal and state regulations. Herbicide will be applied according to pesticide regulations and label requirements.

**b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment? Less than significant impact-** Project will not create a significant hazard to the public or the environment through the release of hazardous materials. The only potential release of hazardous materials is the accidental spillage of herbicide and petroleum products during project operations. Prior to project operations, all personnel associated with the project will receive a safety briefing. The safety briefing will include a discussion concerning proper chemical spill containment and clean-up procedures. All materials considered hazardous will be transported and

disposed off according to federal and state regulations. Members of the public have limited access to project areas. Project is located on private property where the landowners control access. Prior to any project activities CAL FIRE, Fire Safe Council or its contractors will obtain written permission to conduct project activities.

**Mitigation Measure #7** Prior to project operations, all personnel associated with the project will receive a safety briefing. The safety briefing will include a discussion concerning proper chemical spill containment and clean-up procedures. All materials considered hazardous will be transported, used and disposed according to federal and state regulations. Herbicide will be applied according to pesticide regulations and label requirements.

**Mitigation Measure #6:** Herbicide use shall comply with all CCRs pertaining to pesticide use, licensing, mixing, storage, handling and reporting.

- c) ***Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? No impact-*** There is no existing or proposed school within ¼ mile of the project site. No acutely hazardous materials will be used.
- d) ***Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment? No impact-*** The proposed project sites are not included on any list of hazardous materials sites.
- 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? No impact-*** The proposed project area is not located within two miles of a public airport.
- 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? No impact-*** There are no private airstrips in or adjacent to the project sites.
- g) ***Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? No impact-*** Project is intended to enhance emergency response and evacuation planning within the CAL FIRE MMU SRA.
- h) ***Would the project 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? No impact-*** Project is designed to enhance safety from wildland fires maintaining previously constructed shaded fuel breaks.

ENVIRONMENTAL ISSUES	Potential Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. Hydrology and Water Quality. Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will 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 will drop to a level that will 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 will result in substantial on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 that 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) Result in inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

**a) Would the project violate any water quality standards or waste discharge requirements? Less than significant impact with Mitigations Incorporated-** Project will not affect water quality and is not subject to a waste discharge permit. The buffer zones proposed under Mitigation Measure #1 and Mitigation Measure #3 will greatly reduce any potential negative impacts to water quality making it a less than significant impact or no impact. Stream channel buffers trap sediment, nutrients and pesticides by slowing down runoff and allowing infiltration of water into the soil. Once herbicides infiltrate into the soil they can bind with soil particles and organic matter until the break down. The criterion for herbicide selection includes those herbicides that bind tightly to clay particles and soil organic matter, limiting herbicide movement to ground water and watercourses.

**Mitigation Measure #1: Prior to fuel break maintenance activities, a stream channel buffer of at least 30 feet (15 feet on each side of channel) will be established. Stream channel buffers shall be**

established when riparian vegetation is present. Motorized equipment and herbicide spraying is prohibited within the stream buffer area. The RPF project manager shall determine which stream channels have riparian vegetation and establish buffer zones.

**Mitigation Measure #3:** Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones.

- b) *Would the project 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 that would not support existing land uses or planned uses for which permits have been granted)? No impact-*** Project will not affect groundwater.
- c) *Would the project 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 on- or off-site erosion or siltation? No impact-*** This subject is unrelated to the type of project discussed in this document. Project will manage existing vegetation structure while maintaining 100% vegetation cover of large trees, grasses and forbs.
- d) *Would the project 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 on- or off-site flooding? No impact-*** This subject is unrelated to the type of project discussed in this document. Project will manage existing vegetation structure while maintaining near 100% vegetation cover of large trees, grasses and forbs.
- e) *Would the project 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? Less than significant impact with Mitigations Incorporated -*** Project will not create or contribute to runoff. Project will manage existing vegetation structure while maintaining 100% vegetation cover of large trees, grasses and forbs. Project will maintain stream channel buffer strips of 30 feet. By maintaining 100% vegetation cover and vegetation buffer strips along watercourses and wet areas, precipitation will infiltrate into the soil and not contribute to excessive stormwater or polluted runoff.

**Mitigation Measure #1:** Prior to fuel break maintenance activities, a stream channel buffer of at least 30 feet (15 feet on each side of channel) will be established. Stream channel buffers shall be established when riparian vegetation is present. Motorized equipment and herbicide spraying is prohibited within the stream buffer area. The RPF project manager shall determine which stream channels have riparian vegetation and establish buffer zones.

**Mitigation Measure #3:** Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment

and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones.

**Mitigation Measure #5:** No herbicide application during days when the National Weather Service has forecasted a chance (30% or more) of rain, during any rain event, during soil saturation conditions or when velocity levels of 15 miles or greater.

- f) *Would the project otherwise substantially degrade water quality? Less than significant impact with mitigations incorporated-*** No degradation of water quality is expected. The buffer zones proposed under Mitigation Measure #1 and Mitigation Measure #3 will greatly reduce any potential negative impacts to water quality making it a less than significant impact or no impact. The buffer zones proposed under Mitigation Measure #1, Mitigation Measure #3 and wet weather restrictions in Mitigation Measure #5 will greatly reduce any potential negative impacts to water quality making it a less than significant impact or no impact. Stream channel buffers trap sediment, nutrients and chemicals by slowing down runoff and allowing infiltration of water into the soil. When water is absorbed into the soil, nutrients and chemicals can be filtered or broken down by vegetation or biotic organisms in the soil. Wet weather restrictions will ensure that herbicides are not applied during periods when they could run off into adjacent wet meadows, seeps, wet areas, marshes, vernal pools and riparian zones.

**Mitigation Measure #1:** Prior to fuel break maintenance activities, a stream channel buffer of at least 30 feet (15 feet on each side of channel) will be established. Stream channel buffers shall be established when riparian vegetation is present. Motorized equipment and herbicide spraying is prohibited within the stream buffer area. The RPF project manager shall determine which stream channels have riparian vegetation and establish buffer zones.

**Mitigation Measure #3:** Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones.

**Mitigation Measure #5:** No herbicide application during days when the National Weather Service has forecasted a chance (30% or more) of rain, during any rain event, during soil saturation conditions or when velocity levels of 15 miles or greater.

- g) *Would the project 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? No impact-*** This subject is unrelated to the type of project discussed in this document.
- h) *Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows? No impact-*** This subject is unrelated to the type of project discussed in this document.
- i) *Would the project 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? No impact-*** This subject is unrelated to the type of project discussed in this document.

**j) Would the project result in inundation by seiche, tsunami, or mudflow? No impact-** This subject is unrelated to the type of project discussed in this document.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. Land Use and Planning. Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a 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"/>

**Discussion** Project will not alter current land uses or planned future uses.

**a) Would the project physically divide an established community? No impact-** Project does not alter or divide any established communities.

**b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? No impact-** Project would not conflict with any land use plan, policy or regulation of any agency.

**c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan? No impact-** Project would not conflict with any habitat conservation plan or community conservation plan.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. Mineral Resources. Would the project:</b>				
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"/>

**Discussion**

Project will have no affect on mineral resources.

a) **Would the project 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? No impact-** This subject is unrelated to the type of project discussed in this document.

b) **Would the project 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? No impact-** This subject is unrelated to the type of project discussed in this document.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. Noise. Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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, will 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, will the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

Project will result in higher noise levels during implementation. The largest impact will be the use of the chipper and chain saws for manual treatments. Noise levels will be consistent with heavy equipment operations and vegetation management activities in a rural community. Times of operation will be limited from 7am to 5pm. Other noise generated during the project will be from vehicles driving on existing roads and people talking. These are not different from normal activities.

a) **Would the project create exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards? Less than significant with mitigation incorporated -** Project would not create exposure of persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or other applicable local, state and federal standards.

**Mitigation Measure #8 Project hours of operation are from 7:00AM to 5:00PM.**

- b) **Would the project create exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? No impact-** Project would not produce groundborne vibration or noise.
- c) **Would the project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? No impact-** Project is short term and no permanent ambient noise level increases are expected.
- d) **Would the project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? Less than significant impact-** Project would increase temporary noise levels largely due to chipper operation (hours of operation from 7:00 AM to 5:00 PM). This project will cause a short term increase in the ambient noise level in the Project area. Noise levels will be consistent with heavy equipment operations and vegetation management activities in a rural community.

**Mitigation Measure #8** Project hours of operation are from 7:00AM to 5:00PM.

- 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? No impact-** This subject is unrelated to the type of project discussed in this document. Project is not located within two miles of any public airport or public use airport.
- 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? No impact-** This subject is unrelated to the type of project discussed in this document. Project is not located within two miles of any private airport.

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

**Discussion**

Project will not have any impacts on housing.

- a) **Would the project 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)? No impact-** Project is not expected to induce substantial population growth. Project does not propose new development or infrastructure.

**b) Would the project displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere? No impact-** Project would not displace existing housing.

**c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? No impact-** Project would not displace substantial numbers of people.

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

**Discussion**

Project will not have any impacts on Public Services.

**a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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? No impact-** Project objective is to enhance fire protection by reducing the threat of large catastrophic fire.

**Police protection ? No impact-** Project would not impact police protection.

**Schools? No impact-** Project would not impact schools. Project would not increase the number of new residents or need for the construction of new facilities.

**Parks? No impact-** Project would not impact local, state, or federal parks.

**Other public facilities? No impact-** Project would not impact other public facilities. New public facilities such as phone, power, sewer or water will not be needed once project is complete.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. Recreation. Would the project:</b>				
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Discussion**

There are no recreational facilities within or adjacent to the project areas that could be impacted.

**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? No impact-** Project would not impact the use of existing neighborhood or regional parks. This is a vegetation management project.

**b) Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? No impact-** Project does not include, nor require, the construction or expansion of recreational facilities.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. 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"/>

**Discussion**

Project will not impact transportation or traffic.

- a) **Would the project 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? No impact-** Project does not conflict with plan, ordinance or policy involved with any mode of transportation. This is a vegetation management project.
- b) **Would the project 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? No impact-** This subject is unrelated to the type of project discussed in this document.
- c) **Would the project 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? No impact-** This subject is unrelated to the type of project discussed in this document.

- d) **Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? No impact-** This subject is unrelated to the type of project discussed in this document.
- e) **Would the project result in inadequate emergency access? No impact-** Project would not result in inadequate emergency access.
- f) **Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? No impact-** Project does not conflict with policy, plan or program involved with public transit, bicycle or pedestrian facilities. This is a vegetation management project.

ENVIRONMENTAL ISSUES	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 that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

- a) **Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? No impact-** Waste water is not expected to be generated.
- b) **Would the project 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? No impact-** Project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities.

- c) **Would the project 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? No impact-** Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities.
- d) **Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? No impact-** Water needed for the operation will not require additional water supplies.
- e) **Would the project result in a determination by the wastewater treatment provider that 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? No impact-** Project would not impact waste water treatment facilities.
- f) **Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? No impact-** Project would not impact solid waste disposal of landfill facilities.
- g) **Would the project comply with federal, state, and local statutes and regulations related to solid waste? No impact-** Project would comply with all federal, state, and local statutes and regulations related to solid waste

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVIII. Mandatory Findings of Significance.</b>				
a) Does the project have the potential to substantially 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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<small>Authority: Public Resources Code Sections 21083 and 21083.05.            Reference: Government Code Section 65088.4, Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21083.05, 21083.3, 21093, 21094, 21095, and 21151; <i>Sundstrom v. County of Mendocino</i>, (1988) 202 Cal.App.3d 296; <i>Leonoff v. Monterey Board of Supervisors</i> (1990), 222 Cal.App.3d 1337; <i>Eureka Citizens for Responsible Government v. City of Eureka</i> (2007) 147 Cal.App.4th 357; <i>Protect the Historic Amador Waterways v. Amador Water Agency</i> (2004) 116 Cal.App.4th at 1109; <i>San Franciscans Upholding the Downtown Plan v. City and County of San Francisco</i> (2002) 102 Cal.App.4th 656.</small>				

## Discussion

- a) **Would the project have the potential to substantially 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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory? Less than significant impact with Mitigation Incorporated-***

The project will not result in significant biological impacts as described in the project description and this Initial Study. Implementation of the proposed project could have potential impacts to sensitive plants, however, protection measures have been incorporated to ensure impacts are mitigated to a less than significant level. The project would not remove habitat, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce or restrict the range of a rare or endangered species. The project would not result in significant impacts to cultural resources and would not eliminate important examples of major periods of California history or prehistory. Protection measures have been incorporated to ensure cultural resources that may be present are identified prior to operations and avoided, thus mitigating any impacts to a less than significant level.

See Mitigation Measures 1, 2, 3, 4, 5 and 6.

- b) Would 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.) No Impact-*** Impacts of the project are not expected to be cumulative. This project is designed to maintain fuel conditions achieved by manual and mechanical brushing and masticating projects. The original projects were designed to strategically locate and create low fuel areas to help protect the area from wildfire. This project is only designed to maintain this work, not to significantly modify or alter vegetation. Implementation will help maintain the values of the area.
- c) Would the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly? No impact-*** Project will not have effects that will substantially adversely affect humans. Direct human contact with the operation will be minimal. The majority of the property is in private ownership and is not accessible to the general public. Operations will follow all laws and regulations to ensure herbicides will not be allowed to come in contact with water supplies or be inadvertently applied to off target vegetation. All applications will follow direction of a PCA and applied by a QA. Application techniques will be utilized to minimize drift and offsite contamination.

**Appendix A**  
**Mitigation Monitoring and Reporting Plan**  
**for the**  
**Programmatic Shaded Fuel Break Maintenance Project**  
**Initial Study/Mitigated Negative Declaration**  
**Mariposa and Madera Counties, California**

In accordance with CEQA Guidelines Section 15074(d), when adopting a mitigated negative declaration, the lead agency will adopt a Mitigation Monitoring and Reporting Plan (MMRP) that ensures compliance with mitigation measures required for project approval. The California Department of Forestry and Fire Protection (CAL FIRE) is the lead agency for the above-listed project and has developed this MMRP as a part of the final Initial Study/Mitigated Negative Declaration (IS/MND) supporting the project. This MMRP lists the mitigation measures developed in the IS/MND, which were designed to reduce environmental impacts to a less-than-significant level. This MMRP also identifies the party responsible for implementing the measure, defines when the mitigation measure must be implemented, and which party or public agency is responsible for ensuring compliance with the measure.

**Potentially Significant Effects and Mitigation Measures**

The following is a list of the resources that will be potentially affected by the project and the mitigation measures made part of the IS/MND.

**Mitigation Measure #1: Prior to fuel break maintenance activities, a stream channel buffer of at least 30 feet (15 feet on each side of channel) will be established. Stream channel buffers shall be established. Motorized equipment, herbicide spraying and mixing is prohibited within the stream buffer area. The RPF project manager shall determine which stream channels have riparian vegetation and establish buffer zones**

**Schedule:** Prior to project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #2: Prior to fuel break maintenance activities, a plant survey shall be conducted for plants listed in the biological analysis that may be impacted by the project. If plants are found within the project area, a minimum 15 foot buffer zone shall be established around plants. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify plants and establish buffer zones**

**Schedule:** Prior to project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #3: Prior to fuel break maintenance activities, a minimum 15 foot buffer zone shall be established around all seeps, wet areas, and riparian zones. Motorized equipment and herbicide spraying is prohibited within the buffer zones. The RPF project manager shall identify these areas and establish buffer zones**

**Schedule:** Prior to project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

**Mitigation Measure #4: Prior to project activities the most recently completed Confidential Archeological Addendum will be reviewed for recorded Archeological sites, and for all recorded archeological sites, the site boundaries will be flagged, pile burning will be excluded and only hand work will be permitted in these sites. For all Native American plant collection sites herbicide spraying will be excluded.**

**Schedule:** Prior to project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #5: No herbicide application during days when the National Weather Service has forecasted a chance (30% or more) of rain, during rain events, during soil saturation conditions or when velocity levels of 15 miles or greater.**

**Schedule:** Prior to project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #6: Herbicide use shall comply with all CCRs pertaining to pesticide use, licensing, mixing, storage, handling and reporting.**

**Schedule:** Prior, during and after project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #7: Prior to project operations, all personnel associated with the project will receive a safety briefing. The safety briefing will include a discussion concerning proper chemical spill containment and clean-up procedures. All materials considered hazardous will be transported, used and disposed according to federal and state regulations. Herbicide will be applied according to pesticide regulations and label requirements.**

**Schedule:** Prior an during to project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #8: Project hours of operation 7:00 AM to 5:00 PM.**

**Schedule:** During project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #9 If an archeological resource is found during project implementation, the MMU Environmental Coordinator and the CAL FIRE Regional Archeologist shall be immediately notified. The Environmental Coordinator or the Archeologist shall identify the boundaries of the archeological resource site. No further project activities shall take place within the boundaries of the archeological site until adequate protection measures have been incorporated into the project. The CAL FIRE Regional Archeologist shall approve these protection measures.**

**Schedule:** During project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**Mitigation Measure #10 If human remains are found during the project, the MMU Environmental Coordinator, the CAL FIRE Regional Archeologist, the CAL FIRE Prevention Bureau Chief and the Unit Duty Chief shall be immediately notified. No further project activities shall take place until an investigation has been conducted and remains are in custody of the county coroner.**

**Schedule:** During project fuel treatment activity

**Responsible Party:** CAL FIRE Unit Forester

**Verification of Compliance:**

Monitoring Party: CAL FIRE

Initials: \_\_\_\_\_

Date: \_\_\_\_\_

A copy of the completed MMRP will be forwarded to: CAL FIRE Environmental Protection Program, P.O. Box 944246, Sacramento, CA 94244.

## **Appendix B**

# **Biological Analysis for the Shaded Fuel Break Maintenance Project Madera and Mariposa Counties, California**

## Biological Analysis of Nine Quad Search Centered around Ahwahnee Quads-Animals

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Ambystoma californiense</i> California tiger salamander Federally and state threatened CA Fish and Game Species of Special Concern (DFG SSC)	Stream sedimentation.	No expected impact, species occurs in elevations less than 1,000 feet in vernal pool habitat. No vernal pools in project area.
<i>Anaxyrus canorus</i> Yosemite toad Federal candidate, DFG SSC	Heavy equipment use in riparian areas.	No impacts expected. Species restricted to wet meadows in central high Sierra. No wet meadows in project area.
<i>Andrena macswaini</i> An andrenid bee Currently None	Habitat Destruction of its host plant <i>Camissonia</i> , an annual plant.	<b>Plant survey and buffer zone establishment for <i>Camissionia</i> required to protect species (MM2).</b>
<i>Antrozous pallidus</i> pallid bat DFG SSC	Roost site disturbance.	Species prefers dry open habitat with large rocky areas for roosting. Large rocky areas will not be disturbed from project. No expected impact.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	Habitat destruction from fuel reduction and road building activities.	<b>Plant survey and buffer zone establishment for valley elderberry required to protect species (MM2).</b>
<i>Emys marmorata</i> western pond turtle DFG SSC	Destruction of eggs in terrestrial nests, loss of riparian habitat.	Riparian habitat in project area will be protected (MM3). No expected impacts.
<i>Gulo gulo</i> California wolverine	Habitat destruction causing loss of denning habitat.	Project not expected to impact species. Resides in elevations mostly above 6400 feet. Elevation range of project is 1500 to 3500 feet.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Martes americana sierrae</i> Sierra marten Currently none	Logging and development in mixed conifer forests.	Project not expected to impact species. Preferred habitat is mixed conifer forests with 40% crown closure. Needs a variety of age classes with old growth trees or large snags. No mixed conifer habitat in project area.
<i>Martes pennanti (pacifica)</i> pacific fisher Federal Candidate species	Logging and development in mixed conifer, red fir-white fir, forests.	Project not expected to impact species. Preferred habitat is in dense mature forests with high percent of canopy closure. No dense mature mixed conifer, red fir-white fir, habitat in project area.
<i>Rana boylei</i> foothill yellow-leg frog DFG SSC	Stream sedimentation.	Stream channel buffer zones of 30 feet (MM1) to be established. No impacts expected.
<i>Spea hammondi</i> western spadefoot DFG SSC	Vernal pool destruction.	No expected impact. Species located in low elevation, vernal pools in grassland. No vernal pool habitat in project area.
<i>Taxidea taxus</i> American badger Currently none	Development.	No expected negative impact. Species prefers open habitat that project will maintain.
<i>Tetrix sierrana</i> Sierra pygmy grasshopper Currently None	Heavy equipment use in riparian areas.	There are no impacts expected from project. Riparian vegetation corridors will not be disturbed (MM1).

<b>Scientific Name</b> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Hydroporus leechi</i> Leech's skyline diving beetle Currently None	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts.
<i>Haliaeetus leucocephalus</i> bald eagle State endangered	Habitat loss to logging and development.	No impact expected. Requires large old growth trees for nesting, near large bodies of water. No large bodies of water near project area.
<i>Vulpes vulpes necator</i> Sierra nevada red fox State threatened	Loss of coniferous forest habitat.	Project not expected to impact species. Preferred elevation of species is above 4922 feet. Maximum project area elevation is 3500 feet.

## Biological Analysis of Nine Quad Search Centered around Ahwahnee Quads-Plants

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Allium abramsii</i> Abram's onion CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Balsamorhiza macrolepis var. macrolepis</i> big-scale balsamroot CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Calyptridium pulchellum</i> Mariposa pussypaws Federal threatened, CNPS 1B.1	May be impacted by pile burning, soil compaction or herbicide use.	Plant found on exposed sites associated with granitic domes or decomposing granite. Project activities unlikely to occur on these sites. No impact expected.
<i>Carpenteria californica</i> tree-anemone CNPS 1B.2	Erosion from grading and soil disturbance.	<b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Cinna bolandieri</i> Bolander's woodreed 1B.2	Heavy equipment operations in wet areas and meadows.	Plant grows in riparian and wet meadows above 6000 feet. No expected impact. Habitat does not occur on the project area
<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.3	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated with open rocky sites. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Collomia rawsoniana</i> Rawson's flaming trumpet CNPS 1B.2	Erosion from grading, soil disturbance and herbicide use.	Plant found in riparian zones. Riparian habitat will not be disturbed (MM3). There are no impacts expected from project.

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	Erosion from grading and soil disturbance.	Annual herb found in dry decomposed granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Lupinus citrinus var. citrinus</i> orange lupine CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial plant associated with chaparral, cismontane woodland in rocky decomposed granitic outcrops. <b>Plant survey and buffer zone establishment required (MM2).</b>
<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	Erosion from grading and soil disturbance.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Peltigera hydrothyria</i> aquatic felt lichen Currently none	Stream channel erosion.	There are no impacts expected. Lichen requires cold perennial creeks. Habitat does not occur on the project area.

<b>Scientific Name</b> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Hulsea brevifolia</i> short-leaved hulas CNPS 1B.2	Erosion from grading and soil disturbance.	Plant generally located in upper montane coniferous forests, usually above 5,000 feet and in forest openings. There are no impacts expected from project. Habitat does not occur on the project area
<i>Trifolium bolanderi</i> Bolander's clover CNPS 1B.2	Destruction of aquatic habitat.	Plant found in aquatic habitat. Aquatic habitat protected (MM3). No impacts expected from this project.

## Biological Analysis of Nine Quad Search Centered around Fish Camp Quads-Animals

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Anaxyrus canorus</i> Yosemite toad Federal candidate DFG SSC	Heavy equipment use in riparian areas.	No impacts expected. Species restricted wet meadows in central high Sierra. No wet meadows in project area.
<i>Andrena macswaini</i> An andrenid bee Currently None	Habitat Destruction of its host plant Camissionia an annual plant.	<b>Plant survey and buffer zone establishment for Camissionia required to protect species (MM2).</b>
<i>Antrozous pallidus</i> Pallid Bat Currently none	Disturbance of roosting snags.	Species prefers dry open habitat with large rocky areas for roosting. Large rocky areas will not be disturbed from project. No expected impact
<i>Atractelmis wawona</i> Wawona riffle beatle Currently none	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts
<i>Corynorhinus townsendii</i> Townsend's big-eared bat State candidate	Roost site disturbance. Roosts in open, dwellings or caves.	Project not expected to impact species, primary roosting not likely to be disturbed
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	Habitat destruction from fuel reduction and road building activities.	<b>Plant survey and buffer zone establishment for valley elderberry required to protect species (MM2).</b>
<i>Empidonax traillii</i> willow flycatcher State endangered	Loss of wet meadow and riparian habitat.	No impact expected. Wet meadows and riparian areas to be avoided by MM3
<i>Emys marmorata</i> western pond turtle DFG SSC	Destruction of eggs in terrestrial nests, loss of riparian habitat.	No expected impact, no heavy equipment or riparian habitat will be avoided-MM1 and MM3.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Eumops perotis californicus</i> western mastiff bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Prefers open semi-arid habitats including woodlands and chaparral. Roosts in crevices in cliff face, high buildings, trees and tunnels. Roost habitat will not be disturbed.
<i>Gulo gulo</i> California wolverine	Habitat destruction causing loss of denning habitat.	Project not expected to impact species, resides in elevations mostly above 6400 feet. Elevation range of project is 1500 to 3500 feet.
<i>Haliaeetus leucocephalus</i> bald eagle State endangered	Habitat loss to logging and development.	No impact expected. Requires large old growth trees for nesting, near large bodies of water. No large bodies of water near project area.
<i>Hydroporus leechi</i> Leech's skyline diving beetle Currently None	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts
<i>Lasionycteris noctivagans</i> silver-haired bat Currently none	Disturbance to roosts usually located in rock crevices. Also uses hollow trees.	No expected impact-- treatment areas do not contain rock crevice habitat.
<i>Lasiurus blossevillii</i> western red bat DFG SSC	Roost site disturbance.	No expected negative impact. Prefers open areas with edge habitat, roosts in large and medium trees with foliage, which won't be disturbed.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Euderma maculatum</i> spotted bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting. Cliff and cave habitat not in project area.
<i>Martes americana sierrae</i> Sierra marten Currently none	None.	Project not expected to impact species. Preferred habitat is mixed conifer forests with 40% crown closure. Needs a variety of age classes with old growth trees or large snags. No mixed conifer habitat in project area.
<i>Myotis ciliolabrum</i> western small-footed myotis Currently None	Roost site disturbance.	Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges. No caves, buildings, or mines in project area. No expected impacts.
<i>Myotis evotis</i> long-eared myotis Currently none	Roost site disturbance.	Project not expected to impact species. Species found in all woodland, brush and forest habitats. Nursery colonies located in buildings, crevice spaces under bark and snags. Roost habitat will not be disturbed.

<b>Scientific Name</b> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Myotis thysanode</i> fringed myotis Currently none	Roost site disturbance.	Elevation range of species is 4,000 to 7,000 in hardwood and coniferous forests. Roosts in caves, mines and buildings. Maximum project area is 3500 feet. No expected impact
<i>Myotis yumanensis</i> Yuma myotis Currently none	Roost site disturbance.	Project not expected to impact species. Preferred habitat is open woodlands near open bodies of water. Roosting habitat is caves and old buildings. Roost habitat will not be disturbed.
<i>Rana boylei</i> foothill yellow-leg frog DFG SSC	Stream sedimentation.	Stream channel buffer zones of 30 feet (MM1) to be established. No impacts expected.
<i>Rana sierrae</i> sierra yellow-leg frog DFG SSC	Stream sedimentation.	Stream channel buffer zones of 30 feet (MM1) to be established. No impacts expected.
<i>Strix nebulosa</i> great gray owl DFG SSC	Loss of meadow habitat.	Project not expected to impact species. Preferred habitat is in mixed conifer or red fir forests, in or on edges of meadows. No mixed conifer or red fir habitat in project area

<i>Scientific Name</i> <i>Common Name</i> <i>Status</i>	<i>Potential Impacts</i>	<i>Analysis</i>
<i>Vulpes vulpes necator</i> Sierra nevada red fox State threatened	Loss of coniferous forest habitat.	Project not expected to impact species. Preferred elevation of species is above 4922 feet. Maximum project area elevation is 3500 feet.
<i>Tetrix sierrana</i> Sierra pygmy grasshopper Currently None	Heavy equipment use in riparian areas.	There are no impacts expected from project. Riparian vegetation corridors will not be disturbed (MM1 and MM3).
<i>Lasiurus cinereus</i> hoary bat Currently none	Roost site disturbance.	No expected negative impact. Prefers open areas with edge habitat, roosts in large and medium trees with foliage, which won't be disturbed.
<i>Martes pennanti (pacifica)</i> pacific fisher Federal Candidate species	Logging and development in mixed conifer, red fir-white fir forests.	Project not expected to impact species. Preferred habitat is in dense mature forests with high percent of canopy closure. No dense mature mixed conifer habitat in project area.
<i>Taxidea taxus</i> American badger Currently none	Development.	No expected negative impact, species prefers open habitat that project will maintain.

## Biological Analysis of Nine Quad Search Centered around Fish Camp Quads-Plants

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Allium abramsii</i> Abram's onion CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Allium yosemitense</i> Yosemite Onion	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Calyptridium pulchellum</i> Mariposa pussypaws Federal threatened, CNPS 1B.1	May be impacted by pile burning, soil compaction or herbicide use	Plant found on exposed sites associated with granitic domes or decomposing granite. Project activities unlikely to occur on these sites. No impact expected.
<i>Carex arcta</i> Northern clustered sedge	Heavy equipment operations in wet areas and meadows.	Plant grows in fens and bogs. No expected impact. Wet areas will be avoided by MM3.
<i>Cinna bolandieri</i> Bolander's woodreed 1B.2	Heavy equipment operations in wet areas and meadows.	Plant grows in riparian and wet meadows above 6000 feet. Elevation range of project area is 1500-3500 feet. No expected impact.
<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated with open rocky sites. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>

<p><i>Scientific Name</i>  Common Name  Status</p>	<p>Potential Impacts</p>	<p>Analysis</p>
<p><i>Eriophyllum congdonii</i>  Congdon's woolly sunflower  CNPS 1B.2</p>	<p>May be impacted by pile burning, soil compaction or herbicide use.</p>	<p>Annual herb restricted to dry, south facing slopes in metamorphic rock outcroppings. Herbicide and other project activities not expected to occur in rock outcroppings No expected impact.</p>
<p><i>Eriophyllum nubigenum</i>  Yosemite woolly sunflower  CNPS 1B.2</p>	<p>May be impacted by pile burning, soil compaction or herbicide use.</p>	<p>Annual herb restricted to dry, south facing slopes in granite domes, slabs and gravels. Herbicide and other project activities not expected to occur in rock outcroppings No expected impact.</p>
<p><i>Hulsea brevifolia</i>  Short-leaved hulsea  CNPS 1B.2</p>	<p>May be impacted by pile burning, soil compaction or herbicide use.</p>	<p>Plant generally located in upper montane coniferous forests, usually above 5,000 feet and in forest openings. Elevation range of project area is 1500-3500 feet. There are no impacts expected from project.</p>
<p><i>Leptosiphon serrulatus</i>  Madera leptosiphon  CNPS 1B.2</p>	<p>Erosion from grading and soil disturbance</p>	<p>Annual herb found in dry decomposed granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within plant's life span (MM2).</b></p>
<p><i>Lewisia congdonii</i>  Congdon's lewisia  CNPS 1B.3</p>	<p>May be impacted by pile burning, soil compaction or herbicide use.</p>	<p>There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.</p>

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Lupinus citrinus var. deflexus</i> Mariposa lupine CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial plant associated with chaparral, cismontane woodland in rocky decomposed granitic outcrops. <b>Plant survey and buffer zone establishment required (MM2).</b>
<i>Trifolium bolanderi</i> Bolanders clover CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use. Plant is a moss.	Plant found in aquatic habitat. Aquatic habitat protected (MM3). No impacts expected from this project.
<i>Mimulus filicaulis</i> slender-stemmed monkeyflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Mimulus pulchellus</i> Yellow-lip pansy monkey flower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Collomia rawsoniana</i> Rawson's flaming trumpet CNPS 1B.2	Erosion from grading, soil disturbance and herbicide use.	Plant found in riparian zones. Riparian habitat will not be disturbed (MM3). There are no impacts expected from project.
<i>Lupinus citrinus var. citrinus</i> orange lupine CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial plant associated with chaparral, cismontane woodland in rocky decomposed granitic outcrops. <b>Plant survey and buffer zone establishment required (MM2).</b>

## Biological Analysis of Nine Quad Search Centered around Buckingham Mountain Camp Quads-Animals

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Accipiter gentilis</i> northern goshawk DFG SSC	Loss of habitat from development.	No impact expected, usually nests in higher elevation mixed conifer forest, above 5000 feet. Elevation range of project is 1,500 - 3,500 feet.
<i>Anaxyrus canorus</i> Yosemite toad Federal candidate DFG SSC	Heavy equipment use in riparian areas.	No impacts expected. Species restricted to wet meadows in central high Sierra. No wet meadows in project area.
<i>Antrozous pallidus</i> Pallid Bat Currently none	Disturbance of roosting snags.	Species prefers dry open habitat with large rocky areas for roosting. Large rocky areas will not be disturbed from project. No expected impact
<i>Atractelmis wawona</i> Wawona riffle beetle Currently none	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts
<i>Calicina conifera</i> Crane Flat harvestman Currently None	Heavy equipment use in mixed conifer forest.	No impact expected. Habitat for species is usually above 7,000 feet in elevation. Elevation range of project is 1,500 to 3500 feet.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	Habitat destruction from fuel reduction and road building activities.	<b>Plant survey and buffer zone establishment for valley elderberry required to protect species (MM2).</b>
<i>Empidonax traillii</i> willow flycatcher State endangered	Loss of wet meadow and riparian habitat.	No impact expected. Wet meadows are not present on the project area, and riparian areas to be avoided by MM3
<i>Emys marmorata</i> western pond turtle DF SSC	Destruction of eggs in terrestrial nests, loss of riparian habitat.	No expected impact, no heavy equipment allowed in and riparian habitat will be avoided-- MM1 and MM3.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Eumops perotis californicus</i> western mastiff bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Prefers open semi arid habitats including woodlands and chaparral. Roosts in crevices in cliff face, high buildings, trees and tunnels, which won't be disturbed.
<i>Helminthoglypta allynsmithi</i> Merced Canyon shoulderband Currently none	Heavy equipment use and road building in rocky area of Merced River Canyon.	No impact expected. Species known only in Merced River Canyon. Project not located in Merced River Canyon.
<i>Hydromantes brunus</i> limestone salamander State threatened, DFG FP	Habitat destruction from road building and mining.	No expected impacts. Habitat for species is located in limestone crevices along the Merced River Canyon. Project not located in Merced River Canyon.
<i>Hydromantes platycephalus</i> Mount Lyell salamander DFG SSC	Habitat destruction from road building and mining.	No expected impacts. Habitat for species includes massive rock areas with fissures and seeps. No habitat in project area.
<i>Hydroporus leechi</i> Leech's skyline diving beetle Currently none	Destruction of aquatic habitat.	No expected impact, no heavy equipment in riparian habitat (MM1 and MM3).
<i>Lasiurus blossevillii</i> western red bat DFG SSC	Roost site disturbance.	No expected negative impact. Prefers open areas with edge habitat, roosts in large and medium trees with foliage, which won't be disturbed.
<i>Lasiurus cinereus</i> hoary bat Currently none	Roost site disturbance.	No expected negative impact. Prefers open areas with edge habitat, roosts in large and medium trees with foliage, which won't be disturbed.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Martes americana sierrae</i> Sierra marten Currently none	Logging and development in mixed conifer forests.	Project not expected to impact species. Preferred habitat is mixed evergreen forests with 40% crown closure. Needs a variety of age classes with old growth trees or large snags. No mixed conifer habitat in project area.
<i>Martes pennanti (pacifica)</i> pacific fisher Federal Candidate species	Logging and development in mixed conifer red fir-white fir forests.	Project not expected to impact species. Preferred habitat is in dense mature forests with high percent of canopy closure. No mature dense mixed conifer forests in project area.
<i>Monadenia yosemitensis</i> Yosemite Mariposa sideband Currently none	Equipment use.	Species known to inhabit rockslides, which are not present within project area. No expected impacts
<i>Myotis ciliolabrum</i> western small-footed myotis Currently None	Roost site disturbance.	Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges. Roost habitat will not be disturbed. No expected impacts.
<i>Myotis evotis</i> long-eared myotis Currently none	Roost site disturbance.	Project not expected to impact species. Species found in all woodland, brush and forest habitats. Nursery colonies located in buildings, crevice spaces under bark and snags. Roost habitat will not be disturbed.
<i>Myotis thysanode</i> fringed myotis Currently none	Roost site disturbance.	Elevation range of species is 4,000 to 7,000 in hardwood and coniferous forests. Roosts in caves, mines and buildings. Project elevation range is 1,500 to 3,500 feet. No expected impact.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Myotis yumanensis</i> Yuma myotis Currently none	Roost site disturbance.	Project not expected to impact species. Preferred habitat is open woodlands near open bodies of water. Roosting habitat is caves and old buildings. Roost habitat will not be disturbed.
<i>Philotiella speciosa bohartorum</i> Boharts' blue butterfly Currently none	Destruction of habitat from development or road building.	No impact expected. Species known only in Feliciana Quadrangle, usually associated with serpentine soils. Project not located in Feliciana Quadrangle.
<i>Punctum hannai</i> Trinity Spot Currently none	Loss of wet meadow and riparian habitat.	No impact expected. Wet meadows are not present, and riparian areas to be avoided by MM3
<i>Rana boylei</i> foothill yellow-leg frog DFG SSC	Stream sedimentation.	There are no impacts expected from project. Riparian vegetation and vegetation filter strips along stream corridors will not be disturbed with equipment or spraying of herbicide. See MM1.
<i>Rana sierrae</i> sierra yellow-leg frog DFG SSC	Stream sedimentation.	There are no impacts expected from project. Riparian vegetation and vegetation filter strips along stream corridors will not be disturbed with equipment or spraying of herbicide. See MM1.
<i>Strix nebulosa</i> great gray owl DFG SSC	Loss of meadow habitat.	Project not expected to impact species. Preferred habitat is in mixed conifer or red fir forests, in or on edges of meadows. No mix conifer or red fir habitat in project area.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Vulpes vulpes necator</i> Sierra nevada red fox State threatened	Loss of coniferous forest habitat.	Project not expected to impact species. Preferred elevation of species is above 4922 feet . Project elevation range is 1,500 to 3,500 feet.
<i>Tetrix sierrana</i> Sierra pygmy grasshopper Currently None	Heavy equipment use in riparian areas.	There are no impacts expected from project. Riparian vegetation corridors will not be disturbed (MM1 and MM3).
<i>Haliaeetus leucocephalus</i> bald eagle State endangered	Habitat loss to logging and development.	No impact expected. Requires large old growth trees for nesting, near large bodies of water. No large bodies of water near project area.
<i>Euderma maculatum</i> spotted bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting. Roost habitat will not be disturbed.
<i>Lasionycteris noctivagans</i> silver-haired bat Currently none	Disturbance to roosts usually located in rock crevices, also uses hollow trees.	No expected impact. Roosting habitat will not be disturbed.
<i>Myotis volans</i> long-legged myotis Currently none	Roost site disturbance.	Project not expected to impact species. Most commonly found in woodland and forest habitats above 4,000 feet. Trees are day roosts; caves and mines night roosts. Project elevation range is 1,500 to 3,500 feet.
<i>Taxidea taxus</i> American badger Currently none	Development.	No expected negative impact. Species prefers open habitat that project will maintain.

## Biological Analysis of Nine Quad Search Centered around Buckingham Mountain Camp Quads-Plants

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Allium yosemitense</i> Yosemite Onion	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Boechera tularensis</i> Tulare rockcress CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Bruchiabolander</i> Bolander's bruchia CNPS 2.2	May be impacted by pile burning, soil compaction or herbicide use.	Moss which is found on damp bare soil. Project activities unlikely to impact habitat where this moss occurs.
<i>Calyptridium pulchellum</i> Mariposa pussypaws Federal threatened, CNPS 1B.1	May be impacted by pile burning, soil compaction or herbicide use.	Plant found on exposed sites associated with granitic domes or decomposing granite. Project activities unlikely to occur on these sites. No impact expected.
<i>Carex arcta</i> Northern clustered sedge	Heavy equipment operations in wet areas and meadows.	Sedge grows in wet areas and riparian sites. Project activities will be avoided in riparian areas (MM3). No expected impact.
<i>Carex tompkinsii</i> Tompkin's sedge CNPS 4.3	Heavy equipment operations in wet areas and meadows.	No impact expected. Wet meadows are not present, and wet areas to be avoided--MM3.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Clarkia biloba ssp australis</i> Mariposa clarkia CNPS 1B.2	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated with chaparral cismontane woodlands. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Clarkia lingulata</i> Merced Clarkia CNPS 1B.1	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated with north facing slopes in metamorphic gravels and red clay. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated in open pine forests. <b>Survey required when conducting project activities within life span (MM2).</b>
<i>Cryptantha mariposae</i> Mariposa cryptantha CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant associated with serpentine soils. <b>Plant survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Entosthodon kochii</i> Koch's cord moss CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	No expected impact. Only known occurrence is in Feliciana Quadrangle. Project area not located in Feliciana Quadrangle.
<i>Erigeron mariposanus</i> Mariposa daisy CNPS 1A	May be impacted by pile burning, soil compaction or herbicide use.	No expected impacts. Only known occurrences in Mariposa quadrangle. Last seen in 1900. Project area not located in Mariposa Quadrangle.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Horkelia parryi</i> Parry's horkelia CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial plant. No impacts expected. Occurs in open chaparral habitat in acidic soils at elevation 2600-3,000 feet. Chaparral habitat not on project area.
<i>Ivesia unguiculata</i> Yosemite ivesia CNPS 4.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual herb found in forest and meadow edge habitat in red fir and lodgepole pine forests 5,000 to 8,000 feet. Habitat does not occur on the project area. No expected impact.
<i>Hulsea brevifolia</i> Short-leaved hulsea CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Plant generally located in upper montane coniferous forests, usually above 5,000 feet and in forest openings. Habitat does not occur on the project. There are no impacts expected from project.
<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	Erosion from grading and soil disturbance.	Plant is found in dry decomposed granitic soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Lewisia congdonii</i> Congdon's lewisia CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Lomatium congdonii</i> Congdon's lomatium CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Lupinus citrinus var. deflexus</i> Mariposa lupine CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Lupinus spectabilis</i> shaggyhair lupine CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Mielichhoferia elongata</i> Elongate copper moss CNPS2.2	May be impacted by pile burning, soil compaction or herbicide use.	Moss restricted to humid, cool, shady rock outcroppings with high metal content. Project activities not likely to occur on habitat. No impact expected.
<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	Erosion from grading and soil disturbance.	Plant found on exposed disturbed thin granitic soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Mimulus filicaulis</i> slender-stemmed monkeyflower	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Plagiobothrys torreyi</i> var. <i>torreyi</i> Yosemite popcorn flower CNPS1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb located in moist granitic soils along meadow edges, 3,900- 5,700 feet. Project activities unlikely to occur in these sites. No expected impacts.
<i>Platan yosemitensis</i> Yosemite bog orchid CNPS 1B.2	Habitat loss due to development and soil compaction.	Habitat does not occur on project area, No impacts expected. Plant grows in bogs.
<i>Potamogeton epihydrus</i> Nuttall's ribbon-leaved pondweed CNPS 2.2	Habitat loss due to development and soil compaction.	Habitat does not occur on project area. No impacts expected. Plant grows in bogs and ponds.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Rhynchospora alba</i> White baked rush CNPS 2.2	Habitat loss due to development and soil compaction.	Habitat does not occur on project area. No impacts expected. Plant grows in acidic wetlands not available on project.
<i>Schizymerium shevockii</i> Shevock's copper moss CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use. Plant is a moss.	Moss restricted to humid, cool, shady rock outcroppings with high metal content. Project activities not likely to occur on habitat. No impact expected.
<i>Didymodon norrisii</i> Norris beard moss CNPS 2.2	May be impacted by pile burning, soil compaction or herbicide use.	Moss is located in wet areas on rock substrates (MM3). Project activities not likely to occur on habitat.
<i>Stuckenia filiformis</i> Slender-leaved pondweed CNPS 2.2	Plant grows in bogs and ponds. Heavy equipment operations in bogs and ponds.	Habitat does not occur on project area. No impacts expected.
<i>Cinna bolandieri</i> Bolander's woodreed 1B.2	Heavy equipment operations in wet areas and meadows.	Plant grows in riparian and wet meadows above 6000 feet. Project elevation range is 1,500 to 3,500. No expected impact.
<i>Lewisia dispala</i> Yosemite lewisia CNPS 1B.2	Grows in rocky slopes of talus. May be impacted by pile burning and herbicide use.	Perennial herb associated with mixed conifer, red fir forests, 6,500-8,500 feet in elevation. Project elevation range is 1,500 to 3,500. No expected impact.
<i>Eriophyllum congdonii</i> Congdon's woolly sunflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual herb restricted to dry, south facing slopes in metamorphic rock outcroppings. Project activities not expected to occur in rock outcroppings. No expected impact

## Biological Analysis of Nine Quad Search Centered around Stumpfield Mtn. Quads-Animals

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Monadenia yosemitensis</i> Yosemite Mariposa sideband Currently none	Equipment use.	Species known to inhabit rockslides not present within project area. No expected impacts.
<i>Philotiella speciosa bohartorum</i> Boharts' blue butterfly Currently none	Destruction of habitat from development or road building.	No expected impact. Species known only in Feliciana Quadrangle. Project area not located in Feliciana Quadrangle.
<i>Andrena macswaini</i> An andrenid bee Currently None	Habitat Destruction of its host plant.	<i>Camissionia</i> an annual plant. <b>Plant survey and buffer zone establishment for <i>Camissionia</i> required to protect species (MM2).</b>
<i>Tetrix sierrana</i> Sierra pygmy grasshopper Currently None	Heavy equipment use in riparian areas.	Riparian habitat in project area will be protected (MM3). No expected impacts.
<i>Atractelmis wawona</i> Wawona riffle beetle Currently none	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts.
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	Habitat destruction from fuel reduction and road building activities.	<b>Plant survey and buffer zone establishment for valley elderberry required to protect species (MM2).</b>
<i>Hydroporus leechi</i> Leech's skyline diving beetle Currently None	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts.
<i>Empidonax trailii</i> Willow flycatcher Federal none State endangered	Destruction of aquatic habitat around wet meadows.	Aquatic habitat in project area will be protected (MM3). No wet meadows are present on the project area. No expected impacts.

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Ambystoma californiense</i> California Tiger Salamander Federally threatened California Rare	Vehicle use off road crushing burrows.	Species uses stock ponds and surrounding areas. Travels overland at night. Work will be restricted to daylight hours. No expected impact.
<i>Rana sierrae</i> Sierra Nevada yellow-leg frog DFG SSC	Stream sedimentation.	There are no impacts expected from the project. Riparian vegetation and vegetation filter strips along stream corridors will not be disturbed with equipment or spraying of herbicide. See MM1.
<i>Rana boylei</i> foothill yellow-leg frog DFG SSC	Stream sedimentation.	Stream channel buffer zones of 30 feet (MM1) to be established. No impacts expected.
<i>Emys marmorata</i> Western pond turtle Currently none	Destruction of aquatic habitat and vehicle injury during dispersion.	Aquatic habitat in project area will be protected (MM3). Operations will restrict vehicles to existing roads. No expected impacts.
<i>Antrozous pallidus</i> Pallid Bat Currently none	Disturbance of roosting snags.	Species prefers dry open habitat with large rocky areas for roosting. Large rocky areas will not be disturbed from project. No expected impact.

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Euderma maculatum</i> Spotted bat Currently none	Disturbance to roosts usually located in rock crevices.	No expected impact. Treatment area does not contain habitat.
<i>Lasionycteris noctivagans</i> silver-haired bat Currently none	Disturbance to roosts usually located in rock crevices. Also uses hollow trees.	Vehicles will be restricted to existing roads. No expected impact. Treatment areas do not contain habitat.
<i>Lasiurus cinereus</i> hoary bat Currently none	Roost site disturbance.	No expected negative impact. Prefers open areas with edge habitat, roosts in large and medium trees with foliage, which won't be disturbed.
<i>Eumops perotis californicus</i> western mastiff bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Prefers open semi-arid habitats including woodlands and chaparral. Roosts in crevices in cliff face, high buildings, trees and tunnels.
<i>Myotis ciliolabrum</i> western small-footed myotis Currently None	Roost site disturbance.	Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges. No expected impacts.

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Haliaeetus leucocephalus</i> bald eagle State endangered	Habitat loss to logging and development.	No impact expected. Requires large old growth trees for nesting, near large bodies of water. No large bodies of water in project area.
<i>Lasiurus blossevillii</i> western red bat DFG SSC	Roost site disturbance.	No expected impact. Prefers open areas with edge habitat, roosts in large trees with foliage, which won't be disturbed.
<i>Myotis thysande</i> fringed myotis Currently none	Roost site disturbance.	Elevation range of species is 4,000 to 7,000 in hardwood and coniferous forests. Roosts in caves, mines and buildings. Project elevation range is 1,500 to 3,500 feet. No expected impact.
<i>Myotis evotis</i> long-eared myotis Currently none	Roost site disturbance.	Project not expected to impact species. Species found in all woodland, brush and forest habitats. Nursery colonies located in buildings, crevice spaces under bark and snags. Roost habitat will not be disturbed.
<i>Taxidea taxus</i> American badger Currently none	Development.	No expected negative impact. Species prefers open habitat that project will maintain.

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Martes pennanti (pacifica)</i> pacific fisher Federal Candidate species	Logging and development in mixed conifer, red fir-white fir, forests.	Project not expected to impact species. Preferred habitat is in dense mature forests with high percent of canopy closure. No mature dense mixed conifer forests in project area.
<i>Myotis yumanensis</i> Yuma myotis Currently none	Roost site disturbance.	Project not expected to impact species. Preferred habitat is open woodlands near open bodies of water. Roosting habitat is caves and old buildings. Roost habitat will not be disturbed.
<i>Martes americana sierrae</i> Sierra marten Currently none	Logging and development in mixed conifer forests.	Project not expected to impact species. Preferred habitat is mixed evergreen forests with 40% crown closure. Needs a variety of age classes with old growth trees or large snags. No mixed conifer habitat in project area.

## Biological Analysis Nine Quad Search Centered around Stumpfield Mtn. Quads-Plants

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Clarkia rostrata</i> Beaked clarkia CNPS 1B.3	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated with valley grassland, woodland, along north facing slopes. Elevation ranges from 65 to 510 feet, which is below elevation range of project. No expected impact.
<i>Cryptantha mariposae</i> Mariposa cryptantha CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant associated with serpentine soils. <b>Survey required when conducting project activities within life span (MM2).</b>
<i>Entosthodon kochii</i> Koch's cord moss CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	No expected impact. Only known occurrence is in Feliciana quadrangle. Feliciana quadrangle not in project area
<i>Erigeron mariposanus</i> Mariposa daisy CNPS 1A	May be impacted by pile burning, soil compaction or herbicide use.	No expected impacts. Only known occurrences in Mariposa quadrangle. Last seen in 1900. Mariposa quadrangle not in project area.

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Allium yosemitense</i> Yosemite Onion	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Calyptridium pulchellum</i> Mariposa pussypaws Federal threatened, CNPS 1B.1	May be impacted by pile burning, soil compaction or herbicide use.	Plant found on exposed sites associated with granitic domes or decomposing granite. Project activities unlikely to occur on these sites. No impact expected.
<i>Carex arcta</i> Northern clustered sedge	Heavy equipment operations in wet areas and meadows.	Plant grows in fens and bogs. No Project activities to occur on these sites. No impact expected.
<i>Cinna bolandieri</i> Bolanders, s woodreed 1B.2	Heavy equipment operations in wet areas and meadows.	Plant grows in riparian and wet meadows above 6000 feet. Elevation range of project is 1,500 to 3,500 feet. No expected impact.
<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated open pine forests. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Hulsea brevifolia</i> short-leaved hulsea CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Plant generally located in upper montane coniferous forests, usually above 5,000 feet and in forest openings. Elevation range of project is 1,500 to 3,500 feet. There are no impacts expected from project.
<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	Erosion from grading and soil disturbance.	Annual herb found in dry decomposed granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2)</b>
<i>Lewisia congdonii</i> Congdon's lewisia CNPS 1B.3	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Lomatium congdonii</i> Congdon's lomatium CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial herb associated with serpentine soils. <b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Mimulus filicaulis</i> slender-stemmed monkeyflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed, disturbed, thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>

<u>Scientific Name</u> <u>Common Name</u> <u>Status</u>	<u>Potential Impacts</u>	<u>Analysis</u>
<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	Erosion from grading and soil disturbance.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Horkelia parryi</i> Parry's horkelia CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial plant. No impacts expected. Occurs in open chaparral habitat in acidic soils at elevation 260-3,000 feet. No chaparral habitat in project area.
<i>Clarkia biloba ssp australis</i> Mariposa clarkia CNPS 1B.2	May be impacted by pile burning, soil compaction and herbicide use.	Annual herb associated chaparral, cismontane woodland. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Eriophyllum congdonii</i> Congdon's woolly sunflower CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Annual herb restricted to dry, south facing slopes in metamorphic rock outcroppings. Herbicide and other project activities not expected to occur in rock outcroppings. No expected impact.

## Biological Analysis of Nine Quad Search Centered around O'Neals Quads-Animals

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Agealaius tricolor</i> Tricolored blackbird Currently none	Loss of riparian habitat.	No impacts expected. Species uses riparian areas with cattails not present on project.
<i>Ambystoma californiense</i> California tiger salamander Federally and state threatened CA Fish and Game Species of Special Concern (DFG SSC)	Stream sedimentation.	No expected impact, species occurs in elevation less than 1,000 feet in vernal pool habitat. Project elevation is 1,500 to 3500 feet.
<i>Andrena macswaini</i> An andrenid bee Currently None	Habitat destruction of its host plant.	<i>Camissionia</i> an annual plant. <b>Plant survey and buffer zone establishment for <i>Camissionia</i> required to protect species (MM2).</b>
<i>Antrozous pallidus</i> pallid bat DFG SSC	Roost site disturbance.	Species prefers dry open habitat with large rocky areas for roosting. Large rocky areas will not be disturbed from project. No expected impact.
<i>Aquila chrysaetos</i> Golden eagle Currently none	Habitat loss to logging and development.	No impact expected. Prefers open terrain for hunting, secluded cliffs for cover. Project will maintain open terrain.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Buteo swainsoni</i> Swainson's hawk Federal none State threatened	Development and destruction of habitat.	No impact expected. Requires sheltered cliffs for cover, not in project area.
<i>Calicina mesaensis</i> Table Mountain harvestman Currently none	Development and destruction of habitat.	No expected impacts. Uses caves. Cave habitat will not be disturbed
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	Habitat destruction from fuel reduction and road building activities.	<b>Plant survey and buffer zone establishment for valley elderberry required to protect species (MM2).</b>
<i>Emys marmorata</i> western pond turtle DF SSC	Destruction of eggs in terrestrial nests, loss of riparian habitat.	Riparian habitat in project area will be protected (MM3). No expected impacts.
<i>Euderma maculatum</i> spotted bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.
<i>Eumops perotis californicus</i> western mastiff bat DFG SSC	Roost site disturbance.	Project not expected to impact species. Prefers open semi-arid habitats including woodlands and chaparral. Roosts in crevices in cliff face, high buildings, trees and tunnels.
<i>Falco mexicanus</i> Prairie falcon Currently none	Development and destruction of habitat.	No impact expected. Requires sheltered cliffs for cover, not in project area.
<i>Branchinecta mesovallensis</i> Midvalley fairy shrimp Currently none	Stream sedimentation and equipment use filling in pools.	No expected impact. Species occurs in elevation less than 1,000 feet in vernal pool habitat. Project elevation is 1,500 to 3500 feet.

<b>Scientific Name</b> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Hydroporus leechi</i> Leech's skyline diving beetle Currently None	Destruction of aquatic habitat.	Aquatic habitat in project area will be protected (MM3). No expected impacts.
<i>Lepidurus packardi</i> Vernal pool tadpole shrimp Federal endangered State none	Stream sedimentation and equipment use filling in pools.	No expected impact, species occurs in elevation less than 1,000 feet in vernal pool habitat. Project elevation range is 1,500 to 3,500 feet.
<i>Linderiella occidentalis</i> California linderiella Currently none	Stream sedimentation and equipment use filling in pools.	No expected impact. Species occurs in elevation less than 1,000 feet in vernal pool habitat. Project elevation range is 1,500 to 3,500 feet.
<i>Lytta molesta</i> Molestan blister beetle Currently none	Stream sedimentation and equipment use filling in pools.	No expected impact. Species occurs in elevation less than 1,000 feet in vernal pool habitat. Project elevation range is 1,500 to 3,500 feet.
<i>Rana boylei</i> foothill yellow-leg frog DFG SSC	Stream sedimentation.	Stream channel buffer zones of 30 feet (MM1) to be established. No impacts expected.
<i>Spea hammondi</i> western spadefoot DFG SSC	Vernal pool destruction.	No expected impact. Species located in low elevation, vernal pools in grassland. Habitat not in project area.

<b>Scientific Name</b> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Haliaeetus leucocephalus</i> bald eagle State endangered	Habitat loss to logging and development.	No impact expected. Requires large old growth trees for nesting, near large bodies of water. No large bodies of water near project area.
<i>Athens cunicularia</i> Burrowing owl Currently none	Uses borrows that could be damaged by vehicle traffic.	No impact expected. Owl resides in dry grassland or desert. Habitat not in project area.
<i>Taxidea taxus</i> American badger Currently none	Development.	No expected negative impact. Species prefers open habitat that project will maintain.

## Biological Analysis of Nine Quad Search Centered around O'Neals Quads-Plants

<i>Scientific Name</i> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Allium abramsii</i> Abram's onion CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	There are no impacts expected. The plant is known to grow at elevations above 6000 feet. Habitat does not occur on the project area.
<i>Calyptridium pulchellum</i> Mariposa pussypaws Federal threatened, CNPS 1B.1	May be impacted by pile burning, soil compaction or herbicide use.	Plant found on exposed sites associated with granitic domes or decomposing granite. Project activities unlikely to occur on these sites. No impact expected.
<i>Carpenteria californica</i> tree-anemone CNPS 1B.2	Erosion from grading and soil disturbance.	<b>Plant survey and buffer zone establishment required to protect species (MM2).</b>
<i>Castilleja californica</i> Succulent owls-clover CNPS 1B.2	May be impacted by pile burning, soil compaction and herbicide use.	Project not expected to impact species. Species associated with vernal pools in valley and foothill grassland. Habitat type not on project area.
<i>Collomia rawsoniana</i> Rawson's flaming trumpet CNPS 1B.2	Erosion from grading, soil disturbance and herbicide use.	Plant found in riparian zones. Riparian habitat will not be disturbed (MM3). There are no impacts expected from project.

<b>Scientific Name Common Name Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Eryngium spinosepalum</i> Spiny-sepaled button-celery	May be impacted by pile burning, soil compaction and herbicide use.	Perennial herb associated with vernal pools and riparian habitat. Riparian habitat will not be disturbed (MM3). There are no impacts expected from project.
<i>Gratiola heterosepaia</i> Boggs Lake hedge-hyssop	Destruction of aquatic habitat.	Plant found in aquatic habitat. Aquatic habitat protected (MM3). No impacts expected from this project.
<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	Erosion from grading and soil disturbance.	Annual herbs found in dry decomposed granitic soils. <b>Plant survey and buffer zone establishment required when conducting project activities within life span. (MM2).</b>
<i>Lupinus citrinus var. citrinus</i> orange lupine CNPS 1B.2	May be impacted by pile burning, soil compaction or herbicide use.	Perennial plant associated with chaparral, cismontane woodland in rocky decomposed granitic outcrops. <b>Plant survey and buffer zone establishment required (MM2).</b>
<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	Erosion from grading and soil disturbance.	Annual plant found on exposed disturbed thin granitic soils. <b>Survey and buffer zone establishment required when conducting project activities within life span (MM2).</b>
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass CNPS 1B.1	May be impacted by pile burning, soil compaction and herbicide use.	Species associated with vernal pools. Vernal pools not in project area.

<b>Scientific Name</b> <b>Common Name</b> <b>Status</b>	<b>Potential Impacts</b>	<b>Analysis</b>
<i>Pseudobia bahiifolia</i> Hartweg's golden sunburst CNPS 1B.1	Maybe impacted by pile burning, development, soil compaction and herbicide use.	Annual herb associated with lower elevation oak woodland habitat. Project activities to occur at higher elevations than this species grows. No expected impacts.
<i>Cinna bolandieri</i> Bolanders, s woodreed 1B.2	Heavy equipment operations in wet areas and meadows.	Plant grows in riparian and wet meadows above 6000 feet. No expected impact. Project elevation range is 1,500 to 3,500 feet.

**Appendix C**  
**List of Plants Required for Survey**

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b>Scientific Name Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	At elevations less 3,000 feet, survey for elderberry plants <i>Sambucus</i> species and follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Cryptantha mariposae</i> Mariposa cryptantha CNPS 1B.3	When conducting project activities within life span (January thru June), locate areas of fuel break with serpentine soils and survey for plant during flowering period (April and May). Follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for plant during flowering period (March thru May). Follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	When conducting project activities within life span (January thru September), survey for genus <i>Clarkia</i> during flowering period (May thru August). Follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Clarkia biloba ssp australis</i> Mariposa clarkia CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Clarkia</i> during flowering period (May thru July). Follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	When conducting project activities within life span (January thru June), survey for species during flowering period (April thru May). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b><i>Scientific Name</i> Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Mimulus filicaulis</i> slender-stemmed monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Stumpfield Road Fuel Break Stumpfield Mountain Quad	<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	At elevations less 3,000 feet, surveys for elderberry plants <i>Sambucus</i> species and follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for plant during flowering period (March thru May). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Clarkia biloba ssp australis</i> Mariposa clarkia CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Clarkia</i> during flowering period (April thru May). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b><i>Scientific Name</i> Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Clarkia lingulata</i> Merced Clarkia CNPS 1B.1	When conducting project activities within life span (January thru September), survey for genus <i>Clarkia</i> during flowering period (May thru August). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	When conducting project activities within life span (January thru September), survey for genus <i>Clarkia</i> during flowering period (May thru August). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Cryptantha mariposae</i> Mariposa cryptantha CNPS 1B.3	When conducting project activities within life span (January thru June), locate areas of fuel break with serpentine soils and survey for plant during flowering period (April and May). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	When conducting project activities within life span (January thru June), survey for species during flowering period (April thru May). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Lomatium congdonii</i> Congdon's lomatium CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for plant during flowering period (April thru June). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b>Scientific Name Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Lupinus citrinus</i> <i>var. deflexus</i> Mariposa lupine CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for genus <i>Lupinus</i> during flowering period (April thru June). Follow MM2 guidelines for all <i>Lupinus</i> species.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Lupinus spectabilis</i> shaggyhair lupine CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for genus <i>Lupinus</i> during flowering period (April thru June). Follow MM2 guidelines for all <i>Lupinus</i> species
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Mimulus filicaulis</i> slender-stemmed monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Lush Meadows Fuel Break Stumpfield Mountain Quad Buckingham Mountain Quad	<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b>Scientific Name Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Andrena macswaini</i> An andrenid bee Currently None	When conducting project activities within life span (January through June), survey for genus <i>Camissionia</i> during flowering period (April and May). Follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	At elevations less 3,000 feet, surveys for elderberry plants <i>Sambucus</i> species and follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for plant during flowering period (March thru May). Follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Carpenteria californica</i> tree-anemone CNPS 1B.2	Survey for plant prior to project activities. Follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	When conducting project activities within life span (January thru September), survey for genus <i>Clarkia</i> during flowering period (May thru August). Follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	When conducting project activities within life span (January thru June), survey for species during flowering period (April thru May). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b>Scientific Name Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Lupinus citrinus</i> <i>var. citrinus</i> orange lupine CNPS 1B.2	Locate areas of fuel break with decomposed granite rock outcroppings and survey for genus <i>Lupinus</i> during flowering period (April thru May). Follow MM2 guidelines for all <i>Lupinus</i> species.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Lupinus citrinus</i> <i>var. deflexus</i> Mariposa lupine CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for genus <i>Lupinus</i> during flowering period (April thru May). Follow MM2 guidelines for all <i>Lupinus</i> species.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Road 620 Ahwahnee Quad Fish Camp Quad	<i>Mimulus filicaulis</i> slender-stemmed monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b>Scientific Name Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle Federally threatened	At elevations less 3,000 feet, surveys for elderberry plants <i>Sambucus</i> species and follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Andrena macswaini</i> An andrenid bee Currently None	When conducting project activities within life span (January through June), survey for genus <i>Camissionia</i> during flowering period (April and May). Follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Balsamorhiza macrolepis</i> Big-scale balsamroot CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for plant during flowering period. (March thru May). Follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Carpenteria californica</i> tree-anemone CNPS 1B.2	Survey for plant prior to project activities. Follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Clarkia australis</i> Small's southern clarkia CNPS 1B.2	When conducting project activities within life span (January thru September), survey for genus <i>Clarkia</i> during flowering period (May thru August). Follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Leptosiphon serrulatus</i> Madera leptosiphon CNPS 1B.2	When conducting project activities within life span (January thru June), survey for species during flowering period (April thru May). Follow MM2 guidelines.

<b>Fuel Break Name Quadrangle(s) where Fuel Break is located</b>	<b>Scientific Name Common Name Status</b>	<b>Survey and Avoidance Strategy</b>
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Lupinus citrinus</i> <i>var. deflexus</i> Mariposa lupine CNPS 1B.2	Locate areas of fuel break with serpentine soils and survey for genus <i>Lupinus</i> during flowering period (April thru June). Follow MM2 guidelines for all <i>Lupinus</i> species.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Mimulus gracilipes</i> slender-stalked monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.
Quartz Mountain O' Neal' Quad Ahwahnee Quad	<i>Mimulus pulchellus</i> Yellow-lip pansy monkeyflower CNPS 1B.2	When conducting project activities within life span (January thru August), survey for genus <i>Mimulus</i> during flowering period (June thru August). Follow MM2 guidelines.

## LIST OF PREPARERS OF THIS DOCUMENT

**Guy Anderson** Area Forester. Cal Fire Madera-Mariposa Unit  
Cal Fire Madera-Mariposa Unit, (209) 966-3622

**Leon J Manich** RPF #1970, California Reforestation Inc.  
22230a So Colorado River Drive, Sonora, CA 95370; 209-586-2115

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THP greenhouse gas emission worksheet

Lush Meadows, Road 620, Quartz Mountain, and Stumpfield Shaded Fuel Break Exemptions.

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Threatened, endangered and sensitive plant on the Sierra National Forest, Sierra National Forest Internal Publication