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**County of Fresno**

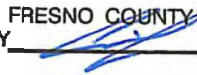
DEPARTMENT OF PUBLIC WORKS AND PLANNING  
STEVEN E. WHITE, DIRECTOR

**NOTICE OF EXEMPTION**

- TO:  Office of Planning and Research  
1400 Tenth Street, Room 121  
Sacramento, CA 95814
- County Clerk, County of Fresno  
2221 Kern Street  
Fresno, CA 93721

**FILED**

MAY 22 2026 TIME 11:21am

FRESNO COUNTY CLERK  
BY  DEPUTY

For County Clerk's Stamp

**FROM:** Fresno County Department of Public Works and Planning  
Development Services and Capital Projects Division  
2220 Tulare Street (corner of Tulare and "M") Suite "A", Fresno, CA 93721

**PROJECT TITLE:** Environmental Review No. 8894 – California Climate Investments Hazardous Tree Removal

**PROJECT APPLICANT/SPONSOR:** Fresno County Water and Natural Resources Division

**PROJECT LOCATION – COUNTY:** The project site is located in Eastern Fresno County.

**DESCRIPTION OF PROJECT:** The proposed project will consist of the removal of hazardous dead or dying trees along Jose Basin Road and Italian Bar Road that pose a public hazard and threaten safe ingress and egress. The project is approximately 15 miles long and includes a project boundary of approximately 524.70 acres. Hazard trees will be assessed and marked by, or under the direct supervision of, a Registered Professional Forester (RPF) for removal. RPFs will also run a query through the California Natural Diversity Database for the project area for rare plants and animals, if any. Biological and Botanical surveys for these species will be done in concurrence with project layout, and will be flagged and avoided, if applicable. The RPFs, with CAL FIRE's approval, will request a records search for the known archaeological sites within and around the project area, and flag sites to be avoided, if applicable. Watercourse and wet areas will be flagged and buffered per California Forest Practice Rules with equipment limitation and exclusion zones as appropriate. When working on U.S. Forest Service land, the RPFs will work with District employees to ensure compliance with federal regulations. The project footprint includes U.S. Forest Service, private, and utilities parcels.

**NAME OF PUBLIC AGENCY APPROVING PROJECT:** Fresno County Board of Supervisors

**NAME OF PERSON OR AGENCY CARRYING OUT PROJECT:** Fresno County Public Works and Planning, Water and Natural Resources

**EXEMPT STATUS:** Statutory Exemption – 15269(c) Emergency Projects; Categorical Exemption - Section 15301(h) Existing Facilities, Maintenance of existing landscaping, native growth, and water supply reservoirs.

**REASONS WHY THE PROJECT IS EXEMPT:** The project is subject to a statutory exemption pursuant to CEQA Guidelines Section 15269(c) (Emergency Projects) as the proposed activities involve the removal of hazardous dead and dying trees that pose a threat to public health, safety, and welfare along existing roadways used for public access and emergency ingress and egress. The project is intended to reduce wildfire hazards and minimize risks associated with tree failure within the project area.

The project is also categorically exempt pursuant to CEQA Guidelines Section 15301(h) (Existing Facilities), which exempts the maintenance of existing landscaping, native growth, and water supply

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reservoirs. The proposed work consists of vegetation management and removal of hazardous trees within existing disturbed roadway corridors and does not involve the expansion of existing facilities or uses.

Further, the project includes measures to avoid impacts to biological, cultural, and water resources through preconstruction review, resource flagging, and establishment of avoidance buffers, as applicable. The project will not negatively affect scenic resources or wetland habitats (USFW), nor will it expose people or the environment to hazardous waste materials. As such, no significant adverse environmental or cumulative impacts were identified.

**LEAD AGENCY**

**CONTACT PERSON:** Alyce Alvarez

**AREA CODE/TELEPHONE:** (559) 600-9669

<b>If filed by the applicant:</b>	
1.	Attach certified document of exemption finding.
2.	Has a Notice of Exemption been filed by the public agency approving the project?
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No








Signature:   
Tawanda Mtunga, Principal Planner

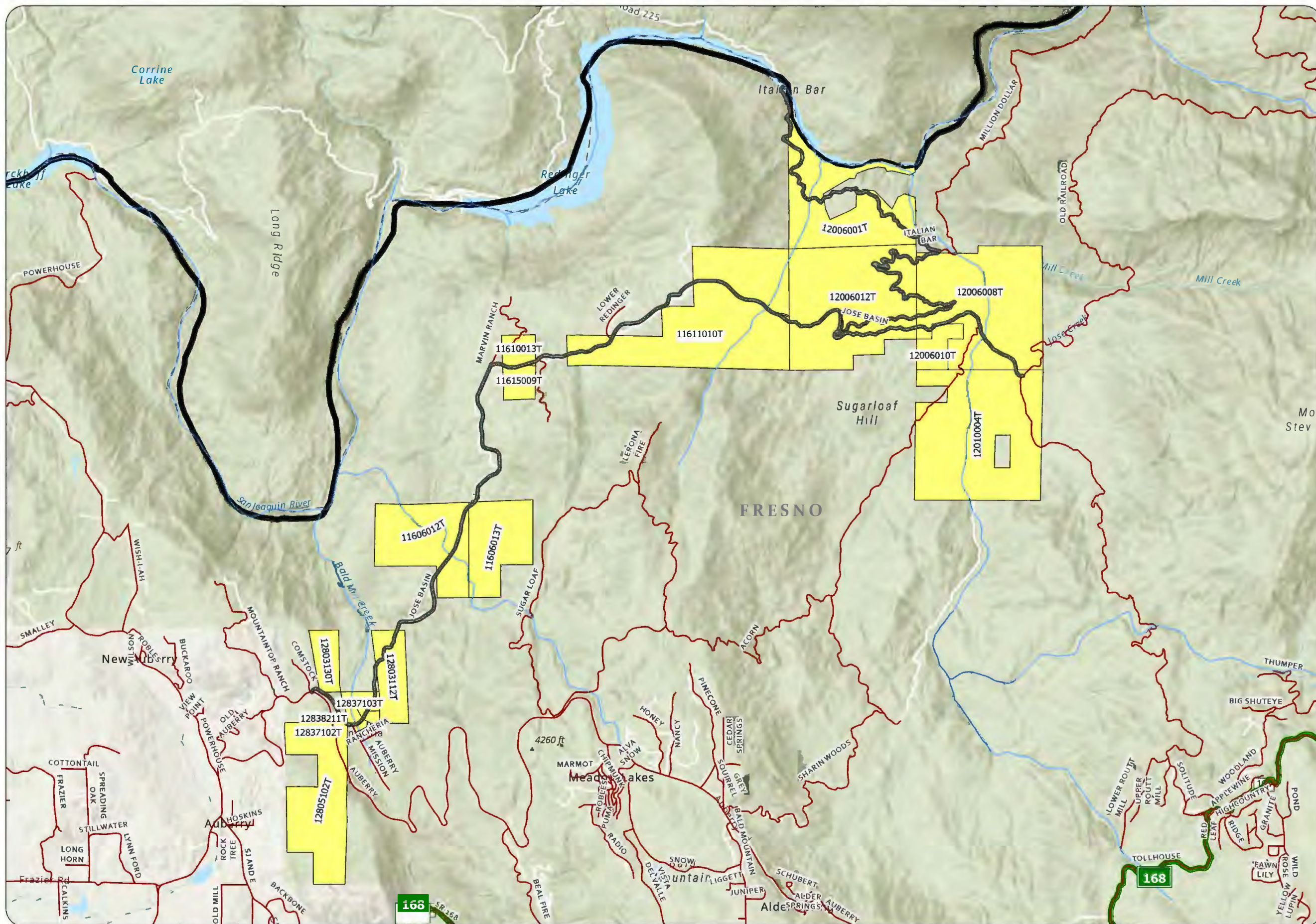
Date: 5/15/2020

Signed by Lead Agency    Date received for filing at OPR: \_\_\_\_\_  
 Signed by Applicant

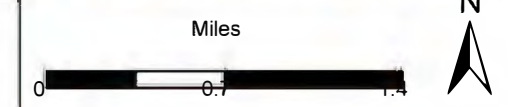


Legend

-  Waterways
-  Street
-  Highway
-  FRESNO COUNTY
-  Forest Service Parcels
-  County Maintained Roads
-  Jose Basin and Italian Bar Roads



# U.S. FOREST SERVICE PARCELS ALONG JOSE BASIN & ITALIAN BAR ROADS



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# **Decision Memo**

## **The Italian Project**

### **USDA Forest Service**

### **High Sierra Ranger District**

### **Fresno County, California**

## **Background**

Drought, concurrent insect mortality, warmer winters, smaller snowpacks resulted in high levels of tree mortality across more than 300,000 acres of the Sierra National Forest, including the Italian Project (Project) area. Drought and insect mortality have affected 90 percent of ponderosa pine, 70 percent of sugar pine, and 40 percent of white fir trees, mostly in medium and large tree sizes. In addition, the 2013 Musick fire caused tree mortality adjacent to communities and critical electrical generation and communication infrastructure concerns. Then the subsequent 2020 Creek Fire affected the entire Project area causing close to 100% mortality and leaving heavy fuel loading.

In May 2019, Sierra National Forest Supervisor Dean Gould, signed a decision notice authorizing the Musick Fuels Reduction and Landscape Restoration Project (Musick Project) which includes the actions and footprint of the Project. This Project contains only the fuels reduction, site prep and reforestation components of the Musick Project. The Musick Project project record is incorporated by reference into this document where relevant and the associated effects analysis with additional consideration of the changed environmental baseline caused by the Creek Fire serve as the detailed analysis which will be summarized in this decision memo.

The proposed activities were developed in collaboration with adjacent landowners and CAL FIRE during the development of the Musick Project. Strategic fuels treatments have been designed to complement proposed fuels treatments on adjacent private land. Fuel breaks and strategic fuels reduction treatments have been based on effectiveness and not land ownership.

The Project area is within a wildland-urban interface adjacent to the communities of Shaver Lake, Jose Basin and Pine Ridge, California, and to the east of the San Joaquin River.

The purpose of the Project is to:

- provide better fire protection for communities, firefighters, and residents
- increase the resilience of the few to little surviving conifer forests by restoration that accelerates the development of seedlings and saplings through natural regeneration and plantings
- reduce long-term fuel loading, stabilize existing and future carbon stored in trees, minimize future fire severity, and increase ability to control fires where necessary to enhance public, community and key infrastructure safety.



More details on the purpose of the Project and the departure of the area from desired conditions can be found in Appendix A.

## Decision

I have decided to implement the actions described below including the design criteria including in Appendix B. The Project will accomplish the project's primary purpose for critically needed fuels reduction and forest health treatments within the heavily utilized wildland urban interface adjacent to the communities of Shaver Lake, Big Creek, Jose Basin and Camp Sierra, California, and to the east of the San Joaquin River.

The actions are responsive to input received during tribal consultation and public scoping. Entities expressing concerns ranged from the high risk of wildfire to life, property and infrastructure, the project's effects on black oak groves, and harmful impacts roads may cause to the landscape and wildlife that depends on connected habitat and maintaining high water quality.

The most important objective to me is to reduce the risk of uncharacteristically high intensity wildfire, thus protecting human life and property and important natural and cultural resources, while improving forest health and resilience over the long term. The risk of large, high intensity wildfire has become painfully apparent over the past few years. Large wildfires regularly occur on or adjacent to the Sierra National Forest, and there is ample evidence of the adverse resource impacts caused by large high-intensity fires like the Ferguson Fire, and others that have burned over the last half century. Wildland fire suppression crews are experiencing more extreme fire behavior in places like the Musick Project area where forest fuels have accumulated, and prevent firefighter safety and fire operations control. The fuel reduction activities are designed to moderate fire behavior in treated stands, reduce the rate and extent of spread of high intensity fire, improve the resiliency of forested stands, and result in faster, safer, and more efficient wildfire suppression efforts.

The Project includes activities that meet the purpose and need for action. The Project activities are presented below, ordered by the need components stated above.

### Fuel Breaks

The potential for future wildfires within the Project area necessitates appropriate actions to protect values at risk. It is proposed to:

- Create four Category 1 fuel breaks to support suppression forces and aid in the application of prescribed fire
- Create 11 Category 2 fuel breaks that would be maintained at a lower frequency outside of the Jose Basin Critical Aquatic Refuge. Category 2 fuel breaks would be constructed as needed and maintained as needed.
- Once created, Category 1 and 2 fuel breaks within the Jose Basin Critical Aquatic Refuge would be maintained at the desired conditions.
- Fuel breaks would be maintained to promote the desired low grasses and forbs. In some locations, shaded fuel breaks would be created. Category 1 fuel breaks would be maintained to a standard that provides for meeting fire suppression and prescribed fire needs during a 10-year period. Category 2 fuel breaks would be maintained for a minimum of five years. Details include:

- ◆ Fuel breaks would be constructed 200 feet on either side of the pre-identified center line of the ridge or road, which totals 400 feet in total width.
- ◆ All dead trees and brush would be cut down and removed from the fuel break through either hand or mechanical means. Piles would be burned or decked in a strategic fashion.
- ◆ Shaded fuel breaks may be created within and along sections of fuel breaks by controlling vegetation removal. Healthy dominant trees spaced at 20 to 24 feet apart could be left and pruned from below to about 15 feet to eliminate sustained crown fire potential and thus, increase firefighter safety.
- ◆ Fuel breaks created along areas previously dominated by conifers would be treated to encourage a shaded fuel break condition within 25 to 35 years.
- ◆ Maintenance of Category 1 fuel breaks includes the use of glyphosate or triclopyr herbicide. Herbicide applications targets shrub species to reduce brush.
- ◆ A 40-foot wide dozer line would be created roughly down the middle of each fuel break and would be maintained regularly.
- ◆ Fuel breaks would be maintained using a combination of mechanical, hand, and chemical treatments. Fuel loads would be less than 10 tons per acre represented by the appropriate fuel model.
- ◆ Areas where fuel breaks intersect with roads would have sufficient vegetation retained to obscure the visibility of the fuel break and discourage off-highway vehicle use.
- ◆ Appropriate forest plan standards and guidelines and project design criteria would be implemented to protect critical stream habitat where fuel breaks are proposed to intersect with streams.

### **Safety Zones**

Areas conducive for safety zones would be created in strategic locations that would facilitate safe gathering and deployment of fire suppression forces. The following describes the desired characteristics of safety zone areas:

- **Fuels:** the proposed areas would have a fuels condition that can be efficiently converted from their maintained static state into a useful safety zone utilizing a bulldozer in the event of a wildfire. Heavy brush, dead trees, thickets of undergrowth, and thick stands of trees should be removed and maintained. Short grass and larger green, live trees void of ladder fuels and spaced at about 75-foot minimums would be acceptable.
- **Size:** to serve as a safety zone, the area must be four times the width of the expected flame length as would be produced by burning adjacent fuels. Safety zones should provide some level of safety to firefighters that otherwise may not be available. Assessments would be made at the time of use.
- **Location:** As much as possible, safety zones would be created within the 400-foot width of fuel breaks. Along fuel breaks, safety zones not associated with roads would be constructed at one-quarter mile distance apart along the linear span of the fuel break. Safety zones along fuel breaks where poor road access or steep slopes makes escape difficult may need to be spaced closer together to ensure that personnel on foot can access them rapidly if needed during suppression efforts.

### **Tactically Placed Staging Areas and Strategically Placed Turn-Out Areas**

Tactically placed staging areas and strategically placed vehicle turn-out areas would be constructed along strategic fire suppression road corridors to ensure safe access and egress of



landowners, fire personnel and equipment in the event of a wildfire. Identified areas would be modified and/or improved as an extension of the pre-existing roadbed from which the staging area can be extended. The size of these areas would depend on the options that the site provides. Vegetation may be removed including trees and brush to widen areas for use. All dead trees and brush would be cut and disposed of by hand or by mechanical means. Piles may be burned, or excess brush and debris may be decked for later disposal or transported to a disposal site. These areas would be constructed as improvements to naturally advantageous openings along the roadsides or previously existing intersections.

## **Reforestation**

Reforestation treatments are proposed for high tree mortality areas consistent with natural range of variability for forest structure and composition and the fuels strategy to accelerate the growth of existing conifer saplings, especially pine; encourage natural regeneration of conifers; and reduce fuel loads during site preparation and fuels activities to allow for early (5 to 10 years) application of prescribed fire.

In areas where competing vegetation is deemed problematic to the establishment of planted trees, herbicide may be utilized (glyphosate or triclopyr, and R-11; borax; aminopyralid), to control brush species. Target species for treatment include deer brush, white thorn, green leaf manzanita, and bear clover, among others. An Environmental Protection Agency registered borax fungicide would be applied to stumps of cut trees greater than 15 inches diameter at breast height within 200 feet on both sides of, Jose Basin Road, and main collector roads to prevent the spread of annosus root disease that could result in hazard trees in public use areas.

Reforestation treatments would include the planting of appropriate nursery grown conifer seedlings in the project area, or the culturing of naturally established seedlings and saplings. Reforestation would follow one of four sets of treatments (pathways – see description on page 21) that would result in achieving future forest conditions consistent with the natural range of variability.

Reforestation treatments would adopt strategies outlined in the Dinkey Forest Landscape Restoration Project Reforestation Framework document, mainly by:

- Effective site preparation that reduces fuel loads
- Spot planting, two to three conifers per spot; the spots would be triangularly spaced at 15 feet by 15 feet by 15 feet or greater to reduce the need for later pre-commercial thinning
- Spacing planted trees consistent with creating landscape heterogeneity and strategic fuel treatments
- Pruning lower branches of sapling-size trees along strategic roads and fuel breaks
- Effective control of competing vegetation through the use of hand and chemical methods; treatments should reduce shrub competition to less than 20 percent on moderate to high sites and less than 10 percent on low sites
- Early reintroduction of fire within planted areas

## **Potential Treatment Methods**

The following describes the potential treatments that can be used to implement the proposed action. Any one method may be used in combination with other methods to achieve the desired results.



### **Mastication**

This treatment involves the use of a ground based, tracked excavator or tractor to shred vegetation. Masticated material could be brush, dead trees, excess fuel loading, or other material that is either live or dead. Equipment includes both drum and disc type shredders. Masticated material would be placed closer to the ground. Masticated material can also be tilled as a follow-up treatment.

### **Thin and Machine Pile**

This treatment involves the use of chainsaws and manual labor or use of a tracked excavator to cut material. Cut material would then be piled for burning. Piles will vary in size, but generally will be small enough so that adverse soils impacts would not occur. Equipment used for piling includes excavators with “thumb buckets” and tractors equipped with “brush rakes”. The width of the brush rake and bucket varies depending on the size of the equipment. This equipment can operate on slopes up to 45 percent.

### **Thin, Lop and Scatter**

This treatment involves the use of chainsaws and manual labor. Cut material would be lopped, where branches are removed and boles cut to a specified size, and then scattered throughout the treated area.

### **Feller-Buncher**

This method uses ground based tracked equipment to cut trees (not brush). The feller-buncher is analogous to a ‘hot saw,’ which uses a high velocity cutting head to hold and cut material from the stump. Cut material would be placed so that it could be yarded with either a skidder or helicopter, depending on the choice of yarding system. Material would be yarded to an approved landing. This method can also be used to cut trees and pile them for burning.

### **Tilling**

This method disrupts and chops up vegetation along with its root system. It can be accomplished with a tractor and brush rakes, a forest cultivator pulled by a tractor, a winged sub-soiler, or a sub-soiling masticator. This equipment has the capacity to penetrate the soil from 8 to 18 inches and can operate on slopes up to 35 percent. Work is performed on the contour to minimize loss of soil due to erosion.

### **Chainsaw Thin (Hand Cut)**

This method involves the use of chainsaws and other manual labor equipment to cut material. Generally, this would be used when trees, brush, or slash are too large for feller-buncher cutting (over 24 inches in diameter), or when slopes are too steep for ground-based machinery. This method may also be used on sensitive soils or in other areas where equipment use is not recommended due to resource concerns.

### **Machine and Hand Maintenance**

This treatment is proposed for fuel breaks creation and maintenance and includes the use of both tracked machines and hand cutting treatments that would be used to remove, pile, or push material from proposed fuel breaks and safety zones.



### **Prescribed Burning**

Treatments include underburning, pile burning and broadcast burning. Prescribed fire removes existing vegetation via the planned use of fire over part or all of a designated area. Such burning is done under a “prescription”, or a set of limits on burning conditions including maximum and minimum temperature, humidity, wind, and fuel moisture in order to meet a set of pre-determined objectives.

### **Hand Release (Hand Grubbing)**

This method includes clearing or scraping vegetation from an area using hand tools such as a hoe or McLeod tool. Light vegetation is cut or chopped at the ground surface and root boles of sprouting vegetation are often dug out. This differs from fire line construction in that line construction clears a path of all vegetation. Grubbing is intended to clear only re-sprouting brush and not grass.

### **Reforestation**

This treatment includes the planting of appropriate nursery grown conifer seedlings in the project area, or the culturing of naturally established seedlings and saplings. Reforestation would follow one of 4 sets of treatments (pathways) that would result in achieving future forest conditions consistent with the natural range of variability.

- Pathway 1 – Site preparation, planting, release, and early reintroduction of fire
  - ◆ Treatments for this pathway rely on mechanical or chemical site preparation, and planting, and subsequent release of planted seedlings from competing shrubs and grasses. Release can be by hand or chemical treatments. This pathway would be employed in areas where mortality is high, and in areas previously dominated by conifers. The objective is to increase conifer dominance as quickly as possible and prepare the landscape to allow early reintroduction of fire and to support fire suppression strategies.
- Pathway 2 – Prescribed fire with subsequent reforestation
  - ◆ This pathway relies on prescribed fire to reset habitat conditions, consume fuels and make areas suitable and safe for planting. This pathway can also be employed in areas where tree decay makes use of hand and mechanical tree removal unsafe. Some areas originally identified for pathway 1 treatments can be transitioned to pathway 2. After prescribed fire, planted areas would be released from competing vegetation. Areas dominated by shrubs that develop only from seed would be controlled using hand methods. Areas dominated by sprouting species would be controlled by herbicides employed to prepare the site for planting.
- Pathway 3 – Improvement of natural seedlings and surviving conifer saplings
  - ◆ In areas where seedlings and saplings of desirable species are still present (black oaks, sugar pine, ponderosa pine), existing seedlings and saplings would be thinned and 80 to 90 percent of shrub competition would be removed. Existing seedlings and saplings would be spaced consistent with achieving the natural range of variability. Pathway 3 can be used in combination with other pathways.
- Pathway 4 – Mechanical site preparation and planting outside of strategic fire areas
  - ◆ Same as pathway 1 only this method would be applied outside of strategic fire areas. Pathway 4 connects remaining wildlife habitat to future habitat planted in strategic fire areas. The pathway would support and enhance work done in strategic areas and resilience treatments in wildlife habitat.



## **Herbicide Application (Chemical Treatments)**

This treatment involves the use of prescribed herbicides for reforestation, site prep, control of competing vegetation, and maintenance of fuel breaks, safety zones, staging areas, and road turnouts. Herbicides are also proposed to eradicate and eliminate the spread of non-native invasive plant species.

Areas selected for foliar spray would be treated with glyphosate herbicide (Accord® or similar herbicide) at a rate of 3 percent to 5 percent with wetting agent (R11® or non-ionic surfactant) at 1 percent in 94 to 96 percent water. Dye would be added to the herbicide solution for the purpose of identifying treated foliage. Mixtures would consist of up to between 2-6 pounds acid equivalent per acre.

This type of application can be used to treat brush species like manzanita, bear clover and Ceanothus species in early- to mid-summer and invasive species such as yellow star thistle in late spring during bloom. Extensive re-sprouting is generally eliminated with this type of treatment. Backpack sprayers would be used to treat targeted vegetation. This type of hand application is considered a direct spray, in that the herbicide would be applied only to the target species. The backpack sprayer can use either single or multiple tips (boom type) which can spray herbicide for a width of several inches to 10 feet. This method of applying chemicals is not limited by slope steepness, but its use is limited to brush height of 6 feet or less.

Areas selected for cut stump treatment would be treated with triclopyr herbicide (Garlon 3A or similar herbicide) at a rate of 50 percent to 100 percent herbicide. Mixtures would consist of up to between 1-2 pounds acid equivalent per acre. Dye would be added to the herbicide solution for the purpose of identifying treated stumps. Cut stump treatments eliminate or greatly reduce sprouting from the stump or lateral roots of species such as interior live oak or invasive species such as French broom.

A cut stump application would be done on plants taller than 6 feet. The application is accomplished by first cutting the stump and then spraying the cut surface with triclopyr or directing the spray to the cambium area of larger stumps. The application should be done as soon after cutting as possible, but no longer than 30 minutes after cutting the stump. Application is done with a backpack sprayer with a single nozzle or spray bottle.

Treatment application of Aminopyralid can be used for the control of invasive plant and shrub species. It is registered by the United States Environmental Protection Agency. Aminopyralid has been judged as a reduced risk herbicide (SERA 2007). Aminopyralid would be applied through backpack sprayers in a foliar application. An application rate at 0.07 acid equivalents per acre or about 5 ounces formulation per acre would be used.

## **Yarding Systems for Transporting Cut Material**

The following systems have potential for use:

- **Skidding:** This is a yarding system for cut material that would be used on slopes that are less than 40 percent, and on areas with sensitive soils, including shallow A-horizons, shallow depth to bedrock, and high soil erosion hazard.
- **Tethered logging:** This includes the use of ground-based feller-bunchers and skidders tethered by cable to an anchor. Used on slopes over 40 percent.
- **High lead (Jammer):** This is a yarding system with a cable and grapple that suspends one end of a log. Proposed for use on slopes over 40 percent adjacent to roads.



**Proposed Action Summary** (treatments overlap the same acres and are not additive)

Activity	Acres
Fuel breaks	1,060
Mechanical thinning	2,066
Prescribed Fire	2,975
Reforestation	2,975
Herbicide Application	2,975

(Total treatment acres are limited to 2,975 acres.)

This action is categorically excluded from documentation in an environmental impact statement (EIS) or an environmental assessment (EA). The applicable category of actions is identified in agency procedures as the Wildfire Resilience categorial exclusion (Section 605 of the Healthy Forest Restoration Act (16 USC 6591(d)) and Post-fire rehabilitation activities, not to exceed 4,200 acres (such as tree planting), (36 CFR 220.6 €(11)). These categories of actions are applicable for the reasons explained in the paragraphs below.

A hazardous fuels reduction project that may be categorically excluded under this authority is a project that is designed to maximize the retention of old-growth and large trees, to the extent that the trees promote stands that are resilient to insects and disease, and reduce the risk or extent of, or increase the resilience to, wildfires (HFRA, Sections 605(b)(1)(A)). As explained in above, the Project was designed to (page 1 above – purposes of the Project):

- *increase the resilience of the few to little surviving conifer forests* by restoration that accelerates the development of seedlings and saplings through natural regeneration and plantings
- reduce long-term fuel loading, stabilize existing and future carbon stored in trees, minimize future fire severity, and increase ability to control fires where necessary to enhance public, community and key infrastructure safety.

The Project will maximize retention of old-growth and large trees by increasing forest resilience where forests still exist, not removing any living old-growth or large trees and working to reduce future risk of wildfires which would jeopardize existing old-growth or large trees remaining by reducing fuel loads that result in uncharacteristic fire behavior and create fuel breaks that allow more effective uncharacteristic wildfire suppression.

Utilization of this category has additional requirements:

- Prioritized in the wildland-urban interface (WUI); (HFRA, Sections 605(c)(2)(A) & (B)) – The Project area is fully within the WUI and therefore meets this criterion.
- Projects carried out under this authority may not be implemented in any of the following areas:



- a component of the National Wilderness Preservation System;
  - any Federal land on which, by Act of Congress or Presidential proclamation, the removal of vegetation is restricted or prohibited;
  - a congressionally designated wilderness study area; or
  - an area in which activities... would be inconsistent with the applicable land and resource management plan. (HFRA, Sections 605(d)(1) - (4)) – The Project area is not within any of these sensitive areas and is consistent with the Forest Plan therefore the Project meets these criteria
- project under this authority must carry out a forest restoration treatment that:
    - maximizes the retention of old-growth and large trees, as appropriate for the forest type, to the extent that the trees promote stands that are resilient to insects and disease, and reduce the risk or extent of, or increase the resilience to, wildfires;
    - considers the best available scientific information to maintain or restore the ecological integrity, including maintaining or restoring structure, function, composition, and connectivity; and
    - is developed and implemented through a collaborative process that—
      - includes multiple interested persons representing diverse interests; and
      - is transparent and nonexclusive; (HFRA, Sections 605(b)(1)(A) - (C)).

The Project maximizes the retention of old-growth and large trees as discussed previously; the analysis related to this decision considered the best available scientific information (See references throughout the Musick Project EA); was developed through a collaborative process (see public involvement section) which was inclusive and transparent. The Project therefore meets the above criterion.

- Projects carried out under this authority are subject to the following size limitation on the number of acres treated may not exceed 3000 acres. (HFRA, Section 605(c)(1)) – The maximum treatment acre footprint of the project is 2,975 acres therefore the Project meets this criterion for using the CE category.
- Projects carried out under this authority are subject to the following limitations relating to roads:
  - A project . . . shall not include the establishment of permanent roads. (HFRA, Section 605(c)(3)) – This Project will not establish any permanent roads and therefore meets this criterion for the CE category.
- All projects and activities carried out under this authority:



- shall apply the extraordinary circumstances procedures under section 220.6 of title 36, code of Federal regulations (or successor regulations) when using the categorical exclusion under this section. (HFRA, Section 605 (c)(4))
- shall be consistent with the land and resource management plans...” (HFRA, Section 605(e))

The Project findings of no extraordinary circumstances can be found following this explanation of how the category is being met and the design criteria were developed to ensure compliance with the Forest Plan so the Project meets this CE category criterion.

- For projects and actions carried out under this authority: The Secretary shall conduct public notice and scoping for any project or action. (HFRA, Section 605(f)) – the Project was public noticed and scoped under analysis as the Musick Project (as described in the Public Involvement Section) and therefore meets the requirements of this CE category criterion.

I find that there are no extraordinary circumstances that would warrant further analysis and documentation in an EA or EIS. I considered the analysis in the Musick Project environmental assessment as it related to the actions which are part of this decision. I asked forest specialists to review the analysis in light of the changed conditions related to the Creek Fire in this footprint. I took into account resource conditions identified in agency procedures that should be considered in determining whether extraordinary circumstances might exist:

- ♦ Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species – Fisher is the only federally listed endangered or threatened terrestrial wildlife within the Project area. Post Creek Fire re-consultation concluded the following. It is assumed that only habitat within the fuelbreaks will be altered. Other treatments should retain suitability. This Project was consulted on in Batch I, 2020 and after discussions with the USFWS it received a LAA determination due to LOPs being implemented only around known dens (in den buffers) and not in all denning habitat. Since then, the Creek Fire has drastically reduced the amount of suitable, potential denning and high quality fisher habitat within the Project and treatment area. Treatments types and the design criteria remain the same within the project area. Thus, the current project as it is going forward will have a reduced impact on fisher and its habitat. LOPs are being implemented within PBA potential denning habitat (still suitable post fire) to protect fisher from noise disturbance during the breeding season.

Although treatments will occur in high quality denning habitat, potential denning habitat and suitable denning habitat a majority of that habitat will remain suitable post treatment. The project was designed to improve resilience in forested stands by thinning smaller trees and retaining essential habitat elements. This work is vital to help prevent further loss of habitat due to a potential reburns and to buffer the effects of drought that could lead to further tree mortality.

Potential Effects include:

Unlikely direct mortality due project activities

Increased likelihood of predation due to linear features such as fuel breaks.



Decreases in canopy cover, basal area, snag and log densities could reduce habitat quality and reduce individual fitness through increased energy expenditures.

These potential effects will be mitigated by project design. There are numerous design criteria described within the Project Description Conservation Measures. These design measures protect essential habitat elements such as snags, logs, streamside corridors, valuable den/rest trees and minimum canopy cover requirements. Furthermore, LOPs will be in place to protect fisher from disturbance during the reproductive period.

Site preparation and reforestation will speed the transition to a forested habitat. This work will likely provide future fisher habitat and safer movement corridors.

The factors stated above, combined with the project measures implemented to sustain Pacific fisher, outweigh the limited and short-term negative effects of treatments (due to partial loss of forest biomass immediately after disturbance), especially considering that a more severe fire regime is predicted for the future and without fuels reduction, large scale, stand replacing wildfires could once again cause serious loss to potential denning habitat.

Long-term positive effects of fuels treatments (to reduce the future fire hazard) and increased structural heterogeneity and biological diversity outweigh the short-term negative effects of fuel treatments (due to immediate loss of forest biomass) on fisher, especially when assuming a more severe fire regime in the future. This will be a benefit to the fisher because it will provide more habitat over the long term as the trees that will remain will have more growing spaces.

- ◆ There are no aquatic endangered species within the Musick project area (and therefore the Project area). Two aquatic threatened species Yosemite toad and California red-legged frog were determined to have potential to be affected by the Project. Decision treatment units overlap the outer dispersal buffer of non-occupied habitat for Yosemite toad and there are no historical sightings on the Forest for California red-legged frog, and the species range does not cross onto the Sierra National Forest. There will be no effect to both species. Changes to the environmental baseline due to the Creek Fire do not change this determination in the EA because the fire would only have made it more unlikely that aquatic species would be in the Project area. Additional Project design features were added to minimize aquatic species effects. Stephanie Barnes, District Aquatics Biologist reviewed the Project and concluded in a memo to the file on June 14, 2021 that with the inclusion of the Project design criteria which were added to the design criteria in Appendix B, the potential for species viability loss as a result of implementing this treatment type post Creek Fire is expected to be consistent with the original analysis.
- ◆ There are no federally listed endangered botanical species within the Project area. There is one federally listed threatened plant species, *Calyptridium pulchellum* (Mariposa pussypaws), known at two locations within the Project area. Design Criteria BOT2 and BOT3 would provide specific protection as no activities would take place within the two occurrence areas. The occurrences are fenced and a zone of no disturbance would be flagged up to 50 feet outside the fences. Because occurrences would be protected from damaging effects, it is determined that the decision will have no effect on *Calyptridium pulchellum*. Changes to the environmental baseline due to



the Creek Fire do not change this determination in the EA because all affects to this specie are being avoided.

- ◆ Three separate biological evaluations were completed to assess the effects of the Proposed Action on aquatic species, terrestrial wildlife species, and botanical species currently identified as Region 5 Forest Service Sensitive species. These evaluations for Forest Service Sensitive species determined that the decision may affect individuals, but is not likely to result in a trend toward federal listing or loss of viability for these species, as discussed in the Musick EA, pp. 61-66. Changes to the environmental baseline due to the Creek Fire do not change these determinations in the EA because although the fire may have affected existing populations, the design criteria included in the Project would minimize impacts to residual species, not change the likelihood of lack of trend toward federal listing and would reduce the risk of future uncharacteristic wildfire that may impact these species.
- ◆ No direct or indirect significant, adverse effects to floodplains, wetlands, or municipal watersheds are proposed or expected for this Project, thereby complying with EO 11988, EO 11990, and FSH 1909.15 Chapter 30.3.2. The National Wetlands Index (NWI) GIS layer shows a total of one freshwater emergent wetland (0.45 acres) in HUC16 523.0059 just north of Road 8S008 and is listed as Dawn Meadow. A 150 foot no treatment zone with be implemented around this meadow. Project design criteria AQU1 thru AQU44 and HYD1 and HYD2 will not add further impacts to the meadow. If new wetlands are found during project implementation, a 150 foot no treatment zone with be implemented around the wetland. (Musick EA p. 59)
- ◆ Congressionally designated areas such as wilderness, wilderness study areas, or national recreation areas – no wilderness, wilderness study areas or national recreation areas are within the Project boundaries and therefore there is no effect on these areas.
- ◆ Inventoried roadless areas or potential wilderness areas –No inventoried roadless areas or potential wilderness areas (the Project is entirely within the WUI) are within the Project boundaries and therefore there is no effect on these areas.
- ◆ Research natural areas – No research natural areas are within the Project boundaries and therefore there is no effect on these areas.
- ◆ American Indians and Alaska Native religious or cultural sites – A comprehensive Cultural Resource Management Report (R2018051552030) was completed which determined the Musick Project will not cause loss or destruction of significant scientific, cultural, or historical resources (EA pp. 66-67). Tribal consultation was completed during the Musick Project environmental analysis period. The tribal consultation letter was issued September 6, 2018 and consultation input was incorporated into the Project design.
- ◆ Archaeological sites, or historic properties or areas – A comprehensive Cultural Resource Management Report (R2018051552030) was completed which determined the Musick Project will not cause loss or destruction of significant scientific, cultural, or historical resources (EA pp. 66-67).



## Public Involvement

As the actions in this decision are a subset of the Musick Project the public involvement for the Musick Project is considered to apply directly to this Project as well so no additional public involvement was determined to be needed. Collaboration done for the Musick Project was also considered to apply directly to the actions for this Project as again the actions are a subset of the Musick Project fulfilling the same purpose and need (related to fuels reduction, fuel break maintenance and reforestation) as the Musick Project.

The Musick Project was originally listed as a proposal on the Sierra National Forest Schedule of Proposed Actions (SOPA) as the Musick Project and the SOPA updated periodically during the analysis. A legal notice for the Musick Project formally soliciting specific written comments appeared in the Fresno Bee on September 12, 2018 starting a 30-day comment period. Notifications of the Musick Project proposal were made to the public, local governments, organizations, and agencies. As part of that process, the scoping period served as a designated period for public comment. Approximately 350 notices were sent to the public, local governments, organizations, agencies and tribes. In addition, the Dogwood Mountain Homeowners Association and the Dinkey Collaborative Members were also notified. A public meeting was held on September 20, 2018, at the Sierra National Forest headquarters and another meeting on October 4, 2018, at the Central Sierra Historical Society and Museum in Shaver Lake, California that presented information about the project and gathered comments. There was a fieldtrip in November 2018 which was organized for the tribes.

## Findings Required by Other Laws and Regulations

The Proposed Action was developed in accordance with and does not threaten to violate any Federal, State or local laws or requirements for the protection of the environmental (Clean Water Act, Clean Air Act, National Historic Preservation Act, National Forest Management Act, and Endangered Species Act) (Musick EA pp. 67-68). The actions being proposed are consistent with the Sierra National Forest Land and Resources Management Plan (USDA 1992) as amended by the Sierra Nevada Forest Plan Amendment (USDA 2004).

## Implementation Date

This action is not subject to appeal as per the Consolidated Appropriations Act of 2014 (Public Law No. 113-76) and can be implemented immediately. Implementation may begin in May 2022.

## Contact

For additional information concerning this decision, contact: Olivia Roe, High Sierra Ranger District Silviculturist, High Sierra Ranger District, 29688 Auberry Road, (PO Box 559), Prather, CA 93651, 559 – 855-5355 extension 3315.

Kim Sorini-Wilson  
High Sierra District Ranger

Date



*We make every effort to create documents that are accessible to individuals of all abilities; however, limitations with our word processing programs may prevent some parts of this document from being readable by computer-assisted reading devices. If you need assistance with any part of this document, please contact the Sierra National Forest at 559-297-0706.*

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## Appendix A

### Desired Conditions

The desired conditions for the Project are derived from the forest plan as amended and the Region 5 Ecological Restoration Leadership Intent. In addition, reforestation will be guided by the Dinkey Forest Landscape Restoration Project Reforestation Framework (produced in December 2017).

- Safe and dependable transportation systems free of dead trees or other hazards in areas of public and administrative use.
- Coordinated fuels treatments including the use of prescribed fire that cross jurisdictions and land ownerships based upon effectiveness and public and fire fighter safety.
- Surface fuel load levels minimizes chances of high-intensity, large-scale fires within forest stands, while maintaining soil cover and snags for wildlife habitat.
- flame lengths of less than four feet, rates of spread that are reduced, minimization of crown fire initiation, and promote surface fire
- Water quality meets the goals of the Clean Water Act and Safe Drinking Water Act.
- In-stream flows sufficient to sustain desired conditions of riparian and aquatic habitats (watershed resilience) and keep sediment regimes as close as possible to those with which aquatic and riparian biota evolved.
- Landscapes dominated by site-appropriate trees with variable densities and structure provides diverse wildlife habitat and forest products; structure mimics natural range of variability consistent with forests that develop under frequent fire return intervals
- Native vegetative communities free from noxious weeds.
- Treatments will occur adjacent to the rights-of-way where vegetation is growing to assist in reducing the risk of wildfire under the transmission lines.
- Fuel breaks are maintained with low fuel loads below 5 tons per acre and shrub cover below 10 percent and are dominated by open tree cover and grass that reduce potential conflicts with endangered and threatened species.

### Need

The desired conditions listed above and the existing conditions in the project area provide the basis for identifying needs and proposed activities to meet those needs. The landscape is now dominated by the burnt dead remnant trees from the Creek fire, small thickets of sprouting canyon live oak and California black oak, few and far between live conifers and rapidly growing brush. Dead large trees are visible across the landscape and are increasingly falling to the forest floor. Dead tree density averages over 300 trees per acre and will eventually contribute to hundreds of tons of fuel to the forest floor.

### Improve Safety by Reducing Heavy Fuel Loading and Hazards Adjacent To Communities

Removal of dead trees and fuel loads that pose a hazard in areas of high exposure is needed to ensure safety of the public, nearby communities, firefighters, Forest Service personnel, and contractors, and to provide for strategic fire protection. The use of National Forest System roads within the project area increases exposure and elevates the risk of injury or death from falling dead or damaged trees. There is a need to reduce the risk from falling hazard trees within 200 feet of each side of the road prism and within 400 feet of ridges proposed for fuel breaks, safety zones and staging areas.



The accumulation of fuels poses an increase in fire hazard and potential for high severity fires throughout the area. Large amounts of dead trees within the wildland urban interface, even when on the ground, pose hazards to firefighters. Reducing fuel loading and providing open vegetation conditions within fuel breaks, safety zones, and staging areas are needed to:

- Provide locations with fire suppression tactical advantages for aircraft and/or ground operations.
- Provide safe ingress and egress during emergencies.
- Reduce flame length.
- Slow fire spread and reduce the potential for sustained crown fire.
- Increase surface fire over other types of fire behavior.
- Allow for the timely deployment of tactical firefighting forces to suppress wildland fires.
- Allow for the efficient construction of emergency fire lines when needed.
- Support the reintroduction of fire across the landscape.

Treatments that create strategically placed area treatments, fuel breaks, and safety zones help meet this critical need. In addition to forest resources such as timber and wildlife habitat, high priority for fire protection include the local communities of Jose Basin, Pine Ridge and Shaver Lake. Also, a high priority of protection is desired for permitted use areas, hydro-power facilities, electrical transmission lines, and key communication facilities.

#### **Re-establish Resilient Forested Conditions and Provide for Effective Reforestation**

There is a need to re-establish resilient forested conditions, characterized by large live trees, in locations within the Musick Lie project area that have been de-forested or have lost most of the large overstory trees.

Most of the conifer trees (ponderosa pine, sugar pine, incense cedar and white fir) that would provide a conifer seed source have been killed by the fire or subsequent beetle attacks. The result has been a reduction of multiple forest cover types that comprise a variety of wildlife habitats and provide a variety of forest products.

There is a need for artificial regeneration to supplement natural regeneration. Reforestation, or artificial regeneration, can be used effectively to help re-establish resilient forested conditions. Necessary activities include site preparation, planting, thinning of existing naturally regenerated seedlings and saplings, and release of planted and natural seedlings. Many areas are now dominated by dense thickets of standing dead trees which need to be thinned to create openings that will allow for pine reforestation. Reforestation is also needed to re-establish forest habitat for sensitive species affected by the tree mortality.

For reforestation to be effective, there is a need to 1) use the herbicides glyphosate and triclopyr to control brush that sprouts from roots of certain species; 2) apply Agency registered borax fungicide to stumps of cut trees greater than 15 inches diameter at breast height to prevent the spread of annosus root disease; and 3) apply Aminopyralid for the control of invasive plant/shrub species.

#### **Protect Natural Resources from the Threat of High Severity Fire**

High intensity fires can result in extensive impacts to natural resources. Generally, these fires can damage soils and thus, increase the risk of erosion and sedimentation into stream channels.



Accumulations of large dead woody fuels can hold smoldering fire on site for extended periods that results higher soil burn severity and increased soil hydrophobicity. Large amounts of downed material also pose a risk to wildlife species movement patterns across the landscape, including creating dispersal barriers for smaller species such as turtles, frogs, and newts that utilize terrestrial habitats. There is a need to reduce accumulations of large dead woody fuels to protect soil, water, and wildlife resources.

There is a need to stabilize and increase the resilience of remaining live conifer habitat and create additional green habitat connections between remaining live habitats. Ensuring the persistence of remaining live resilient habitat in the face of increasing high severity fire and the certainty of future drought conditions is needed to provide for natural range of variability in future forest composition and structure.

There is a need to provide and maintain various types of wildlife habitat in the project area, including early complex seral habitat (live and dead trees mixed with shrubs). There is also a need to retain wildlife snags in a variety of different sizes, in particular, large snags. Although abundant opportunities exist to retain snags, snag retention must be balanced with the need to reduce hazard fuels and create stand resilience.

There is a need to protect heritage resources and provide for watershed resiliency. Frequent uncontrolled wildfires can damage heritage resources and cause unmitigated soil and water damage across the landscape.



## Appendix B

### Design Criteria

The Project has been designed to meet the standards and guidelines for land management activities described in the forest plan as amended by the SNFPA FSEIS and ROD. The following design criteria have been developed to further guide the implementation of the Project activities.

### **Aquatic/Riparian Species and Habitat**

Development of design measures for aquatic and riparian species and habitats within occupied habitat are based on the Forest Land and Resource Management Plan (USDA 1991); the 2004 Sierra Nevada Forest Plan Amendment, Final Supplemental Impact Statement and Record of Decision (2004 ROD) – Standards and Guidelines for Riparian Conservation Areas (RCAs) and Critical Aquatic Refuges (CARs) – pages 62 through 66; Best Management Practices (2011); and the species life history and habitat requirements. The purpose of these design measures is to avoid, minimize or eliminate the potential for adverse effects to the species and habitats and to protect viability. The following project design criteria will be implemented:

#### *General*

**AQU1** If newly listed or unknown occurrences of federally listed threatened (T), endangered (E), proposed (P), candidate (C), or Forest Service sensitive (FSS) aquatic species are found within the affected project area during sale preparation or implementation, it should be reported to the district aquatic biologist immediately and additional species protection measures may be needed (Endangered Species Act, forest plan compliance).

**AQU2** Riparian vegetation within the riparian conservation area will not be cut during project activities unless coordinated with the district aquatic biologist (forest plan standard and guideline 37 and 69; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 96, 101, 103, 105, and 111).

**AQU3** No storage of fuels and other toxic materials is allowed within riparian conservation areas except at designated administrative sites and sites covered by a Special Use Authorization (standard and guideline 99; best management practices Road-10) unless approved by the district hydrologist or aquatic biologist prior to storage.

**AQU4** Post-project effects to occupied Western pond turtle and Foothill yellow-legged frog habitats identified in the project area would be monitored (i.e. stream condition inventory) for sedimentation and channel altering changes as a result of implementation. Immediate mitigation measures would be taken to remedy adverse impacts to habitat or species viability if detected due to project implementation (2004 Sierra Nevada Forest Plan Amendment Record of Decision riparian conservation objectives desired conditions, page 42-43; standard and guideline 92).

**AQU5** For protection of Western pond turtle nesting and overwintering sites, project activities within 325 feet of occupied Western pond turtle stream habitat will not occur from October 15-June 15.

For the Foothill yellow-legged frog occupied habitat, project activities will not occur from



October 15- June 15. If project activities need to occur during this time, site specific strategies would be developed with the district aquatic biologist.

AQU6 Prior to project implementation (including planting, burning, road maintenance, and so on), a briefing by the aquatic biologist will occur to inform staff of Western pond turtle and Foothill yellow-legged frog habitats and handling procedures.

AQU7 On a daily basis, prior to starting work, inspection of the work site will take place to locate any Western pond turtle individuals that have moved into the area. If Western pond turtle individuals (dead or alive) are located in the project area, activities will be temporarily halted until the individual(s) can be moved. Dead individuals will be photographed, GPS'ed and moved to a nearby location out of the inspection site. If live individuals are located:

- a. To move, gently grasp both sides of the shell and lift approximately 10 inches off the ground.
- b. Move individual(s) to a safe place nearby, such as a stream channel, across the street, in the direction they were traveling.
- c. Notify the district aquatic biologist of any sightings as soon as practical. Personnel shall avoid injuring, harassing, or harming aquatic species.

AQU8 Stream crossing structures needed for implementation shall not create barriers to upstream or downstream passage for aquatic-dependent species (standard and guideline 101).

AQU9 Within 325 feet of occupied Western pond turtle habitat, piles, skid trails, and landing sites will be located outside of existing open grassy patches identified as high quality habitat for protection of Western pond turtle nesting and overwintering habitats (standard and guideline 69; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 100, and 118; best management practices AqEco-2 (2), Veg-4 (2ai, ii).).

- a. Areas to avoid will be flagged by an aquatic biologist prior to project implementation.
- b. Do not fall trees across these habitats.

AQU10 Falling of trees, piles, and other actions should not create dispersal barriers to Western pond turtles.

#### *Piles*

AQU11 Piles will be located outside of streamside management zones (25 feet ephemeral, 75 feet intermittent, and 100 feet perennial) and riparian management areas, unless approved by the district aquatic biologist prior to creating (also see Veg-2, 3). Any piles needed within streamside management zones and riparian management zones will be limited and hand piled unless a specific strategy has been developed for that unit.

AQU12 No piling will occur within 100 feet of occupied Western pond turtle or Foothill yellow-legged frog habitats. Treatments within 100 feet will be hand treated unless otherwise agreed to.

AQU13 Piles will be burned, at a minimum, by November 1 to prevent Western pond turtles from using piles for overwintering habitat. See Burning/Fire Line Construction section below for additional pile burning design criteria.

AQU14 Coordinate with the District Aquatic biologist for cull materials and piles to be left on site.



### *Skidding/End-lining, Temp Roads (New/Old), Landings*

AQU15 Locations of skid trails, landings, temporary roads, and other related ground disturbing activities will not cross through or within Forest Service Sensitive aquatic species occupied habitat unless coordinated with the district hydrologist and aquatic biologist prior to implementation for site specific design criteria per unit (forest plan standard and guideline 69; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 100, and 118; best management practices AqEco-2 (2), Veg-4 (2ai, ii), Road 5 and 7).

AQU16 Existing and new landings needed within known occupied Western pond turtle or Foothill yellow-legged frog habitat will be reviewed and agreed to by the district aquatic biologist prior to use.

AQU17 Any new landing sites proposed within a riparian conservation area will follow best management practice Veg-6.

AQU18 When constructing skid trails, landings and temporary roads, design them to eliminate the potential to capture surface run-off and then deliver sediment into, or divert stream flow from, occupied or suitable habitat for aquatic/riparian species (2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 100, 113, 118; best management practices Veg-2, 3, 6).

AQU19 Skid trails, landings, and temporary roads will be properly cross ditched after use or before winter precipitation, whichever comes first. They should also be slashed, ripped or mulched if necessary (best management practices Veg-2, 3).

AQU20 No skidding or end-lining in or across meadows, or perennial or intermittent streams (forest plan standard and guidelines 37, 69, 75, 77, 78.79; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 100, 118; best management practices AqEco-2, 4).

AQU21 Limit end-lining, tractor ground skidding, or soil disturbing activities within the 325 feet of Western pond turtle occupied habitats or 165 feet of Foothill yellow-legged frog occupied habitats (best management practice Veg-2-4).

AQU22 All cull and other product materials will be removed from landings located within streamside management zones of meadows or perennial streams (best management practice AqEco-2).

### *Burning/Fire Line Construction*

AQU23 Prior to burning implementation, coordinate with specialists to discuss timing, special needs, new threatened, endangered, or sensitive species (or proposed for listing) occupancy information, and sensitivity of the prescribed fire project.

AQU24 Within riparian conservation areas, direct ignition within riparian vegetation should be avoided. Prescribed fires may be allowed to back into riparian vegetation areas. No direct ignition should occur within streamside management zones or riparian management areas, or aquatic



features (2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guideline 109; best management practices Fire-2).

AQU25 Do not use drip torches or chemical materials when lighting piles within streamside management zones (standard and guideline 99; best management practices Chem-3, AqEco-2).

AQU26 When broadcast burning in riparian conservation areas, ignition will be stopped within the streamside management zones of a stream or aquatic feature and fire can be allowed to back down into the area (forest plan standard and guideline 69; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 96, 99, 109, and 111).

AQU27 Slash and brush piles shall be ignited using a pattern that allows animals to escape the fire. For example, light the pile at the top so an escape route in all directions is available (forest plan standard and guideline 69; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guideline 92).

AQU28 Dozer or hand fire line construction within riparian conservation areas will adhere to best management practices outlined in the district hydrologist report which is reviewed and will have concurrence from the District Ranger

AQU29 Fire lines necessary within known occupied Western pond turtle or Foothill yellow-legged frog habitats will cross perpendicular to streams, follow the natural landscape contour, and be hand cut unless consulted by the district hydrologist or aquatic biologist. At a minimum, a waterbar should be placed on either side of each stream crossing to minimize sediment movement into the streams (best management practices AqEco-2, Veg-2 and 3, Fire-2).

AQU30 Fire lines within streamside management zones (25 feet ephemeral, 75 feet intermittent, and 100 feet perennial) will be designed and constructed to reduce sediment entry into channels. Constructed fire lines within riparian conservation areas will be appropriately water barred (best management practices AqEco-2, Veg-2 and 3, Fire-2).

AQU31 Dozer or hand fire line construction for piles or contingency lines located within known occupied Western pond turtle habitat will be surveyed prior to construction to determine species occupancy.

AQU32 To minimize disturbance to Western pond turtle and Foothill yellow-legged frog occupied habitats, piles will be lined within the week prior to burning to avoid complications with burn scheduling and to minimize soil disturbance.

### *Equipment*

AQU33 All equipment will be stored at a minimum of 325 feet away from known occupied Western pond turtle habitat or 165 feet of occupied Foothill yellow-legged frog habitat unless site is approved by district aquatic biologist (best management practices AqEco-2 (2), Road-9). Storage of heavy machinery would occur only at approved areas such as existing landings, existing roads, or turnout areas, and should be outside of riparian conservation areas and riparian management areas of Western pond turtle and Foothill yellow-legged frog occupied habitats. Refer to best management practice Veg-3 for additional measures.



AQU34 Ensure equipment is clean and free of mud or dirt prior to bringing to project location (best management practice AqEco-2 (4)).

AQU35 If equipment needs access to project materials located within 100 feet of known occupied Western pond turtle or Foothill yellow-legged frog habitat, or in riparian conservation areas, coordination with the district aquatic biologist and hydrologist should occur. At a minimum:

- a. No turning of equipment will occur; only back and forth to minimize soil disturbance.
- a. Minimize entries into streamside management zones to reduce soil compaction and disturbance.
- b. A maximum of 40 percent of the total area is allowed access by mechanical equipment.
- c. A skid steer or smaller equipment will be used to minimize soil compaction, disturbance, and footprint.
- d. Mechanical access will be limited to within 50 feet of stream channels, or at a minimum of outside of the floodplain of the stream channel if hand treatment is not feasible.

AQU36 Refueling of chainsaws or other equipment within known occupied Western pond turtle or Foothill yellow-legged frog habitat will use the following guidelines (standard and guidelines 69, 75; 2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 99; achieving 2004 Sierra Nevada Forest Plan Amendment Record of Decision desired conditions for species viability – minimizing impacts; best management practices AqEco-2 (3), Road-10):

- a. Do not refuel within streamside management zones.
- b. Use spill pad for refueling handheld equipment within riparian conservation areas.

#### *Soil Disturbance*

AQU37 Soil disturbance in units that overlap occupied Western pond turtle terrestrial habitats will be minimized for the protection of underground nests.

AQU38 Areas in occupied Western pond turtle or Foothill yellow-legged frog habitat where soil disturbance has occurred from project activities will be rehabilitated prior to winter to minimize sediment movement, reduce Western pond turtle dispersal barriers, and minimize impacts to upland habitat (standard and guidelines 92, 100, 111, 113, and 114; best management practices Veg-2, 3, 8).

#### *Herbicides*

AQU39 Herbicides will not be used within the stream management zone of Western pond turtle or Foothill yellow-legged frog occupied habitat.

AQU40 Within known occupied Western pond turtle or Foothill yellow-legged frog habitat, only direct spray method will be used. Herbicide application methods outlined in the Draft Application Methodology White Paper, March 7, 2016, SNF, will be followed.

AQU41 Unit locations needing to be sprayed prior to June 15 will be surveyed for overwintering Western pond turtles prior to application. If Western pond turtles are located, the area will be flagged and avoided.



### *Dust Abatement/Drafting*

AQU42 Only use water as dust abatement in riparian conservation areas known to be occupied with Western pond turtles or Foothill yellow-legged frogs (best management practice AqEco-2).

AQU43 Water drafting will occur in designated drafting locations and will follow all appropriate best management practices (2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 96, 101, 103, and 110; best management practices WatUses-3)

AQU44 Water drafting sites in the project area would be located away from occupied threatened, endangered, or sensitive (or those proposed for listing) aquatic species habitat as determined by the district aquatic biologist (2004 Sierra Nevada Forest Plan Amendment Record of Decision standard and guidelines 92, 96, 103, 101, 110). If suitable drafting locations are only available in occupied habitats, pre-determined designated locations will be developed by the District aquatic biologist.

### *Fuel Breaks*

AQU45 For Category 2 fuel breaks, the 40-foot wide dozer line created down the middle of each fuel break would cease at least 100 feet from occupied Western pond turtles or Foothill yellow-legged frog habitat. No mechanical ground disturbance would occur in this area; only hand treatments will be allowed (best management practice AqEco-1, 2). If some mechanical treatment cannot be avoided in this area to meet project objectives, implement the following:

- a. Mechanical treatment locations will be identified prior to implementation and reviewed by the district fisheries biologist for conflicts with species or habitats.
- b. The number of mechanical entries into the approved locations will be minimized.
- c. Egress and ingress by mechanical equipment will be limited to forward and backward movements. No turning allowed.
- d. Smaller equipment, such as a skid steer, will be used to minimize soil compaction.

### *Stream Crossings*

AQU45 Designate crossings to areas that will have the least impacts to individuals in the water.

## **Botany: Threatened, Endangered and Sensitive Plants, and Non-Native Invasive Plants**

**BOT1 (Includes non-native invasive plants direction)** Within units that have not had botanical surveys prior to the NEPA decision, surveys for threatened, endangered and sensitive plants and nonnative invasive plants shall occur prior to implementation of project activities. Any threatened, endangered and sensitive plants or invasive weeds discovered shall be GPS-mapped, flagged, and locations provided to the project leader and Forest Service contract representatives.

For protection of the federally listed Mariposa pussypaws (*Calyptridium pulchellum*):

**BOT2** Known occurrences of Mariposa pussypaws will be avoided during project implementation. Sierra National Forest botany staff will check the fences protecting both populations annually when the populations are monitored in late April to early May, and if



necessary, flag a buffer up when the populations are monitored in late April to early May, and if necessary, flag a buffer up to 50 feet in width using lime-glo and white flagging tied together.

BOT3 Botanists will flag for avoidance the suitable habitat for the Mariposa pussypaws that falls outside the fence with lime-glo and white flags tied together prior to project implementation. Note: in some years, seeds wash downhill to gravel outside the fence line and a few plants grow outside the fence. The 50-foot buffer around the fencing (described above in BOT2) is likely to fulfill this requirement.

For protection of Forest Service sensitive plant species:

BOT4 Sierra National Forest botany staff will flag for avoidance known locations of Forest Service sensitive plant species with lime-glo and white flags tied together prior to project implementation. These locations will correspond to controlled areas on contract maps. No herbicide or drift is allowed within these areas. If there is a non-native invasive plant infestation overlapping with a Forest Service sensitive plant location, a Forest Service botanist will work with project implementers to resolve, possibly allowing spray near sensitive plants if it will eliminate nonnative invasive plants that would negatively affect Forest Service sensitive plants.

BOT5 In Jose Basin, there are Forest Service sensitive plants that inhabit granitic outcrops and associated gravel and sand “pans” (orange lupine, slender-stalked monkey flower). Because these are annual plants that occupy varying acreage each year depending on the rainfall patterns, and a seed bank often exists throughout a larger extent of their habitat than appears occupied in a given year, larger habitat areas will likely be flagged for avoidance. Damage to these species and their habitat will be prevented by working with a Forest Service botanist to plan routes of access and parking areas for equipment to avoid rock outcrop and gravel pan habitat as much as possible. In granitic rock outcrop and gravel pan habitats, the following will apply:

- a. Avoid falling trees onto gravel pan and rock habitat. If felling onto pans cannot be avoided, then fall in a manner to minimize damage to these pans using methods such as falling parallel to pan, falling into areas with least number of sensitive plants in it, and minimizing additional movement or accumulation of woody material. Another possibility is falling after plants have set seed but before fall rains (late summer/early fall).
- b. No piling of cut material, slash or other woody debris onto rock gravel pans with known populations of Forest Service sensitive plants shall occur.
- c. Avoid driving vehicles on rock gravel pans, whether to park, access trees, haul material or other associated work related to implementation. BOT6 *Carpenteria californica* is a paleoendemic shrub that is State-listed Threatened and occurs in scattered patches within the project area, primarily west of Jose Creek. *Carpenteria* shrubs that are accessible to botany staff shall be flagged with lime-glo and white flagging tied together prior to project implementation. No shrubs may be removed, although with the approval of a Forest Service botanist mature shrubs may be trimmed if necessary. No more than 30 percent of the branches of a given shrub shall be removed unless under the guidance of a Forest Service botanist. Photographic guides for identification will be made available to those implementing this project, in the event they are the first to discover a particular patch. This is necessary as it may not be possible for botanists to access all the carpenteria shrubs prior to implementation due to the density of chaparral in parts of the project area.



**BOT7** Should concerns arise, a Forest Service botanist should be on hand to help identify carpenteria and other Forest Service sensitive plants as practical in the field for implementation crews when given at least a day of advanced notice.

For prevention and control of non-native invasive plants:

**NNIP1** All off-road equipment should be washed before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain seeds of non-native invasive plants. Clean equipment using water at a Forest Service approved wash site before moving from a site infested with non-native invasive plants to a new location within the project area.

**NNIP2** Staging areas for equipment, materials, or crews would be located in areas without non-native invasive plant infestations.

**NNIP3** Do not pile material for burns or other purposes on or immediately adjacent to known non-native invasive plant infestations, unless recommended by a Forest Service botanist as a method of control.

**NNIP4** If project activities such as felling, piling, road maintenance, and burning happen to intersect an infestation of non-native invasive plants that was previously unknown, project implementation should stop until the infestation is treated and/or flagged. If the infestation cannot be treated, avoid the area until a Forest Service botanist can make a determination on the best course of action for the infested area.

## **Heritage Resources**

The following cultural resource design measures will ensure compliance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 Code of Federal Regulations 800, to identify historic properties and avoid or minimize adverse effects:

**CR1** Project implementation shall comply with the stipulations of the Programmatic Agreement Among the USDA Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region, as amended, 2018 (Regional PA). An inventory of cultural resources has been created for the project area. Some areas were not able to be surveyed due to impenetrable brush and conditions caused by tree mortality and these will require survey after treatments are completed and accessibility is improved in accordance with Appendix H of the Regional PA). Components of this project will meet both Stipulation 7.8(a), Undertakings with No Historic Properties, and Stipulation 7.8(b), Undertakings with Historic Properties. In the latter case, protection measures specific to individual historic properties are derived from Standard Protection Measures (SPM) in Appendices E and H of the Regional Programmatic Agreement, as described in the Heritage Resources Report in the project record (Irwin 2019).

**CR2** Prior to initiating project activities, the district archaeologist should be contacted to ensure appropriate protection measures for cultural resources are in place and understood (Appendix E: SPM 1.3 (2)).



CR3 Monitoring by heritage program specialists may be a condition of approval for work that may occur within the boundary of or that has the potential to impact a heritage resource (Appendix E: SPM 1.5).

CR4 Unsurveyed Areas: No project activity shall occur in portions of the project that have not had survey to identify historic properties:

1. Identification and Inventory: All treatment areas have been adequately inventoried or designated for post-implementation survey. In the event that a treatment area is identified that falls outside of the current heritage inventory, intensive cultural resources survey will be required to identify historic properties prior to approval of the treatment. This will be considered a new undertaking under the Regional Programmatic Agreement.

2. Due to the need to abate hazards, the following exceptions can be implemented, with prior review and approval by the district archaeologist:

- a. Felling of hazardous trees along roadways, within recreation areas, or other areas for health and safety reasons provided they are left in place or cut up with hand tools, including chain saws, and removed by hand (Appendix D, Screened Undertakings, 2.3(o)).
- b. Felling and removal of hazard trees and wind thrown trees from road prisms where deemed necessary for health, safety, or administrative reasons, so long as trees are felled into and removed from within existing road prisms (area clearly associated with road construction, from road surface to top of cut and/or toe of fill) where previous disturbance is such that the presence of historic properties is not allowed off previously disturbed areas associated with road prisms (Appendix D, 2.3(p)).

CR5 Areas of Impenetrable Brush/Deferred Survey: As noted above and as described in Irwin (2019), some areas of the APE are not conducive to archaeological survey. Because of these conditions, certain areas are selected for deferred survey. These are generally areas with less than 35 percent slope that have received no previous survey coverage or less than intensive survey.

- a. Deferred survey will be accomplished in accordance with Appendix H of the Regional Programmatic Agreement (2018)-Hazardous Fuels Protocol for Non-Intensive Inventory Strategies for Hazardous Fuels and Vegetation Reduction Projects. This protocol for nonintensive inventory strategies covers two components: Prescribed Fire Treatments, and Mechanical Treatments.
- b. Deferred survey is expected to capitalize on expected improvement in accessibility or surface visibility after project completion. Survey will generally be accomplished after the introduction of prescribed fire; however, survey may be conducted following thinning or other mechanical fuels reduction if ground conditions are conducive, i.e. allow access and visibility.
- c. A plan for post-implementation heritage surveys for all impenetrable brush areas is provided in Irwin (2019) and must be followed to ensure compliance with Section 106 of the NHPA. Post-implementation surveys must be accomplished within one year of completion of a designated stage of treatment.
- d. If the recommended survey work is not completed within this period of time, the Forest shall notify and consult with Region 5, the SHPO, and the ACHP on appropriate actions needed to complete the work within an agreed upon time period, or failing to do so, shall comply with 36 CFR 800.

CR6 Surveyed areas and historic property locations: Project activity may occur in portions of the project area that have been adequately surveyed for historic properties. These areas are identified



in Irwin (2019). Coordination with the district archaeologist is required for all project activity that may affect a potential historic property. The following standard protection measures are required:

1. **Avoidance:** Historic properties shall be avoided by ground disturbing activities (e.g. the use of ground-based mechanical equipment, piling, and so on), in accordance with the Class I standard protection measures (avoidance with site demarcation). Typical implementation of the standard protection measures is the practice of “flag-and-avoid” (Appendix E: SPM 1.1 and 1.3).

2. **Work within historic properties.** Certain proposed activities may be allowed within historic property boundaries:

- a. Treatment and/or removal of vegetation and hazardous surface fuels located within historic properties: for certain historic properties, vegetation and other hazardous surface fuels may be treated and removed by hand, through use of off-site equipment, or by rubber-tired equipment. Ground disturbance shall be minimized.
- b. Vegetation and woody debris to be burned shall not be piled within historic property boundaries unless locations have been specifically approved (Appendix E: SPM 2.2(b)(1)(A-K)).

3. **Linear Historic Properties.** Road maintenance and reconstruction activities on historic roads and railroad grades converted to National Forest System roads, in accordance with Appendix E: SPM 2.2(d):

- a. Work shall be confined to the existing alignment/prism and previously maintained surfaces. Existing road templates may not be widened, all blading shall remain within the existing road prism, and equipment shall not cut into side banks or berms.
- b. Equipment shall not park or drive on railroad features, such as berms, through-cuts, or turn around outside existing turnouts.
- c. Through-cut features shall remain intact and shall not be cut off at either end. Bladed material shall be pushed past the feature and then off the road.
- c. Lead-off ditches shall not be placed through berms, through-cuts, or other features.
- d. When cleaning culverts or drainages, existing headwalls shall not be impacted. Drainage structures shall be accessed only where there are no existing railroad features.
- e. Any existing features that require work shall be re-built with in-kind material and design.
- f. Brush disposal piles generated during roadside clearing shall not be piled within historic property boundaries unless locations have been specifically approved.
- g. Numerous features of the former railroad have been identified, such as retaining walls, culverts, fills, and so on, and could be damaged by tree removal activity. Prior to work along these roads, project managers and contracting officials will consult the district archaeologist to identify any road features, and the district archaeologist may require onsite monitoring by heritage staff during project work (SPMs 1.3(2) and 1.5).

**CR7 Road Maintenance:** Road improvement actions require prior review by the district archaeologist. Certain site protection measures previously installed on roadways by the Sierra National Forest and Southern California Edison (e.g. padding, signs) shall be considered prior to any project action. Routine road maintenance and resurfacing where work is confined to previously maintained surfaces, ditches, culverts, and cut and fill slopes within road prisms where there are no known historic properties (Appendix D, 2.2(n)), may be documented as Screened Undertakings with no potential for adverse effect.

**CR8 Tree Felling and Removal.** Felling and removal of hazard, salvage, and other trees within historic properties (Appendix E):

- a) Trees may be limbed or topped to prevent soil gouging during felling;



- b) Felled trees may be removed using only the following techniques: hand bucking, including use of chain saws, and hand carrying, rubber-tired loader, crane/self-loader, helicopter, or other non-disturbing, heritage program manager -approved methods;
- c) Equipment operators shall be briefed on the need to reduce ground disturbances (e.g., minimizing turns);
- d) No skidding nor tracked equipment shall be allowed within historic property boundaries;
- e) Where monitoring is a condition of approval, its requirements or scheduling procedures should be included in the written approval.

**CR9 Fire, hazardous fuels and vegetation management (Appendices E and H):**

- a) Fire crews may monitor sites to provide protection as needed.
- b) Fire lines or breaks may be constructed off sites to protect at risk historic properties.
- c) Vegetation may be removed, and fire lines or breaks may be constructed within sites using hand tools, so long as ground disturbance is minimized, and features are avoided, as specified by heritage program manager or qualified heritage program staff during fire emergencies (see Stipulation 7.11).
- d) Fire shelter fabric or other protective materials or equipment (e.g., sprinkler systems) may be utilized to protect at risk historic properties.
- e) The remainder of the archaeological site or historic feature is to be avoided, and traffic is to be clearly routed across the foreign fill material;
- f) The foreign material must be removable should research or other heritage need require access to the archaeological deposit or historic feature at a later date; and
- g) Indian tribe or other public concerns about the use of the foreign material will be addressed prior to use.

**CR11 Placement of barriers within or adjacent to site boundaries to prevent access to or disturbance of deposits or historic features, or for protection of other sensitive resources on-site, when such barriers do not disturb subsurface deposits or lead to other effects to the site.**

- a) Non-intrusive barriers: wooden and other barriers anchored with rebar; rocks/boulders or other items placed on the surface; weed-free straw bales or straw bales anchored with rebar; or other nonintrusive barriers approved by heritage program managers or qualified heritage program staff.
- b) Fencing: "T"-post fencing; snow fencing; orange highway-type fencing; or other fencing approved by HPMs or qualified Heritage Program staff.

**CR 12 Pesticides, biocontrol agents, or herbicides: Because local tribal people continue traditional gathering in the project area, the Sierra National Forest should notify local tribal governments prior to the application of chemical treatments that have the potential to affect access to or use of resources by Indians. In addition, the Sierra National Forest shall follow normal safety protocol for placing caution signage in areas treated and warning against contact with or use of treated vegetation within a specified period of time.**

**CR 13 Jose Basin Road and Road 8S008: These roads are the former San Joaquin & Eastern Railway. Numerous features of the former railroad have been identified (e.g. retaining walls, culverts, fills, etc.) that could be damaged by treatment activity. Prior to work along these roads, project managers and contracting officials will consult the district archaeologist to identify any**



significant road features, and the district archaeologist may require on-site monitoring by heritage staff during project work (Appendix E: SPMs 1.3(2) and 1.5).

**CR14 Other Cultural Resources:** Any traditional cultural properties, locations of contemporary Native American gatherings, or other cultural resources identified through consultation with Native American tribes that are not in the current cultural resources inventory as defined for the project (Irwin 2019), shall be treated as a discovery in accordance with Stipulation 7.10 of the Regional Programmatic Agreement.

**CR15** In the event of inadvertent effects to or new discovery of a potential historic property, to include tribal resources noted above, during implementation, the forest would comply with Stipulation 7.10 of the Regional Programmatic Agreement regarding notification and consultation.

**CR16** A post implementation assessment will be made by the Heritage Program and based on the results of this assessment, one of the following actions may be taken:

1. If visibility is significantly enhanced and terrain is accessible
  - i. Intensive survey will be completed

## Hydrology

The hydrology design criteria have been derived from national best management practices. They can be tailored to site specific guidelines.

**HYD1** Activities along roads within the project area shall follow standard criteria applying to activities within the aquatic management zones (AMZs; this term is used interchangeably with streamside management zones, SMZs) portion of the riparian conservation areas on perennial, intermittent, ephemeral streams and special aquatic features. These areas are typically associated with stream crossings or when a portion of the aquatic management zone is overlapped by the project's footprint.

- a. Trees shall be felled in a direction away from stream and special aquatic features (i.e. meadows, springs).
- c. Hazard trees shall be felled and removed by hand crews where possible and safe to do so.
- d. Reaching into the aquatic management zone with heavy machinery to remove hazard trees is allowed.
- e. No direct lighting of riparian vegetation shall be allowed.
- f. Low to moderate intensity backing fires are allowed.
- g. No refueling/servicing of equipment allowed.
- h. Retain riparian vegetation.

**HYD2** Prescriptions for the remaining portions of the riparian conservation areas outside of aquatic management zones:

- a. Retain riparian vegetation.
- b. Pile and burn is allowed.
- c. No direct lighting of riparian vegetation shall be allowed.
- d. No refueling/servicing of equipment allowed unless in a designated area on a road or landing.
- e. Falling and removal of hazardous trees are allowed.
- f. Minimize turning of heavy machinery to remove hazard trees as much as possible.



## **Recreation/Special Uses**

RSU1 To minimize disturbance and avoid conflicts with Forest visitors, a limited operating period, limiting project activities to the hours of 8 am to 5 pm, would be established during the recreation peak season months from Memorial Day to Labor Day for project activities within and directly adjacent to recreation sites and special use permitted areas. If project activities need to occur during this time, coordinate with district Special Uses Officer/Staff prior to implementing project activities. These areas include Camp Sierra Organization Camp, Camp Sierra Recreation Residence Tract (a total of 71 cabins), and an isolated cabin on Forest Service Road 8S08 (standard and guide 325).

RSU2 Structures, amenities, and special use improvements (e.g., picnic tables, barriers, toilet buildings, interpretive trails, trail signs, bulletin boards, water systems, apiary sites, etc.) within the recreation areas and special use permitted areas shall be protected from damage resulting from project activities and, in case of damage, would immediately be repaired or replaced to pre-project condition. These areas include Camp Sierra Organization Camp, Camp Sierra Recreation Residence Tract, and an isolated cabin as well as apiary sites in various locations along Forest Service Road 8S08 (standard and guide 18).

RSU3 Prior to project implementation, the Special Uses staff would coordinate with permit holders to identify any improvements to be protected within their permitted area.

RSU4 In areas where work is being completed near special use permit structures, provide permit holders the ability to comment on the completeness of the work before the contract is closed. District Special Uses Officer/Staff will serve as contact/liaison between permit holders and contractor.

RSU5 Prior to implementing the project near private lands, landlines will be verified to ensure that trespass is avoided.

RSU6 Ensure legal access on existing roads through private lands has been acquired before project implementation.

RSU7 If felling hazard trees while the public has access to recreation sites and special use permitted areas, control perimeter with signs and flaggers to keep the public safe.

RSU8 During project activities, access to developed recreation sites that are on designated roads or designated trails would be allowed contingent upon safety of the public.

## **Soil Resources**

### *General*

SOIL1 Reduce the impacts of cumulative watershed effects by applying appropriate best management practices and mitigation measures during project implementation. Utilize regional cumulative watershed evaluation (CWE) methodology when refined for application within the forest to assess each project for potential to incur cumulative effects (USDA Forest Service 1992a).



**SOIL2** Allow no regeneration harvest on highly erodible soils where sustained slopes exceed 65 percent (USDA Forest Service 1992a and USDA Forest Service 2017).

**SOIL3** Apply appropriate erosion prevention measures on all ground-disturbing activities according to Forest Service Handbook 2409.23 prior to fall storms, around October 1, and immediately upon completion of any activity begun after November 1.

**SOIL4** Apply appropriate erosion prevention measures (Forest Service Handbook 2409.23) on high erosion hazard (EH) soils under the following conditions (USDA Forest Service 1992a and USDA Forest Service 2017):

- a. When exposed soils from an average of several 500-foot linear transects:
  - Exceed 150 feet on slopes of 15-35 percent
  - Exceed 75 feet on slopes of 35-65 percent, or
  - Exceed 25 feet on slopes over 65 percent.
- b. On linear disturbances, such as fire lines, cross-drain at the following intervals:
  - Cross-drain intervals determined by percent slope

**Table 3. Erosion Hazard Rating (EHR)**

Slope Percent	Low (Feet)	Medium (Feet)	High (Feet)	Very High (Feet)
1-6	400	350	300	250
7-9	300	250	200	150
10-14	200	175	150	125
15-20	150	120	90	60
21-40	90	70	50	30
40-60	50	40	25	15

**SOIL5** Plan and execute activities such as timber harvesting, site preparation and fuels reduction on soils sensitive to loss of productivity by using the following standards (USDA Forest Service 1992a and USDA Forest Service 2017):

- a. Avoid mixing or removing soils below the A horizon. Roads, skid trails, fire lines and log landings are exceptions.
- b. On completion of a ground-disturbing project on less than 35 percent slope, maintain an average accumulation of 50 percent protective groundcover density in the 1 to 100-hour fuels with some 1,000-hour fuels up to 10 inches in diameter.
- c. On slopes over 35 percent with Very High and/or High Erosion Hazard soil, an ID team will evaluate ground cover needs and develop a prescription.

**SOIL6** Soil cover shall be maintained at an average accumulation of 50 percent on slopes less than 35 percent to minimize soil erosion and uphold surface organic matter accumulation, Soil cover components include the 1 to 100-hour fuels with some thousand- hour fuels up to 10 inches in diameter. Within treated areas on slopes greater than 35 percent, 70 cent soil cover shall be maintained. Where shrub species predominate, attempt crushing prior to piling to create small woody fragments left scattered over the site for soil cover and erosion protection (USDA Forest Service 1992a and USDA Forest Service 2017).



- a. Soil cover includes ash, organic surface materials, living vegetation less than 3 feet tall (grasses, forbs and low growing shrubs), surface rock fragments larger than three-quarters inch or where needed applied mulches.
- a. Some soil and ecological types may not be capable of producing 50 percent soil cover because of naturally low productivity.

**SOIL7** Conduct ground based mechanical operations when the soil is sufficiently dry to prevent unacceptable loss of soil porosity (USDA Forest Service 2017). Take note:

- a. Ground-based mechanical equipment can only operate on fine textured soils (Auberry, Holland, and Ultic Haploxeralfs) with high soil compaction hazard rating when the soils are sufficiently dry to 8 inches.
- b. Wet weather operations may be permitted on soils with compaction hazard ratings of moderate or less after evaluation by the forest soil scientist.
- c. Shallow soils are vulnerable to displacement and should only be operated on during dry periods and when located on slopes less than 35 percent.

**SOIL8** Limit skidding operations where sustained slopes exceed 35 percent, except where supported by on-the-ground interdisciplinary team evaluation. Feller-buncher operations are allowed on slopes up to 45 percent (USDA Forest Service 1992a and USDA Forest Service 2017). Take note:

- a. During skidding operations short, steep stretches up to 45 percent but less than 100 feet in length may be accessed, and areas above 45 percent may be end-lined or excluded from treatment.

**SOIL9** Treatment areas susceptible to excessive topsoil displacement on steep, shallow soils shall use the following harvest options (USDA Forest Service 1992a and USDA Forest Service 2017):

- a. Utilize a feller-buncher on steeper ground to pack smaller trees together to minimize soil displacement from multiple skids.
- b. When applicable and/or available, utilize a flexible track (low ground disturbance) skidder where a significant portion of the treatment unit is greater than 35 percent or where adverse skidding is required.
- c. Avoid displacing the topsoil, 2 to 4 inches, and exposing erosive subsoils below.

**SOIL10** End-lining within streamside management zones, near rock outcrops, or on steeper slopes where surface gouges or trenches form, and water bar soil displacements if they exceed 6 inches in depth and 25 feet in length (USDA Forest Service 2017).

**SOIL11** Lop and scatter fuels below rock outcrops that have the potential to generate runoff into management activity areas and cause erosion. Lopping and scattering fuels within these areas will maximize soil cover and surface organic matter retention (USDA Forest Service 2017).

**SOIL12** Provide for road surface stabilization, for instance, gravel, where economical on roads over 5 percent grade located on sensitive soils (Auberry, Holland and Ultic Haploxeralfs soil families) and/or areas of high cumulative watershed evaluation potential within streamside management zones that may affect soil productivity and/or water quality (USDA Forest Service 1992a).

**SOIL 13** Steep slope operations utilizing tethered/winch assisted ground-based equipment will be limited to slopes less than 60 percent.

- a. Equipment should traverse steep slopes straight up and down with no sidehilling, equipment can weave between leave trees.



- b. Equipment must maintain traction to reduce soil displacement/rutting.
- c. Equipment, when able, should operate over continuous slash covered areas.

#### *Skid Trails and Landings*

SOIL14 No more than 15 percent of a harvest unit may be utilized for primary skid trails and landings. Use of existing legacy skid trails and landings is preferred over the creation of new features and when possible, do not blade off the topsoil (USDA Forest Service 2017).

SOIL15 Skid-trails, when applicable, shall be located on ridge tops, benches, or existing skid trails to minimize soil displacement and enhance drainage (USDA Forest Service 2017).

SOIL16 For all ground-based operations, skid trails should average 150 feet from center to center, except at converging locations. All material shall be skidded with the leading end clear of the ground to minimize soil displacement (USDA Forest Service 2017).

SOIL17 When skidding on fine textured soils (Auberry, Holland, and Ultic Haploxeralfs) with a high compaction hazard, traffic off the primary skid trails shall be limited to less than three passes with heavy equipment (USDA Forest Service 2017).

SOIL18 Skid trails intersecting forest roads shall be blocked with available material (large diameter wood or boulders) to prevent unauthorized access (USDA Forest Service 2017).

SOIL19 Erosion control measures shall be kept concurrent with operations on a seasonal basis need to remain effective at minimizing soil erosion and preventing concentrations of surface flow (USDA Forest Service 2017).

SOIL20 Subsoil (till) skid trails and landings when soil compaction exceeds 15 percent of a treatment area (USDA Forest Service 2017).

SOIL21 Subsoiling (tilling) shall be required in areas where excess soil compaction has been identified. Subsoiling will be accomplished by equipment that will lift and fracture the soil by vertical and lateral shattering, leaving soil loosened through the full width and depth of the compacted layer with the topsoil remaining substantially in place rather than being inverted (Kees 2008; USDA Forest Service 2017). Take note:

- a. Subsoiling equipment will be required to utilize winged-tip shanks over conventional shanks without winged tips.
- b. Subsoiling depth shall be determined by qualified soil scientist in the field; a lesser depth may be required if rocks or other limiting site conditions are encountered.
- c. Subsoiling shall be limited to periods when soil dryness will result in crumbled soil, avoiding the formation of large clods.

#### *Fuels Treatments*

SOIL22 Fuel reduction activities (machine piling using brush rakes or grapple heads) should retain greater than 50 percent of the existing surface organic matter layer and burn piles should be free of topsoil. The surface organic matter layer includes the O-horizon, needles, twigs, and coarser materials such as branches and logs (USDA Forest Service 2017).

SOIL23 When machine piling on fine textured soils (Auberry, Holland, and Ultic Haploxeralfs), light weight machinery (less than 6 PSI) should be utilized and operations should be on dry soils located on slopes less than 35 percent (USDA Forest Service 2017).



**SOIL24** Maintain 10 to 30 tons per acre of coarse woody debris to provide desirable quantities for soil productivity and protection (Brown et al. 2003; USDA Forest Service 2017). Coarse woody debris is considered as any dead standing or downed pieces larger than 3 inches in diameter.

**SOIL25** Within units identified with excessive topsoil displacement, fuels treatments shall be modified to preserve and rebuild the surface organic matter (USDA Forest Service 2017). This could include lopping and scattering of the fuels with no prescribed burning or leaving tree bole tops and masticating while preserving the coarser woody debris.

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**SOIL26** Activity created slash and existing surface fuels may be dozer piled on slopes less than 35 percent; on 35 to 45 percent slopes, utilize a grapple piler to minimize soil displacement. On slopes greater than 4 percent, fuels need to be hand piled, or lopped and scattered (USDA Forest Service 2017). Take note:

- a. While traversing steeper slopes, grapple pilers need to cross the slopes parallel to the natural contour of the landscape to minimize soil displacement.

**SOIL27** Limit tractor piling in those watersheds where cumulative watershed evaluation is a concern and use a grapple piler, especially on slopes greater than 25 percent (USDA Forest Service 1992a).

**SOIL28** Mastication operations should follow these general rules to minimize soil displacement (USDA Forest Service 2017):

- a. Whenever possible, equipment should travel over masticated material which acts as a cushion to reduce soil displacement and compaction.
- b. Minimize soil displacement and reduce the risk of soil erosion by smoothing or water barring ruts or trenches exceeding 6 inches in depth and 25 feet in length.
- c. While traversing steeper slopes, the equipment should cross the slopes parallel to the natural contour of the landscape to minimize soil displacement.

## **Terrestrial Wildlife**

**TW1** Four of the largest snags per acre will be retained (standard and guideline 11) where it is not a hazard to the public, fire fighters, or Forest Service personnel.

**TW2** Do not use landings that are within limited operating period areas during the limited operating period time for goshawks or spotted owls.

**TW3** Avoid establishing landings or staging areas within special status species occupied suitable habitats.

For protection of California spotted owl:

**TW4** Within home range core areas where feasible, retain at least 50 percent canopy cover averaged within the treatment unit (standard and guideline 7).

**TW5** If there is not a safety issue, maintain limited operating period for California spotted owls from March 1 through August 15, prohibiting vegetation treatments within one-quarter mile of the activity center during the breeding season, unless surveys confirm that California spotted owls are not nesting.



For protection of Pacific fisher:

**TW6 Key large tree denning structures needed by Pacific fisher should be retained to the extent possible.**

Unique wildlife structures

**TW7 Place piles at least 20 feet from snags, nest trees, trees with unique characteristics that are retained for wildlife. They should also be placed at least 20 feet away from the 25-foot buffers placed around fisher den trees and rest site clumps (fisher marking guidelines).**

**TW8 Slash/brush piles shall be ignited using a pattern that allows animals to escape the fire. For example, piles will be lit at one end, or an area will be left un-ignited to serve as an escape route.**

**TW9 Protect fisher den site buffers from disturbance with a limited operating period from March 1 through June 30 for vegetation treatments as long as habitat remains suitable or until another Regionally approved management strategy is implemented. The limited operating period may be waived for individual projects of limited scope and duration, when a biological evaluation documents that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location.**

**TW10 Treatments in Core 4, there will be a limited operating period implemented from March 1 through June 30 for mechanical treatment; March 1 to May 1 for prescribed fire; and March 15 to May 1 for pile burning (Spencer et al. 2016, pg. 60).**

Visual Resources

**VIS1 Implement prescribed fire treatments in patchy, irregularly shaped low intensity burn patterns to minimize tree scorching, restore mosaic vegetative patterns of heterogeneity, remove woody debris, and enhance regeneration of the understory (standard and guidelines 25 and 26a).**

**VIS2 Control lines and handlines for prescribed fire treatments should follow natural contours as much as possible (standard and guidelines 25, 26a, and 26d).**