INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Upper North Yuba Forest Health and Resilience Project

JULY 2018

PREPARED FOR:
Sierra County

Initial Study/Proposed Mitigated Negative Declaration

For the

Upper North Yuba Forest Health and Resilience Project

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ACRONYMS AND ABBREVIATIONS

BMP	best management practices
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CDFW	California Department of Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dbh	diameter at breast height
EA	Environmental Assessment
EIR	Environmental Impact Report
EOC	Emergency Operations Center
GHG	greenhouse gas emission
IS	Initial Study
IS/MND	Initial Study/Proposed Mitigated Negative Declaration
lb/day	pounds per day
LOP	limited operating periods
LUST	leaking underground storage tank
MT CO_2e	metric tons of a carbon dioxide equivalent
NHPA	National Historic Preservation Act
NOS	normal operating season
NRHP	National Register of Historic Places
NSAQMD	Northern Sierra Air Quality Management District
PM_{10}	10 microns or less
project	Upper North Yuba Forest Health and Resilience Project
RCA	Riparian Conservation Areas
RCO	Riparian Conservation Objectives
RPM	resource protection measures
SMAQMD	Sacramento Metropolitan Air Quality Management District's
SNC	Sierra Nevada Conservancy
SR	State Route
TES	Threatened, Endangered, or Forest Service Sensitive
TNF	Tahoe National Forest
USDA	U.S. Department of Agriculture
VQO	Visual Quality Objectives

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1 INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

This Initial Study/Proposed Mitigated Negative Declaration (IS/MND) has been prepared by Sierra County the to evaluate potential environmental effects resulting from the Upper North Yuba Forest Health and Resilience Project (project). Section 2 "Project Description" presents the detailed project information.

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An initial study is prepared by a lead agency to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]), and thus to determine the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a "public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The Initial Study shows that there is no substantial evidence…that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less-than-significant level." In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the project would not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report (EIR). By contrast, an EIR is required when the project may have a significant environmental impact that cannot clearly be reduced to a less-than-significant effect by adoption of mitigation or by revisions in the project design.

As described in the environmental checklist (Chapter 3), the project would not result in any unmitigated significant environmental impacts. Therefore, an IS/MND is the appropriate document for compliance with the requirements of CEQA. This IS/MND conforms to these requirements and to the content requirements of State CEQA Guidelines Section 15071.

Under CEQA, the lead agency is the public agency with primary responsibility over approval of the project. Sierra County is considering a discretionary action to receive $500,000 from the Sierra Nevada Conservancy to fund implementation of the project; as such, Sierra County is the lead agency. The purpose of this document is to present to decision-makers and the public information about the environmental consequences of implementing the project. This disclosure document is being made available to the public for review and comment. This IS/MND will be available for a 30-day public review period from July 5, 2018 to August 6, 2018.

Supporting documentation referenced in this document is available for review at the Sierra County office:

Sierra County Planning Department
101 Courthouse Square
Downieville, CA 95936
Phone: 530-289-3251

Comments or questions should be addressed to:

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101 Courthouse Square
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E-mail: bpangman@sierracounty.ca.gov

If you wish to send written comments (including via e-mail), they must be postmarked by August 6, 2018.

After comments are received from the public and reviewing agencies, Sierra County may (1) adopt the MND and approve the project; (2) undertake additional environmental studies; or (3) abandon the project. If Sierra County adopts the MND and authorizes the receipt of the grant award, then the project would proceed only after executing the required grant agreement and obtaining all necessary permits and other approvals.

1.2 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the project. Based on the issues evaluated in that chapter, it was determined that the project would have either no impact, a less-than-significant impact, or a less-than-significant impact with mitigation imposed related to all of the issue areas identified in the Environmental Checklist, included as Appendix G of the State CEQA Guidelines. These include the following issue areas:

- aesthetics;
- agriculture and forestry resources;
- air quality;
- biological resources;
- cultural resources;
- geology and soils;
- greenhouse gas emissions;
- hazards and hazardous materials;
- hydrology and water quality;
- land use and planning;
- mineral resources;
- noise;
- population and housing;
- public services;
- recreation;
- transportation/traffic;
- utilities and service systems; and
- mandatory findings of significance, including cumulative impacts.

1.3 ENVIRONMENTAL PERMITS

The project would qualify for Category 5b of the Central Valley Regional Water Quality Control Board's (CVRWQCB) Waste Discharge Requirements General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands (Board Order No. R5-2017-0061). This general order includes required standards for water quality protection during forestry activities, post project restoration, and monitoring (CVRWQCB 2017).

The U.S. Forest Service, Tahoe National Forest would be responsible for submitting required materials to the Central Valley Regional Water Quality Control Board before initiation of applicable project activities. The U.S. Forest Service would also be responsible for ensuring compliance with the terms of the General Order.

1.4 DOCUMENT ORGANIZATION

This IS/Proposed MND is organized as follows:

Chapter 1: Introduction. This chapter provides an introduction to the environmental review process. It describes the purpose and organization of this document as well as presents a summary of findings.

Chapter 2: Project Description and Background. This chapter describes the purpose of and need for the project, identifies project objectives, and provides a detailed description of the project.

Chapter 3: Environmental Checklist. This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if project actions would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, none of the impacts were determined to be significant after implementation of mitigation measures.

Chapter 4: References. This chapter lists the references used in preparation of this IS/MND.

Chapter 5: List of Preparers. This chapter identifies report preparers.

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2 PROJECT DESCRIPTION AND BACKGROUND

2.1 BACKGROUND

Sierra County and the Tahoe National Forest (TNF) are proposing the 267-acre Upper North Yuba Forest Health and Resilience Project, which is located on national forest system lands in the headwaters of the North Yuba River adjacent to State Route 49 east of the communities of Sierra City and Bassetts to Yuba Pass (Exhibit 2-1). This project is part of the larger landscape level Yuba Project that encompasses 14,545 acres of mixed conifer forest within the 450,000-acre headwaters of the North and Middle Yuba River (U.S. Department of Agriculture [USDA] 2018a).

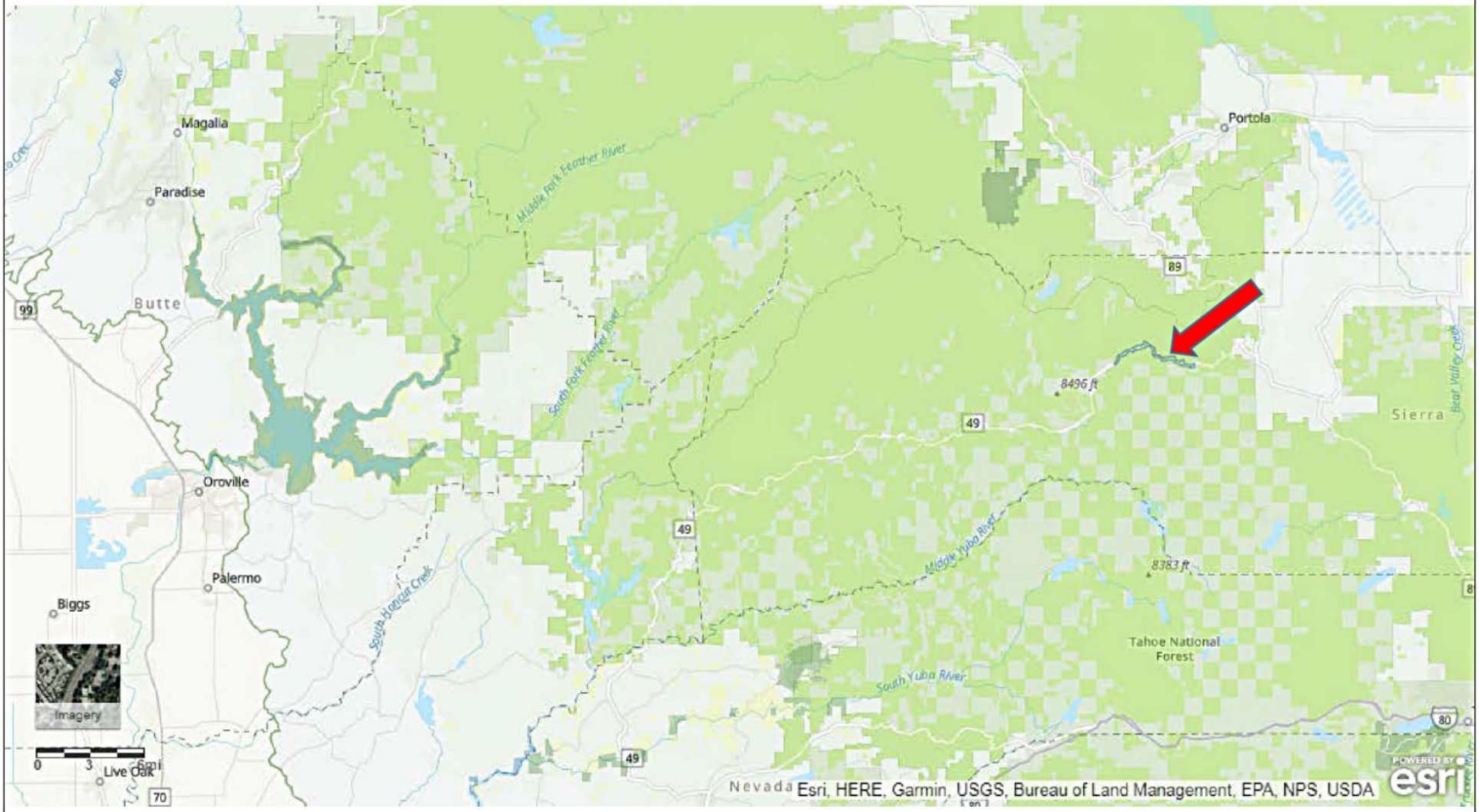
Sierra County, as one of the implementing partners, submitted a grant application to the Sierra Nevada Conservancy (SNC) for $500,000 of Proposition 1 Water Quality, Supply, and Infrastructure Improvement Bond Act funding for the Upper North Yuba Forest Health & Resilience Project. Therefore, although the project would be implemented on U.S. Forest Service lands, it is considered a project under the California Environmental Quality Act, and Sierra County is the lead agency under CEQA related to its role as an implementing partner. This IS/MND evaluates the 267-acre project, which was analyzed in the completed National Environmental Policy Act Environmental Assessment for the larger Yuba Project (USDA 2018a).

2.2 PROJECT LOCATION AND SETTING

The project area is located in the Yuba Ranger District, Tahoe National Forest, in the headwaters of the North Yuba River. Project treatments are located adjacent to State Route 49 east of the communities of Sierra City and Bassetts to just west of Yuba Pass (Exhibit 2-1). The elevation extends from approximately 5,450 feet near the community of Bassetts at the western end of the project area to approximately 6,500 feet at its highest point. Treatments would occur within 1,000 feet of the North Yuba River between the Carvin Creek homesites and Lunch Creek near Yuba Pass (Exhibit 2-2). Treatment units would occur in stands of Sierra Nevada mixed conifer, dominated by white fir (*Abies concolor*) and Jeffrey pine (*Pinus jeffreyi*), as well as in stands dominated by aspen (*Populus tremuloides*), where conifers have encroached into the stands over shading young aspen and reducing recruitment (USDA 2017a).

2.3 NEED FOR THE PROJECT

The project is necessary to increase forest health; maintain emergency access during wildfire; protect water resources; and preserve the health of aspen stands. In the absence of a natural fire regime within the project area, the dense growth of conifers competes with larger trees for water and nutrients, reducing forest health. State Route (SR) 49 is the major roadway accessing western Sierra County. As such, it provides the only ingress and egress in the North Yuba watershed for residents and for firefighting purposes during a wildfire. The dense understory vegetation and growth of conifers creates ladder fuels into large overstory trees and increases the likelihood of road closure during a wildfire emergency. A high intensity wildfire is also more likely to combust the forest floor and soil organic matter, causing the soils to become hydrophobic, which would increase water and sediment runoff into the channels. The past century of fire suppression has also allowed conifers to encroach into aspen stands, risking the long-term survival of aspens by shading them, competing for water, and lowering water tables because of increased transpiration.



Source: Prepared by Sierra County Public Works in 2018

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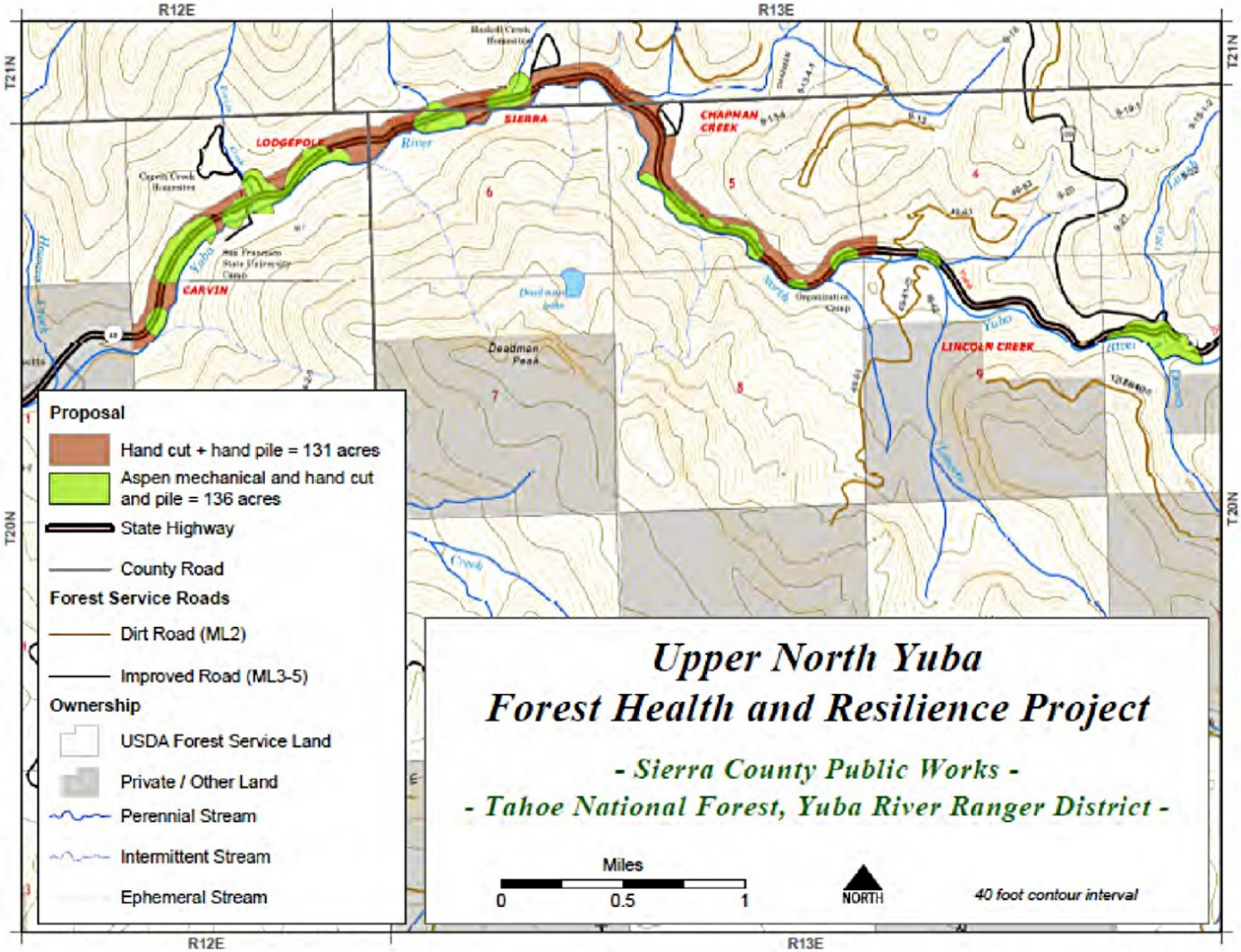
Exhibit 2-1

Project Vicinity

ASCENT ENVIRONMENTAL



Source: Prepared by Sierra County Public Works in 2018

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Exhibit 2-2 **Upper North Yuba Forest Health and Resiliency Project Treatment Units**

2.4 PROJECT OBJECTIVES

Fuels reduction treatments within Sierra mixed conifer stands would cut, pile, and burn understory shrubs and conifers less than 10-inches diameter at breast height (dbh). This would improve forest health by reducing competition among conifers, and it would reduce ladder fuels within 500-feet of SR-49, and within summer home tracts and the San Francisco State University Field Station. This would protect residences and ingress and egress routes for western Sierra County during a fire emergency. In addition, in reducing ladder fuels and protecting larger conifers, the fuels reduction would protect the scenic values along the highway from wildfire.

This project would also enhance aspen stands adjacent to SR-49 by removing encroaching overstory and understory conifers. Treatments would include retention of a proportion of large conifers at a density of approximately two trees greater than 30-inches (dbh) per acre. The aspen restoration treatments would, increase the water holding capacity of these areas by raising water tables, and enhance the diversity of plants and animals that use these areas, especially birds. Enhancing aspens would also improve and expand the scenic and recreational values of these vegetative communities along SR-49.

2.5 DESCRIPTION OF THE PROJECT

2.5.1 Fuels Reduction

The project includes implementation of fuels reduction treatments on approximately 131 acres of Sierra mixed conifer stands to meet fuels reduction goals (Exhibit 2-2). Hand thinning using chainsaws and other hand equipment would remove trees and shrubs less than 10-inches dbh. Crews of 10 to 15 people would conduct thinning and create piles by hand for later burning during. Access to these treatment units would be on existing roads, and the creation of new roads is not included in this project. This treatment also includes hazard tree removal. Removal of hazard trees would follow Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region (USDA 2012).

2.5.2 Aspen Restoration

The project would include implementation of aspen restoration using hand and mechanical treatments on approximately 136 acres. The maximum treatment area was determined by the distance surrounding an aspen stand (or where living aspen trees or sprouts are present) equal to 1 to 2 tree heights, depending on aspect, topographic features, and other site-specific conditions. The project would use hand crews with chainsaws, as well as equipment (e.g., feller-buncher, and skidder with a crew of 1-4 people) to remove both smaller diameter conifers (less than 10-inches dbh) and conifers greater than or equal to 10-inches dbh around individual aspen and cottonwoods and aspen stands in proposed units. Slash and small diameter trees would be piled for later burning. The project would retain existing snags greater than or equal to 20-inches dbh and 15-feet in height where it does not compromise safety. A proportion of conifer trees may be girdled to create snags; or topped, and either shaped, or platforms added to create nesting structures for great gray owls. All legacy conifers (USDA 2018a) within aspen stands would be retained. If legacy trees are not present, the project would retain up to two trees per acre of the largest trees equal to or greater than 30-inches dbh for all aspen stands that exceed 5 acres in area. The upper diameter limit selected for retention will vary as follows: At the stand level, aspen restoration objectives for conifer removal would be sufficient so that the aspen stand would not be expected to rank at a high or highest risk of loss because of overstory conifer shading within the next 50 to 70 years (USDA 2018a). If this objective can be met by retaining conifers 30” dbh and larger, then this would define the upper diameter limit of trees to be removed. If this

objective cannot be met, then the diameter limit will increase at 5-inch increments until it is met. Additionally, the project would include installation of temporary fencing as needed to prevent damage to aspens from browsing. Access to these treatment units would be on existing roads, and the creation of new roads is not included in this project.

2.5.3 Resource Protection Measures

The project includes resource protection measures to avoid and minimize impacts to sensitive resources as described in the Environmental Assessment for the Yuba Project (USDA 2018a). Those resource protection measures that are applicable to the Upper North Yuba Forest Health & Resilience Project are described below in Table 2-3. Appendix A includes a list of all water quality best management practices that apply to the Upper North Yuba Forest Health & Resilience Project and the larger Yuba Project.

Table 2-3 Resource Protection Measures Specific to the Upper North Yuba Forest Health & Resilience Project

Area of concern	Actions
Botany	
Avoidance of special-status botanical resources	Special status botanical occurrences (federally threatened and endangered, and Tahoe National Forest sensitive, Tahoe National Forest watch list) will be flagged and avoided for all ground disturbing activities with a buffer of 100 feet. Trees will be felled away from known occurrences. All federally threatened and endangered, and Tahoe National Forest Sensitive botanical species occurrences will be flagged before implementation and indicated on project maps.
Additional surveys	Surveys will be completed for *Lewisia kelloggii* before project implementation and all newly discovered populations will be flagged and avoided.
Placement of Burn Piles	Burn piles will not be placed in known special status botanical occurrences.
Cultural Resources	
Management of sites	Cultural resources are managed in accordance with provisions of the Regional Programmatic Agreement Regarding Compliance with Section 106 of the National Historic Preservation Act (USDA 2013). Cultural resources would be protected by designating known sites before start of the project. Sites would be designated by posting and/or flagging site boundaries. Cultural resource sites shall not be used as staging areas or for parking vehicles and equipment. Any project actions planned within site boundaries must be documented and approved by the Heritage Program Manager or delegated Heritage Program Staff (District Archaeologist).
Hand cutting and hand piling within sites	Hand cutting of vegetation is permissible within site boundaries. Hand piles may be established and burned within site boundaries only in specific areas designated by the District Archaeologist.
Felling and removal of trees above 10" DBH within sites	All trees above 10" DBH will be directionally felled to avoid cultural features and artifacts and either limbed up with the limbs hand piled, and the boles either left on site or fully suspended during removal from the site. Felled trees may be removed using only the following techniques: hand bucking including the use of chainsaws and hand carrying, rubber-tired loaders, crane self-loaders or helicopters. These operations require written approval by the District Archaeologist and an archaeologist must be on-site for these operations.
Management of linear features	Existing breaches may be used to cross linear features. New breaches may be designated by the District Archaeologist in accordance with the Regional Programmatic Agreement Regarding Compliance with Section 106 of the National Historic Preservation Act (USDA 2013). Trees should be directionally felled parallel to or away from linear features. Isolated trees inside of linear features may be felled on a case-by-case basis with on-the-ground approval of the District Archaeologist.
Aspen restoration	All arborglyphs should be marked with protective flagging. Competing conifers can be felled and removed following the protocols specified in Hand Cutting and Hand Piling within sites and Felling and Removal of Trees above 10" DBH within Sites above. These operations require written approval by the District Archaeologist and an archaeologist must be on-site for these operations.
Invasive Plants	
Equipment cleaning	All equipment and vehicles (Forest Service and contracted) used for project implementation must be free of invasive plant material before moving into the project area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris. Cleaning shall occur at a vehicle washing station or steam-cleaning facility before

Table 2-3 Resource Protection Measures Specific to the Upper North Yuba Forest Health & Resilience Project

Area of concern	Actions
	the equipment and vehicles enter the project area. Equipment used during emergency work or used exclusively on paved surfaces is exempt from the cleaning requirement. When working in known invasive plant infestations, equipment shall be cleaned before moving to other National Forest Service system lands. Avoidance areas will be identified on project maps.
Landings and staging area placement	Avoid disturbance and do not locate landings or stage equipment in known invasive plant infestations.
Avoidance areas	Invasive plant infestations will be avoided during equipment traffic and soil-disturbing project activities. Avoidance areas will be flagged before implementation and identified on project maps.
Revegetation of disturbed areas	As needed, revegetate landings/staging areas/parking areas/other openings created during project implementation. Seed and plant mixes must be approved the District Botanist or their designated appointee who has knowledge of local flora. Invasive species and persistent non-native species will not be intentionally used in revegetation. Native plant and seed material should be collected from as close to the project area as possible, from within the same watershed, and at a similar elevation whenever possible.
Forest Vegetation	
Borate	Apply a registered borate compound to cut conifer stumps > 14 inches diameter to reduce the chance of new infection centers being created through harvest activity. Within recreation or administrative sites, all stumps > 3 inches should be treated at the time the conifer is cut. Insure that direct application to stumps is made within 500 feet of perennial or intermittent streams, meadows, special aquatic features.
Protection of rust resistant sugar pine	During implementation of mechanical thinning and fuels reduction treatments, protect from damage by avoidance, raking duff, lining, or other measures listed above identified rust resistant sugar pine or other trees that have been identified as "superior." These trees provide a good genetic basis for seed collection.
Retain piles	Avoid piling within the dripline of large trees, snags, and large downed logs according to the silvicultural prescription for the unit. Select piles to retain, generally averaging one pile per acre, or as otherwise designated in the silvicultural prescription.
Aspen and cottonwood tree protection	For all treatments, avoid damaging and do not cut or remove aspen or cottonwood. Stage fall conifers to minimize damage to aspen, if necessary. Harvest activities within aspen stands will be coordinated with a riparian specialist to meet project objectives.
Aspen protection	Do not create burn piles within aspen stands, unless otherwise coordinated with the wildlife biologist.
Aspen protection	Where necessary, install temporary electric fencing to protect aspen regeneration from browsing animals.
Aspen protection	Utilize whole tree yarding to minimize slash within aspen stands when using ground-based equipment.
Silvicultural prescriptions	All hand and mechanical treatments will be implemented in accordance with a site specific silvicultural prescription. Silvicultural prescriptions will address the retention and recruitment of large snags, downed logs, coarse woody debris, and non-native invasive weeds.
Hazard trees	Distribution line and roadside hazard trees will be removed in accordance with Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region (USDA 2012). Roadside hazard trees would be removed from along Highway 49, Gold Lake Highway, and along maintenance level 2 and 3 National Forest system roads within the project area, as determined necessary.
Wildlife	
Sierra Nevada yellow-legged frog (*Rana sierra*)	For units where activities will occur within either habitat for the Sierra Nevada yellow-legged frog, or its designated critical habitat, environmental awareness training will be conducted for contract representatives, contract officers, project managers, and field personnel before the onset of project work. Training will include a briefing on the following: (1) How to recognize Sierra Nevada yellow-legged frogs, (2) The specific measures that are being implemented to conserve the species, (3) The penalties for non-compliance, (4) If a Sierra Nevada yellow–legged frog is encountered in the work area, work activities in that area shall cease until the species has moved from the area on its own volition. If any injured or killed Sierra Nevada yellow–legged frogs are found, work activities will immediately cease in the area and the District Biologist will be notified as soon as possible (and no longer than 24 hours) to take appropriate action.

Table 2-3 Resource Protection Measures Specific to the Upper North Yuba Forest Health & Resilience Project

Area of concern	Actions
Sierra Nevada yellow-legged frog	Expand the inner riparian buffer along intermittent drainages to 85' for mechanical disturbances in unit 85 unless an aquatic biologist determines that: (1) suitable habitat is not present, or (2) the habitat meets the definition of "verified unoccupied" according to the Biological Assessment.
Bats	Report all mine openings to a qualified biologist that are identified during project layout. Coordinate any marking of trees and all activities within 500 feet of mine openings.
Threatened, Endangered, or Forest Service Sensitive wildlife species	If new Threatened, Endangered, or Forest Service Sensitive (TES) species are listed or discovered or nesting TES are found within 0.25 mile of activities, a limited operating period may be implemented as recommended by a qualified biologist.
Snags	Design treatments to retain six of the largest snags per acre.
Meadow edge habitat	Coordinate all trees marked for removal or girdling within meadow edges with the wildlife biologist. Focus on lodgepole pine tree removal and thinning within the meadow edge to retain wildlife habitat within the meadow edge. Retain legacy trees and those showing signs of wildlife use (i.e. nests, cavities), and valuable wildlife characteristics (whorled or broken tops, evidence of fungal decay or heart rot). All trees greater than 20" dbh shall be reviewed by a qualified wildlife biologist before removal.
Coarse woody debris	Where available, retain coarse woody debris as identified in the silvicultural prescription for the unit. Recruit and retain cull logs and fall and leave hazardous snags described in the unit silvicultural prescription. Emphasize the largest sizes first to meet these conditions.
Watershed, Soils, and Aquatic Resources	
Establish Riparian Conservation Areas	Establish Riparian Conservation Areas (RCAs) for all streams, as specified below. Ensure Riparian Conservation Objectives (RCOs) are met within RCAs by adhering to the RCA Guidelines established in BMP 1.8 (Appendix A). These guidelines specify the types of activities that can be conducted within RCAs and mitigation measures to minimize impacts to streams and riparian ecosystems. RCA widths are as follows: **Stream Type Width of the Riparian Conservation Area** Perennial Streams 300 feet each side, measured from bank-full edge Seasonal Flowing Streams 150 feet each side, measured from bank-full edge Streams In Inner Gorge Top of inner gorge Meadows, lakes, and springs 300 feet from edge of feature or riparian vegetation, whichever is greater
Riparian Buffer	Outside of aspen restoration units: Establish a 100-foot "riparian buffer" zone along each side of perennial streams and special aquatic features, 50-foot "riparian buffer" along each side of intermittent streams and establish a 30-foot "riparian buffer" zone along each side of ephemeral streams. These zones provide for shade and coarse large woody debris to the stream channel and adjacent land. Within aspen restoration units, riparian buffers will be flagged on the ground in coordination with an aquatic biologist, hydrologist, and soil scientist to: (1) Maintain adequate shade to the creek to minimize adverse effects to water temperatures required for local species; (2) Minimize effects to riparian vegetation, (3) Maintain streambank stability and minimize risk of sediment entry into aquatic systems, (4) Minimize impacts to habitat for aquatic- and riparian-dependent species, (5) Limit disturbance to 20 percent or less of streambanks to reduce impacts to cover in aquatic habitats.
RCA Guidelines and Riparian Buffers	Outside of aspen restoration units, unless otherwise agreed to by an aquatic biologist and hydrologist, *no vegetation treatment or ground-disturbing activities will occur within Riparian Buffers. Directionally fell trees away from the riparian buffer.
Equipment within RCAs	Limit ground-based equipment to slopes less than 20 percent within all RCAs. Ground-based equipment may enter the RCA to retrieve tree bundles but is limited to 1-2 passes over the same piece of ground (and must be documented on harvest cards).
Storage of toxics	Fuels and other toxic materials will be stored outside of RCAs
Riparian Buffers Guidelines hand cut and pile	Unless otherwise agreed to by the project Hydrologist, Botanist, and the Aquatic Biologist, no hand cutting, or piling, will occur within the riparian buffer.

Table 2-3 Resource Protection Measures Specific to the Upper North Yuba Forest Health & Resilience Project

Area of concern	Actions
Riparian downed log recruitment	To recruit downed logs and minimize disturbance within riparian areas, fall and leave safety hazard trees within the perennial and intermittent "riparian buffer," unless otherwise agreed to by a hydrologist and aquatic biologist.
Landings within RCAs	No new landings will be located within RCAs. Consult with hydrologist or aquatic biologist before using an existing skid trail, landing, or road located within an RCA. Utilize existing landings and skid trails where possible. Locate skid trails at least 75 feet apart except where they converge near a landing. Trees would be directionally felled in tractor units to minimize the number of skid trails and associated ground disturbance. Use end-lining to designated skid trails.
Landings within Aspen and Meadows	Locate landings outside of aspen and meadows, unless otherwise coordinated with an aquatic biologist and hydrologist.
Slope limitations for ground-based equipment.	Limit the slopes on which tractor prescription activity takes place. To control erosion and soil disturbance, limit downhill tractor activity to less than 35% slopes and uphill to less than 25% unless the leading end is suspended. Tractor piling should be limited to 30% slopes and below.
Mechanical Piling	Maintain at least 70 percent effective soil cover during machine piling and maintain as much duff as possible.
Soil moisture	Allow mechanical operations only when soil moisture conditions are such that compaction, gullying, and/or rutting will be minimal. Equipment may operate on designated skid trails when soils are dry to a minimum of 4 inches. Low-ground-pressure equipment may operate off of designated skid trails when soils are dry to a depth of 4 inches. High-ground-pressure equipment may operate off of designated skid trails when soils are dry to a minimum depth of 8 inches. Off of designated skid trails, limit all equipment passes over the same piece of ground to reduce the potential for adverse soil compaction. Outside normal operating season (NOS) or during wet periods within the NOS, utilize the Tahoe National Forest Wet Weather Operations Guidelines.
Tilling landings and skid trails	At a minimum, till/sub-soil landings, portions of skid trails within 200 feet of landings with equipment such as a winged sub-soiler or other tilling device to a maximum depth of 24 inches so that the soil is lifted vertically and fractured laterally to alleviate detrimental compaction (where it occurs) following completion of all management activities. Tillage/sub-soiling will be completed 8 feet from the bole of larger trees so as not to impact root systems.
Soil cover	On ground-based harvest units, maintain at least 50 percent soil cover. As needed, add soil cover to compacted surfaces to limit accelerated erosion.
Large Woody Debris	On ground-based harvest units where existing large woody debris is not meeting Land Management Plan Standard and Guideline 55 (USDA 1990), achieve this standard on 85 percent of the unit area.
Visual Quality	
Highway 49 corridor	Maintain visual quality along the Highway 49 corridor by: where possible, provide screening for landing locations; keep landings as small as possible and as far away from highway as possible; dispose of landing material, including cull logs, as soon as practicable (preferably within 1 year); cut stumps within 50 feet of roadway to 8 inches or less, with slope away from roadway; mark cut trees on back side of tree, away from public view; emphasize varied spacing during mark to mimic a more natural appearance; hand pile un-utilized logging slash within 50 feet of roads within partial retention VQO (Visual Quality Objectives), and 150 feet within full retention VQO.

Source: USDA 2018a

2.5.4 Project Schedule

Implementation of the project would occur beginning in July 2019 and continuing through October 2020. All work would occur within daytime hours, typically between 7:00 a.m. and 7:00 p.m.

2.5.5 Long-term Management and Monitoring

The long-term management of this project would occur as part of the Sierra County Community Wildfire Protection Plan, Western Sierra County Strategic Fuels Reduction Plan, and Cal Fire's tier 1 & 2 zones. The U.S. Forest Service plans to maintain the project by burning the piles under favorable conditions as well as removing competing vegetation arising from seed beds and sprouts. This would serve as part of the on-going and long-term maintenance treatments of the project sites. Long-term monitoring by the U.S. Forest Service in similar areas across the Sierra Nevada have shown that the longevity of treatments are typically 10 years or less (USDA 2004). As the U.S. Forest Service follows up with pile burning, there would be associated photo monitoring to document the changes in fuels over time and maintenance or pretreatment needs.

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3 ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1. Project Title:	Upper North Yuba Forest Health & Resilience Project
2. Lead Agency Name and Address:	Sierra County 101 Courthouse Square P.O. Box 530 Downieville, CA 95936
3. Contact Person and Phone Number:	Brandon Pangman (530) 289-3251
4. Project Location:	Sierra County, California
5. Project Sponsor's Name and Address:	U.S. Forest Service, Tahoe National Forest 15924 Highway 49, Camptonville CA 95922
6. General Plan Designation:	Forest and Open Space
7. Zoning:	General Forest --- Scenic Corridor

8. Description of Project:

Refer Chapter 2, Project Description

9. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings)	Surrounding land uses include forest land, few private residences, lodging, campgrounds, and recreational facilities, such as trails.
10. Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement)	The project requires approval of financing by the Sierra Nevada Conservancy.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

    Sierra County notified the appropriate representatives of two tribal entities with details of the project on May 25, 2018 and received no responses. Tribal responses are taken into consideration for all projects and consultation is ongoing until all consulting parties are in concurrence on ways to avoid, minimize, or mitigate adverse effects to resources.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

- ☐ Aesthetics
- ☐ Agriculture and Forest Resources
- ☐ Air Quality
- ☐ Biological Resources
- ☐ Cultural Resources
- ☐ Geology / Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards & Hazardous Materials
- ☐ Hydrology / Water Quality
- ☐ Land Use / Planning
- ☐ Mineral Resources
- ☐ Noise
- ☐ Population / Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation / Traffic
- ☐ Tribal Cultural Resources
- ☐ Utilities / Service Systems
- ☐ Mandatory Findings of Significance
- ☒ None with mitigation

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☒ I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

☐ I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

July 5, 2018

Date

Brandon Pangman

Printed Name

Assistant Director, Sierra County Planning Department

Title

Sierra County

Agency

EVALUATION OF ENVIRONMENTAL IMPACTS

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

Environmental Topics Not Discussed Further

The project would have no impact on select resource areas; these topics are therefore not discussed further in this Initial Study (IS). A brief explanation about why the project would not affect these resources is provided below:

Agricultural Resources

There is no important farmland (Prime Farmland, Statewide Farmland, Unique Farmland) within the project area, and no agricultural operations currently take place. While the Mount Haskell Grazing Allotment within the project area is zoned for agriculture, there is no land within the project area under a Williamson Act Contract. The fuels reduction treatments within the Mount Haskell Grazing Allotment would not conflict with the land use designation of agriculture or convert land to a non-agricultural use. Thus, would be no impact to agricultural resources and the topic is not evaluated further in this IS.

Population/Housing

The project involves implementation of fuel reduction and aspen restoration during 2019 and 2020 with limited crews. The project would not induce substantial population growth in the area. None of the project activities would displace housing or people. Therefore, the project would have no impact on population and housing and the topic is not discussed further in this IS.

Land Use and Planning

Fuels reduction and aspen restoration would not change the existing land uses in the project areas, and the project does not propose any new land uses. The project area is on U.S. Forest Service lands and the project is consistent with the Sierra Nevada Forest Plan Amendment Record of Decision and the Tahoe National Forest Land and Resource Management Plan (U.S. Department of Agriculture [USDA] 1990, 2018a). The fuels reduction and aspen restoration treatments are also consistent with the portions of the project area that have Sierra County land use designations “Forest” and “Open Space” (Sierra County 2018). In addition, there are no established communities within the project area. Therefore, no impact to land use and planning would occur and the topic is not discussed further in this IS.

Mineral Resources

Mining operations are located near the project area (USDA 2018a). However, project activities which consist of fuels reduction and aspen restoration treatments would not result in the loss of availability of a known mineral resource. Therefore, no impact to mineral resources would occur and the topic is not discussed further in this IS.

Public Services

Implementation of the project would not include new residences or otherwise create a situation in which fire or police protection service ratios, response times, or other performance objectives could not be met. Because permanent population in the area would not be affected, there would not be an increased demand for schools or parks. The project does not include provisions of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities. Thus, there would be no impact and the topic is not discussed further in this IS.

Utilities and Service Systems

The project would result in short-term, temporary fuels reduction and aspen restoration activities in remote areas and would not impact existing utility infrastructure, induce growth, or result in new populations requiring additional utilities services. Therefore, no impact to utilities and service systems would occur and the topic is not discussed further in this IS.

3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1 Discussion

a) Have a substantial adverse effect on a scenic vista?

Less than significant. A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views—typically from elevated vantage points that offer panoramic views of great breadth and depth. The visual character of the project area is that of undeveloped dense forested lands of varying elevation, which is visible from some elevated vistas in the surrounding area.

There would be short-term aesthetic impacts during project implementation because forestry equipment and crews could be visible from elevated vistas in the area. However, these visible signs of forestry activities would be temporary and distributed throughout the 267-acre project area. Furthermore, the more visible mechanical equipment (feller-buncher and skidder) would only be used for a portion of aspen restoration activities, which would only occur over 136 acres. Given the density and expansiveness of the forest, the presence of small equipment and a few vehicles would not substantially alter the view from a scenic vista because equipment would be small relative to the forest and partially or totally screened by the existing mature trees.

The project includes fuels reduction on 131 acres of trees and shrubs less than 10 inches dbh, and Aspen restoration through hand and mechanical treatments to conifers. For the Aspen restoration, the project would remove both smaller diameter conifers (less than 10-inches dbh) and conifers greater than or equal to 10-inches dbh around individual aspen and cottonwoods and aspen stands. Slash and small diameter trees would be piled for later burning. These activities would result in some visible changes in the project area due to removal of vegetation and trees and creation of wood piles for future burning. However, the project would retain trees in a manner that would minimize the visual disturbance; the project would retain existing snags greater than or equal to 20-inches dbh and 15-feet in height where it would not compromise safety, and all legacy conifers within Aspen stands would be retained. In addition, if legacy trees are not present, the project would retain up to two trees per acre of the largest trees equal to or greater than 30 inches dbh for all aspen stands that exceed 5 acres in area. The upper diameter limit selected for retention would aim to keep larger trees intact – conifer removal would be sufficient so that the aspen stand would not be expected to rank at a high or highest risk of loss due to overstory conifer shading within the next 50 to 70 years; if this objective can be met by retaining conifers 30 inches dbh and larger, then this would define the upper diameter limit of trees to be removed. If this objective cannot be met, then the diameter limit will increase at 5-inch increments until it is met. Although fewer trees would the present in the project area, the forest would

appear similar to existing conditions, particularly from elevated vantage point, as it would continue to be undeveloped forest lands. As the natural progression of forest succession would occur, visible evidence of project disturbance would be reduced. Furthermore, the treatments would result in improved forest health, aspen restoration, and protection of the forest views by reduced risk of catastrophic wildfire that could drastically alter vegetation and views. Therefore, the project would result in a less-than-significant impact to scenic vistas.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than significant with mitigation incorporated. The project area is located adjacent to SR 49, a designated State Scenic Highway and Scenic By-Way. The project area is also within a locally designated Scenic Highway Corridor (Sierra County Code of Ordinances 15.12.280) and a Special Treatment Area – Scenic Corridor (Sierra County 2012). There would be short-term aesthetic impacts because of equipment and crews, when operating directly adjacent to SR 49, which could be visible from the highway. However, these visible signs of forestry activities would be temporary and distributed throughout the 267-acre project area. Furthermore, given the 65-mile-per-hour speed limit, visible signs of project implementation would only be visible to motorists for a very brief time and the resources that make this corridor scenic (e.g., undeveloped forest) would continue to dominate the view from the highway.

As described above in criterion a), hand and mechanical thinning would occur, which would result fewer trees along the highway in the project area. However, as previously described, the County would retain trees in a manner that would minimize the visual disturbance. Therefore, although fewer trees would the present in the project area, it would appear similar to existing conditions as it would continue to be undeveloped forest lands, and larger “legacy” trees would remain. Furthermore, as disclosed in Table 2-3 above, there is a resource protection measure specific to maintaining visual quality along SR 49. The resource protection measure would require that the project maintain visual quality along the Highway 49 corridor by: where possible, provide screening for landing locations; keep landings as small as possible and as far away from highway as possible; dispose of landing material, including cull logs, as soon as practicable (preferably within 1 year); cut stumps within 50 feet of roadway to 8 inches or less, with slope away from roadway; mark cut trees on back side of tree, away from public view; emphasize varied spacing during mark to mimic a more natural appearance; hand pile un-utilized logging slash within 50 feet of roads within partial retention Visual Quality Objectives (VQO), and 150 feet within full retention VQO. This resource protection measure would minimize the potential for the project to degrade scenic resources along SR 49 by minimizing the visibility of project disturbances (e.g., cut stumps, slash piles, landings) and by maintaining a varied tree spacing to retain a natural forest appearance.

The resource protection measure does not specifically address the retention of trees that screen existing development. While the project area is mostly undeveloped forest, treatments could occur adjacent to areas that include existing homes, cabins/summer homes, or other structures. These treatments could remove trees that visually screen existing development, which would make the existing development more visible from SR 49. If this were to occur, it could reduce the scenic quality of views from SR 49. Specifically, treatments near the San Francisco State University Field Campus and Carvin Creek homesites (approximately 0.75 miles east of Bassetts), the Haskell Creek Homesites (Approximately 2 miles east of Bassetts), and the residences approximately 0.65 miles west of the intersection of SR 49 and Yuba Pass Road could result in structures being more visible from SR 49.

Overall, the project would support variable forest structure and improved forest health and aspen restoration, which would improve the forest and protect forest views by reducing the risk of catastrophic wildfire that could drastically alter vegetation and views. However, in three locations the project has the potential to remove vegetation that visually screens existing development, which would make this development more visible from SR 49. This would be a potentially significant impact.

Mitigation Measure AES-1: Retain Screening of Existing Structures

- The project shall maintain visual screening of existing structures that could be visible from SR 49. Where existing structures are within 300 feet of SR 49, the U.S. Forest Service shall maintain trees, understory vegetation, and/or patches of dense vegetation that completely or partially screen the structures from view from SR 49 to the extent feasible while meeting project objectives. Screening vegetation shall be flagged or otherwise marked for retention before initiating treatments in the vicinity of existing structures. This mitigation measure applies to treatments adjacent to the San Francisco State University Field Campus and Carvin Creek homesites (approximately 0.75 miles east of Bassetts), the Haskell Creek Homesites (Approximately 2 miles east of Bassetts), and the residences approximately 0.65 miles west of the intersection of SR 49 and Yuba Pass Road.

With implementation of the RPM designed to maintain visual quality along SR 49 (Section 2.5.5 and Appendix A) and implementation of MM-AES-1, visible disturbance from the project would be minimized, treated areas would maintain a natural appearance, and visual screening of existing structures would be maintained. Thus, after implementation of MM-AES-1, the project would result in a less than significant impact related to State Scenic Highways.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than significant. The visual character of the project area is that of undeveloped dense forested lands of varying elevation; the visual quality is high. Viewer groups in the area consist of residents, recreationists, and motorists on SR 49. There are rural residences adjacent to the project area in Bassetts, an unincorporated community in Sierra County, and at Carvin and Haskell Creek Homesites. Multiple lodging facilities are also located adjacent to the project area, including Bassetts Station, High County Inn B&B, Sierra Campground, and Chapman Creek Campground.

As previously described, there would be short-term impacts to visual character and quality because of equipment and crews, which could be visible by any of the viewer groups. However, these visible signs of construction would be temporary and distributed throughout the 267-acre project area. Furthermore, given the density and expansiveness of the forest, the presence of small equipment and a few vehicles would not substantially degrade the existing visual character or quality of the site because it would be small relative to the forest and partially or totally screened by the existing mature trees.

As described above in criterion a), hand and mechanical thinning would occur, which would result fewer trees in the project area. However, the County would retain trees in a manner that would minimize the visual disturbance. Therefore, although fewer trees would the present in the project area, the forest would appear similar to existing conditions as it would continue to be undeveloped forest lands, and larger “legacy” trees would remain. As the natural progression of forest succession would occur, visible evidence of project disturbance would be reduced. Some visual effects would also be beneficial to viewers as scenic vistas are opened up, forest wildlife would be more visible, and forest environments would be able to sustain healthier vegetation. Furthermore, the treatments would result in improved forest health, aspen restoration, and protection of the forest views by reduced risk of catastrophic wildfire that could drastically alter vegetation and views. Therefore, the project would result in a less-than-significant impact to visual character and quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than significant. The project does not include the installation of new lighting fixtures or structures that could cause glare. Temporary construction equipment and vehicles could result in some limited sources of glare. However, because these visible signs construction and potential sources of glare would be short-term and largely screened from public views by the surrounding forest, this impact would be less than significant.

3.2 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.2.1 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant. The project is located in Sierra County, within the Mountain Counties Air Basin, which is regulated by the Northern Sierra Air Quality Management District (NSAQMD). There are no applicable air quality plans to evaluate consistency with, so this analysis relies on whether the project would contribute substantially to an existing air quality violation. Sierra County is designated as nonattainment for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) with respect to the California Ambient Air Quality Standards (CAAQS) (California Air Resources Board [CARB] 2017a).

Sources of project-related PM_{10} emissions include vehicles and equipment associated with the fuels reduction treatments and aspen restoration, as well as fugitive dust emissions from travel on unpaved roads. All travel on unpaved roads and use of mechanical equipment would comply with NSAQMD Rule 226: Dust Control, which requires the submittal of a Dust Control Plan to the NSAQMD for approval before any surface disturbance of more than one acre, including clearing of vegetation. All NSAQMD Recommended Dust Control Plan Conditions would be implemented, such as watering all areas with vehicle traffic, limiting vehicle speeds on unpaved roads to 15 miles per hour, and suspending all ground disturbance activities when winds are expected to exceed 20 miles per hour. With adherence to the NSAQMD Recommended Dust Control Plan Conditions, air pollutant emissions (including PM_{10}) associated with travel on unpaved roads would be minimal. Emissions have been modeled and are evaluated relative to the air district mass emissions thresholds, shown in Table 3.2-1. NSAQMD has developed a tiered approach to significance

levels; a project with emissions meeting Level A thresholds would require the most basic emissions reduction requirements, such as developing dust control measures.

Table 3.2-1 NSAQMD Air Pollutant Mass Emissions Thresholds

NSAQMD Threshold Level	PM_{10} (lb/day)
Level A	<79
Level B	79-136
Level C	>136

Notes: PM_{10} = respirable particulate matter; lb/day = pounds per day; because Sierra County is in attainment for ozone precursors, related emissions thresholds are not reported.

Source: NSAQMD 2007

Fuels reduction treatment consists of hand treatments, which would be implemented on approximately 131 acres of Sierra mixed conifer to increase forest heath, maintain emergency access during wildfire, and reduce ladder fuels. Sources of emissions include chainsaws and exhaust from vehicles used for worker commute. Aspen restoration would be implemented on approximately 136 acres of Sierra mixed conifer and consists of hand and mechanical treatments. Mechanical treatments would utilize heavy equipment such as a feller-buncher and skidder. This analysis conservatively assumes that all 136 acres would undergo mechanical treatments, which is more emissions intensive than hand treatments.

Emissions generated by project activities were estimated based on emissions factors from the California Air Resources Board (CARB) OFFROAD2007 program and by using the construction module of the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program. This modeling utilized project-specific data as well as CalEEMod default values that are based on the project's location and equipment horsepower and usage factors. Table 3.2-2 summarizes the maximum daily maximum PM_{10} emissions, conservatively assuming all activities occur concurrently. Refer to Appendix B for a detailed description of all calculations and assumptions.

Table 3.2-2 PM_{10} Emissions

Activity	PM_{10} (lb/day)
Fuels Reduction Treatments	0.20
Aspen Restoration	0.52
Total	**0.72**
NSAQMD Threshold	<79

Notes: PM_{10} = respirable particulate matter, lb/day = pounds per day

Emissions calculations provided in Appendix B

As shown in Table 3.2-2, maximum daily project emissions would reach 0.72 lb/day of PM_{10}, which is well below NSAQMD's air pollutant emissions significance threshold of 79 lb/day. Over the long-term, thinning of the forest fuels in the project area would reduce the likelihood of a large-scale wildfire, which would improve regional air quality by reducing potential emissions of associated criteria air pollutants and precursors. Considering this, and that project emissions would be below the applicable thresholds, impacts would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than significant. See criterion a), above.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than significant. Past, present, and future development projects contribute to adverse air quality on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. A project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Several air districts recommend using their mass emissions thresholds for evaluating whether construction-generated emissions of PM_{10} would be cumulatively considerable; that same approach has been adopted here.

As described under criterion a) above, Sierra County is designated as nonattainment for PM_{10}. As shown in Table 3.2-2, project emissions of PM_{10} would be 0.72 lb/day, which is well below the mass emissions threshold of 79 lb/day. Therefore, the project would not contribute a cumulatively considerable increase of those criteria pollutants; this impact is less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than significant. Sensitive receptors near the project area include: recreational users, residents, and private land owners. However, as described above under criteria a) and c), would not exceed significance thresholds and would not obstruct implementation of the applicable air quality plan. Furthermore, emissions-generating project activities would be temporary and dispersed throughout the project area, limiting the potential for substantial emissions to be in any one location for an extended period. Therefore, this impact would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less than significant. The project does not include new permanent odor sources (e.g., wastewater treatment plant, landfills). Equipment used in project activities could result in temporary diesel odors. However, emissions-generating project activities would be temporary and dispersed throughout the project area, limiting the potential for substantial odor emissions to be in any one location for an extended period. Therefore, this impact would be less than significant.

3.3 BIOLOGICAL RESOURCES

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

3.3.1 Discussion

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than significant with mitigation incorporated. Searches of the California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife [CDFW] 2018) and the California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered plants (CNPS 2018) were performed to determine if special-status species could occur in the project area. The CNDDB query looked for documented occurrences of special-status wildlife and plant species within 1-mile of the project area. The CNPS query looked for documented occurrences of special-status plant species within the Clio and Haypress Valley U.S. Geological Survey 7.5' quadrangles where the project is located, and the surrounding Johnsville, Blairsden,

Portola, Gold Lake, Calpine, Sierra City, Sattley, Graniteville, English Mountain, and Webber Peak U.S. Geological Survey 7.5' quadrangles. The Environmental Assessment (EA) for the Yuba Project (USDA 2018a) and project technical reports (USDA 2017a; USDA 2017b; USDA 2018b) were also reviewed to identify special-status species with the potential to occur in the project area.

Based on the data review, 25 botanical and 13 animal special-status species are known or have potential to occur in the project area and are subject to this CEQA review.

SPECIAL-STATUS SPECIES PREVIOUSLY ANALYZED FOR THE YUBA PROJECT

The EA for the Yuba Project (USDA 2018a) analyzed impacts to special-status species and adopted resource protection measures (RPMs) and best management practices (BMPs) to reduce adverse effects from the project on special-status species. The EA and supporting documents identified 18 USFS sensitive and four USFS watchlist plant species with potential to occur in the project area. One USFS watchlist plant species is known to occur within the project area, however this species has a California Rare Plant Rank of 4.3 which is not considered a rare plant under this CEQA analysis. As analyzed and discussed in the EA, project implementation could result in the crushing of special-status plants during fuels treatments, and hand and mechanical treatments in aspen stands. Indirect impacts to special-status plants could occur as a result of sediment run-off from mechanical treatments in aspen stands and increased competition from invasive plants should new introductions occur.

Special-status wildlife species addressed in the EA and supporting documents that are subject to this CEQA review are: Sierra Nevada yellow-legged frog (*Rana sierrae*), bald eagle (*Haliaeetus leucocephalus*), California spotted owl (*Strix occidentalis occidentalis*), great gray owl (*Strix nebulosa*), northern goshawk (*Accipiter gentilis*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), fringed myotis (*Myotis thysanodes*), pacific marten (*Martes caurina sierrae*), willow flycatcher (*Empidonax traillii*), and wolverine (*Gulo gulo*). None of these species are known to occur within the project area. As analyzed and discussed in the EA, project implementation could result in adverse effects on special-status animals including disruption of breeding due to noise and human activity, loss of individuals, and reduction in habitat quality.

Section 2.5.5, "Resource Protection Measures," of this initial study describes the subset of RPMs for the larger Yuba Project that apply to treatment units included in the Upper North Yuba Forest Health and Resilience Project (Exhibit 2.2), while Appendix A of this initial study describes the standard BMPs for U.S. Forest Service projects. These RPMs and BMPs would minimize or avoid adverse effects of project implementation on federally endangered, threatened, and USFS sensitive plant and wildlife species identified in the Yuba Project EA as having a potential to occur within the treatment units included in the Upper North Yuba Forest Health & Resilience Project, including:

- flagging special-status plant species occurrences and avoiding all ground disturbing activities with a buffer of 100 feet;
- placing burn piles outside of special-status plant species occurrences;
- cleaning equipment and vehicles to prevent new invasive plant introductions;
- reporting all mine openings to a qualified biologist that are identified during project layout, and coordinating any marking of trees and all activities within 500 feet of mine openings with a qualified biologist to avoid and minimize impacts to special-status bats (USDA 2018a);
- avoiding or minimizing impacts to Sierra Nevada yellow-legged frog by conducting awareness training, and restricting mechanical harvest within riparian conservation area (RCA) buffers unless suitable habitat is not present, or habitat is verified as unoccupied;

- implementing RCA buffers to avoid or minimize impacts to willow flycatcher habitat;
- minimizing impacts on Pacific marten by retaining trees showing signs of wildlife use and valuable wildlife characteristics and having all trees greater than 20" dbh reviewed by a qualified wildlife biologist before removal.

In addition to the project RPMs (Section 2.5.5, "Resource Protection Measures.") and BMPs (Appendix A), to avoid and minimize take of Sierra Nevada yellow-legged frog the project would implement additional conservation measures to contained in the Amendment of the Programmatic Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged Frog, and Threatened Yosemite Toad (USFWS 2017). With the implementation of RPMs, BMPs, and the additional conservation measures contained in the Programmatic Biological Opinion, impacts to special-status plant and wildlife species analyzed in the EA for the Yuba Project (USDA 2018a) would be less-than-significant.

SPECIAL-STATUS SPECIES NOT PREVIOUSLY ANALYZED FOR THE YUBA PROJECT

Plants

The query of the CNPS inventory identified 11 plant species (see Appendix C, Table C-1) considered rare in California but not specifically analyzed in the Yuba Project EA and technical reports (USDA 2017a; USDA 2017b; USDA 2018a; USDA 2018b). Considering suitable habitat within the project area and distribution of the species, three of these species could occur with the project area, rayless mountain ragwort (*Packera indecora*), seep kobresia (*Kobresia myosuroides*), and slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*). The proposed project does not include work within aquatic habitats, so direct impacts to the aquatic slender-leaved pondweed are unlikely. The project includes removal of conifers to restore aspen habitat, which although would provide long-term habitat benefits to these species, may result in crushing of rayless mountain ragwort and seep kobresia if the species is present. Also, ground disturbing activities within aspen restoration and fuels reduction units could result in introduction of invasive plants and run-off of sediment that could reduce habitat quality for these special-status plant species. The project RPMs and BMPs (Section 2.5.5, "Resource Protection Measures." and Appendix A) would minimize or avoid potential effects of invasive plants and sediment run-off on rayless mountain ragwort, seep kobresia, and slender-leaved pondweed, and their habitats. RPMs and BMPs that limit mechanical activities within RCAs and limitations on hand thinning and piling within riparian buffers (Section 2.5.5, "Resource Protection Measures.") would also reduce the likelihood that project activities would crush individual rayless mountain ragwort and seep kobresia. However, RPMs to flag and avoid federally threatened, endangered, or USFS sensitive plant species (Section 2.5.5, "Resource Protection Measures.") do not apply to rayless mountain ragwort and seep kobresia. Therefore, personnel, equipment, or construction of burn piles may crush rayless mountain ragwort and seep kobresia, which would be a potentially significant impact.

Mitigation Measure BIO-1: Conduct Surveys and Avoid or Compensate for Loss of Special-Status Plants

- Before project implementation and during the blooming period for rayless mountian ragwort (July through August) and seep kobresia (August), a qualified botanist shall conduct protocol-level surveys for rayless mountain ragwort and seep kobresia in areas where potentially suitable habitat would be disturbed by project activities.
- If rayless mountain ragwort or seep kobresia are not found, the botanist would document the findings in a letter report to CDFW and USFS and no further mitigation would be required.
- If rayless mountain ragwort or seep kobresia are found on the project site and are located outside of work areas or can be avoided, USFS would establish and maintain a buffer around special-status plants to be retained that would fully prevent disturbance to the plants.

- If rayless mountain ragwort or seep kobresia are found that cannot be avoided during project activities, USFS would consult with CDFW to determine the appropriate mitigation measures for direct and indirect impacts and would implement the agreed-upon mitigation measures to achieve no net loss of occupied habitat or individuals. Mitigation measures may include preserving and enhancing existing populations, creation of offsite populations on mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat and/or individuals. A mitigation and monitoring plan would be developed describing how unavoidable losses of rayless mountain ragwort or seep kobresia would be compensated.

- If relocation efforts are part of the mitigation plan, the plan will include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.

- Success criteria for preserved and compensatory populations would include:
  - The extent of occupied area and plant density (number of plants per unit area) in compensatory populations should be equal to or greater than the affected occupied habitat.
  - Compensatory and preserved populations should be self-producing. Populations would be considered self-producing when:
    - plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and
    - reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the project vicinity.
  - If offsite mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite conservation measures, the details of these measures would be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations.

With implementation of the RPMs designed to protect federally listed and USFS sensitive plant species during treatment activities (Section 2.5.5, “Resource Protection Measures”), Mitigation Measure BIO-1 to avoid or compensate for loss of other special-status plants, and BMPs (Appendix A) that would reduce run-off of sediment to suitable habitat, and because treatments are expected to improve habitat quality over the long term, potential disturbances to mountain ragwort, seep kobresia, and slender-leaved pondweed would be less than significant.

Wildlife

The CNDDB query identified two special-status wildlife species, not specifically analyzed in the Yuba Project EA (USDA 2018a), with recent (e.g., recorded in the last 20 years) occurrences within one mile of the project area; Sierra Nevada mountain beaver (*Aplodontia rufa californica*) and southern long-toed salamander (*Ambystoma macrodactylum sigillatum*).

Sierra Nevada mountain beaver

Sierra Nevada mountain beaver is a California Department of Wildlife (CDFW) species of special concern that is highly dependent on the presence of water and creates burrows and forages within riparian habitat (Zeiner et al. 1990, M052). CNDDB records indicate Sierra Nevada mountain beaver burrows outside of the project area along Deer Creek in 2013 and along Dorsey Creek in 2014 (CDFW 2018). These creeks form connections between the documented occurrences outside of the project area and suitable riparian habitat within the project area; therefore, Sierra Nevada mountain beaver may also occur within the project area. Hand and mechanical treatments within aspen stands would occur within suitable Sierra Nevada mountain

beaver habitat, and hand thinning within mixed conifer stands for fuels reduction would occur adjacent to suitable habitat. Project RPMs (Section 2.5.5, "Resource Protection Measures") and BMPs (Appendix A) would minimize potential adverse effects of project implementation on suitable Sierra Nevada mountain beaver habitat within RCAs. However, if Sierra Nevada mountain beaver occur within the project area, the cutting, piling, and yarding of trees within aspen stands could result in the collapse or fill of burrows, including active breeding sites. In addition, noise from mechanical and hand thinning activities may disrupt Sierra Nevada mountain beaver breeding activities. The death or injury of Sierra Nevada mountain beaver individuals or disruption of breeding would be a potentially significant impact.

Mitigation Measure BIO-2: Conduct Surveys and Avoid Disturbances to Sierra Nevada mountain beaver

- A qualified biologist shall conduct focused surveys for the presence/absence of active burrows for Sierra Nevada mountain beaver in suitable riparian habitat within proposed treatment areas and a 250-foot buffer (if feasible). The pre-treatment survey for active burrows shall be conducted no more than 30 days before activities are initiated each season. Sierra County and CDFW shall be notified of the results of the pre-treatment surveys.

- If active breeding/burrow sites are identified within 250 feet of project activities, the project shall implement limited operating periods (LOP) for these burrows before commencement of any treatment activities to avoid tree felling or access-related disturbances to breeding activities of Sierra Nevada mountain beaver. An LOP constitutes a period during which project-related activities (e.g., tree felling, piling, whole tree yarding) will not occur, and will be imposed between February 1 and July 31 within 250 feet of any active burrow sites. The period of the LOP, area within which it is implemented (e.g., 250-foot buffer), and activities allowed or prohibited within the LOP may be adjusted through consultation with CDFW and/or Sierra County. Sierra County shall be notified of the establishment of buffers and LOPs required to minimize or avoid impacts to Sierra Nevada mountain beaver.

With implementation of Mitigation Measure BIO-2, project RPMs, and BMPs, riparian habitats and active burrow sites for Sierra Nevada mountain beaver would be protected during treatment activities. Additionally, project implementation is expected to improve habitat quality over the long term. Therefore, the project would not substantially affect the distribution, breeding productivity, viability, or the regional population of Sierra Nevada mountain beaver, and potential impacts to this species would be less than significant.

Southern long-toed salamander

Southern long-toed salamander is a CDFW species of special concern that occurs within forests associated with meadows where snowmelt provides temporary ponds for breeding. Breeding typically occurs in late May or June, and migration may occur within approximately 3,280-feet of breeding habitat. In upland habitats, the species spends most of the year underground or under rocks, logs, and other similar locations (Zeiner et al. 1988, A003). CNDDB records indicate the presence of southern long-toed salamanders at Yuba Pass near the easternmost portion of the project area in 2004 (CDFW 2018). If sufficient ponding occurs to allow for completion of the aquatic portion of the species' lifecycle, the aspen stands where conifer removal treatments would occur are potentially suitable breeding habitat for this species. In addition, suitable upland habitat may be present in aspen restoration and fuels reduction treatment units within 3,280-feet of breeding habitat.

Project RPMs (Section 2.5.5, "Resource Protection Measures.") and BMPs (Appendix A) would minimize potential effects of project implementation on aspen stands that may contain suitable breeding and upland habitat, and fuels reduction treatments would not adversely affect upland habitat in mixed conifer stands. However, if southern long-toed salamander occurs within aspen restoration treatment units and fuels reduction treatment units, felling of trees and use of mechanical equipment could result in the death or injury of individuals above ground, and use of mechanical equipment within aspen stands could result in the fill or collapse of burrows resulting in entombment and death. This would be a potentially significant impact.

Mitigation Measure BIO-3: Conduct Surveys and Avoidance for Southern Long-toed Salamander

- Before project implemenation, a qualified biologist shall survey for southern long-toed salamanders in suitable breeding habitat within 3,280 feet of treatment units during the breeding season (May through June) (Thompson et al. 2016: pages 136-141). Suitable breeding ponds shall be searched for egg masses and the presence of larvae.

- If surveys of breeding habitat detect southern long-toed salamanders or egg masses, a limited operating period shall apply for all project activities with the potential to crush salamanders (e.g., e.g., tree felling, piling, whole tree yarding) within 3,280 feet of occupied breeding habitat during the dispersal season (May to July). Use of project vehicles shall only occur between sunrise and sunset during this period to avoid crushing dispersing salamanders. In addition, no mechanical treatments shall occur within 3,280 feet of occupied breeding habitat to avoid crushing southern long-toed salamanders in burrows, under logs, rocks and other refugia during the non-dispersal season.

- If implementation of a limited operating period and restriction of mechanical treatments are not practical, conduct surveys for southern long-toed salamander within the treatment units located less than 3,280 feet from occupied breeding habitat. Surveys would consist of "walk and turn" surveys of areas beneath surface objects (e.g., rocks, leaf litter, moss mats, coarse woody debris).

- If surveys within treatment units detect southern long-toed salamanders outside of breeding habitat, a qualified biologist shall relocate the salamanders outside of the unit and away from any ground disturbing activities.

With implementation of the RPMs designed to protect riparian and meadow habitats during treatment activities (Section 2.5.5, "Resource Protection Measures." and Appendix A), implementation of Mitigation Measure BIO-3 to avoid the potential injury or mortality of salamanders, and because the project is expected improve habitat quality over the long term, potential project-related disturbances to southern long-toed salamander would be less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Less than significant. The project includes conifer removal using hand and mechanical methods in aspen stands, which are classified as a sensitive natural community (CDFW 2018b), and fuels reduction treatments using hand thinning and hand piling in mixed conifer stands that are adjacent to the Yuba River, small streams, and associated riparian habitats. Mechanical and hand treatments would result in temporary soil and understory vegetation disturbance within aspen stands, and hand thinning adjacent to riparian habitats may result in disturbance of riparian vegetation from cutting of adjacent trees. Implementing the project RPMs (Section 2.5.5, "Resource Protection Measures") and BMPs (Appendix A) would avoid or minimize impacts from aspen restoration and fuels treatments on sensitive natural communities. For example, the project would implement RCA buffers, restrict use of mechanized equipment on slopes greater than 20 percent within all RCAs, and limit ground-based equipment use within RCAs to retrieve tree bundles to 1-2 passes over the same piece of ground, limit vegetation treatment within riparian buffers outside of aspen restoration units, and directionally fell trees away from riparian buffers. Implementation of RPMs would avoid substantial impacts on riparian habitat, aspen stands or other sensitive natural communities. In addition, removal of conifers from aspen stands would improve the health of these stands. Therefore, implementation of fuels reduction and aspen restoration treatments would result in a less-than-significant impact to sensitive natural communities.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than significant. The project area contains numerous streams and other aquatic features that are potential federally-protected wetlands. However, no work within waters of the United States is planned as part of the project, and as described in item b) above, implementation of project RPMs (Section 2.5.5, "Resource Protection Measures.") and BMPs (Appendix A) would avoid and minimize indirect effects of fuels reduction and aspen restoration activities on potential federally protected wetlands. Therefore, this impact would be less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than significant. The project includes fuels reduction in mixed conifer stands using hand thinning, and restoration of aspen stands by removing small conifers using hand and mechanical methods. These treatments would not result in a conversion of forested to non-forested land, or otherwise result in conditions that would impede the local or regional movements of wildlife or impede the use of native wildlife nursery sites. In addition, the removal of conifers within aspen stands would increase the long-term health of the stands, potentially improving nesting habitat for migratory birds associated with aspen stands. Therefore, the project would not substantially interfere with the use of nursery sites or the movement of migratory birds or other wildlife species. This impact would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than significant. The 2012 Sierra County General Plan contains the goal to protect and defend the county's abundant and diverse plant and animal species (Sierra County 2012). Section 13 of the general plan contains polices related to development that support this goal. The project would not conflict with these policies. This impact would be less than significant.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. No habitat conservation plans, natural community conservation plans, or other local, regional, or state conservation plans have been approved or adopted in Sierra County. Therefore, project implementation would not conflict with the provisions of an adopted conservation plan and would result in no impact.

3.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐
e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 21074?	☐	☐	☐	☒

3.4.1 Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less than significant. A 14,545-acre area has been inventoried for cultural resources by the U.S. Forest Service (Cultural Resource Report file #: R2010051700095) that included the project area. Prehistoric and historic archaeological sites and several isolated features are present in the area. As described in Table 2-3 above, several resource protection measures specific to the protection of cultural resources would be incorporated into the project. Resource protection measures include flagging known cultural site boundaries (including linear features and arboglyphs), which would be avoided during project implementation except for specific activities approved by a U.S. Forest Service archeologist. Mechanical equipment would not be operated within cultural resource sites, felling will be directed away from cultural sites. Project activities have been designed to avoid cultural resource sites eligible for inclusion in the National Register of Historic Places (NRHP) or as defined by section 15064.5, with the result that there would be no direct or indirect effects to cultural resources. Furthermore, project activities would fully comply with the National Historic Preservation Act (NHPA) and the Region 5 USFS Programmatic Agreement (USDA 2013). Therefore, this impact is less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant. See discussion a), above.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than significant. Hand and mechanical thinning would not include substantial ground-disturbing activities that would be expected to encounter paleontological resources or unique geologic features. However, should any paleontological resources be encountered during implementation of the project, all work would immediately cease in that area and the archaeologist specialist would be notified. Work could

resume after implementation of any recommended protection features and with approval by the archaeologist. This impact would be less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than significant. Hand and mechanical thinning would not include substantial ground-disturbing activities that would be expected to encounter human remains, including those interred outside of formal cemeteries. In accordance with existing regulations, if any human remains are discovered or recognized during project implementation, all ground disturbing activity would stop at in the vicinity of the remains and any nearby area reasonably suspected to overlie adjacent human remains until: the applicable County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin, ground disturbing activities would not resume until: the descendants of the deceased Native Americans have made a recommendation, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98; or the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission. As a result, this impact would be less than significant.

e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 21074?

No impact. On May 25, 2018, formal requests for consultation were sent by Sierra County to tribes that requested notification pursuant to AB-52 (United Auburn Indian Community of the Auburn Rancheria, and the Washoe Tribe of Nevada and California. Formal letters provided tribal leaders with a description of the project, maps of affected areas, and solicitations for comments or concerns. Tribal responses are taken into consideration for all projects and consultation is ongoing until all consulting parties are in concurrence on ways to avoid, minimize, or mitigate adverse effects to resources. Sierra County did not receive a request for consultation from any contacted tribes. Therefore, AB 52 consultation is considered complete and no known tribal cultural resources are located within the project area. There would be no impact.

3.5 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.5.1 Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

No impact. There are no delineated Alquist-Priolo Earthquake Fault Zones in the project area (California Department of Conservation [DOC] 2015; 2018). Thus, there would be no impact.

ii) Strong seismic ground shaking?

No impact. While the project area is not located within an Alquist-Priolo Earthquake Fault Zone, several potentially active faults pass through Sierra County, including the Mohawk Valley Fault, Dog Valley Fault, and the Polaris Fault (DOC 2018). While these faults are near the project area and could result in seismic-related effects (i.e., groundshaking) to residents and property, seismic hazard mapping indicates that overall Sierra County has low seismic hazard potential (DOC 2016). The project would not result in the construction of buildings near faults or otherwise increase the risk of exposure of people to strong seismic shaking. Thus, there would be no impact.

iii) Seismic-related ground failure, including liquefaction?

No impact. Related secondary effects of seismic activity include liquefaction. Department of Conservation Regulatory Maps indicate that there are no liquefaction zones near the project area (DOC 2015). The project would not result in the construction of buildings near faults or otherwise increase the risk of exposure of people to strong seismic shaking or liquefaction. Therefore, there would be no impact.

iv) Landslides?

Less than significant. The project would consist of fuels reduction and aspen restoration, through hand and mechanical thinning. These activities would not include construction of new structures or substantial ground disturbance or soil movement that could substantially increase exposure of people or structures to landslides. The overall goal of the project is to reduce the potential for a catastrophic wildfire event, which could eliminate all vegetation and increase the risk of landslide. Therefore, implementation of the project would reduce the risk of exposing people or structures to potential substantial adverse effects associated with landslides. Thus, the impact related to landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant. The project would consist of fuels reduction and aspen restoration, through hand and mechanical thinning. These activities would not include substantial ground disturbance or soil movement. In addition, resource protection measures and BMPs have been developed to limit erosion, as disclosed in Table 2-3 and Appendix A, respectively. For example, BMP 2.13 requires the development of a project specific erosion control plan to control or prevent erosion and sedimentation resulting from ground-disturbing activities. Therefore, this impact would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less than significant. See discussion a), above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

No impact. The project would not result in the construction of new buildings or otherwise increase the exposure of people or structures to expansive soils. Therefore, there is no impact related to expansive soils.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No impact. The project would not involve the use or installation of septic tanks or alternative waste water disposal systems where sewer is not available for the disposal of wastewater. Thus, there would be no impact.

3.6 GREENHOUSE GAS EMISSIONS

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

3.6.1 Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant. The project would consist of fuels reduction treatments and aspen restoration, which would result in the release of greenhouse gas emissions (GHGs). Sierra County does not have established GHG emissions significance thresholds and does not employ a specific strategy for mitigation of GHG emissions. The Northern Sierra Air Quality Management District (NSAQMD) currently has no guidance concerning CEQA evaluation of GHG emissions. Therefore, to evaluate whether the project would result in significant GHG emissions, this analysis uses the Sacramento Metropolitan Air Quality Management District's (SMAQMD) construction phase GHG threshold of 1,100 metric tons of carbon dioxide equivalents (MT CO_{2e}) per year (SMAQMD 2015).

Fuels reduction treatment consists of hand treatments, which would be implemented on approximately 131 acres of Sierra mixed conifer. Sources of GHG emissions include chainsaws and exhaust from vehicles used for worker commute. Aspen restoration would be implemented on approximately 136 acres of Sierra mixed conifer and consists of hand and mechanical treatments. Mechanical treatments would utilize heavy equipment such as a feller-buncher and skidder. This analysis conservatively assumes that all 136 acres would undergo mechanical treatments, which is more GHG emissions intensive than hand treatments.

Emissions generated by project activities were estimated based on emissions factors from the California Air Resources Board (CARB) OFFROAD2007 program and by using the construction module of the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program. This modeling utilized project-specific data as well as CalEEMod default values that are based on the project's location and equipment horsepower and usage factors.

Table 3.6-1 GHG Emissions Summary

Activity	Emissions Source	Emissions (MT CO_2e per year)
Fuel Reduction Treatments	Equipment	28.44
	Worker Trip	0.10
	Subtotal	28.54
Aspen Restoration	Equipment	528.34
	Worker Trip	0.04
	Subtotal	528.38

Table 3.6-1 GHG Emissions Summary

Activity	Emissions Source	Emissions (MT CO_2e per year)
Totals		**556.91**
GHG Threshold		1,100

MT CO_2e = metric tons of carbon dioxide equivalents

Modeling results provided in Appendix B

As shown in Table 3.6-1, the combined emissions of project activities are expected to produce approximately 556.91 MT CO_2e per year, which is below SMAQMD's construction phase GHG threshold. Furthermore, the fuels reduction treatments are intended to reduce fuel loads such that fewer, less frequent, smaller, and shorter duration wildfires would occur, which would reduce GHG emissions over time. Because the project not exceed the GHG emissions threshold and would result in less GHG emissions than would likely occur without the project, the impact would be less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than significant. In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will use to reduce GHGs. In May 2014, CARB released and subsequently adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2000 and 2012 (CARB 2014). After releasing multiple versions of proposed updates in 2017, CARB adopted the final version titled *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) in December (CARB 2017b). The 2017 Scoping Plan recognizes the role of California's Natural and Working Lands in meeting California's GHG reduction goals. These lands include both forests and rangelands and can act as both source and sink. The 2017 Scoping Plan recognizes that some actions taken to address ecosystem health may result in temporary, short-term reductions in sequestration, but are necessary to maintain forest health and reduce losses due to wildfire. The goals set forward for these landscapes include reducing vegetative fuels.

California's overall plan for climate adaptation is expressed in *Safeguarding California Plan: 2018 Update* (California Natural Resources Agency [CNRA] 2018). The plan provides policy guidance for state decision-makers and is part of continuing efforts to reduce impacts and prepare for climate risks. This plan highlights climate risks in eleven sectors in California, discusses progress to date, and makes sector-specific recommendations. One of the key sectors is forests, which emphasizes the strategies of:

- restoring and protecting forest ecosystem function by reintroducing fire and improving management, protecting California's forest base, and enhancing watershed health;
- supporting community resilience by rebuilding California's forest management workforce, expanding the extent and health of California's urban tree canopy, and advancing fire preparedness; and
- fostering creative solutions to sustainably utilize biomass from fuels reduction activities and to better understand climate trends in forests via research and monitoring (CNRA 2018).

Sierra County and the NSAQMD currently do not have local plans, policies or regulations adopted to reduce GHG emissions. Because the project would reduce vegetative fuels and implement forest management treatments consistent with the 2017 Scoping Plan and *Safeguarding California Plan: 2018 Update*, the impact would be less than significant.

3.7 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VIII. Hazards and Hazardous Materials. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport 3 plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

3.7.1 Discussion

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than significant. Project activities would require equipment that use hazardous materials, such as lubricants, gasoline, and oil. These materials could present health and safety risks if mishandled, inadvertently spilled, or disposed of incorrectly. In addition to potential on-site accidents that may expose workers, residents, or recreators to hazardous materials; off-site accidents during transport of hazardous materials and waste to or from the project area could expose the public and the environment to additional

risks. All activities would be subject to compliance with Federal, State, and local hazardous materials regulations, and would be monitored by the USFS and State (e.g., California Department of Occupational Safety and Health Administration and California Department of Toxic Substances Control). Therefore, it is anticipated that the routine uses of these materials handled in accordance with these laws and regulations would not create any impacts to the public or the environment. Furthermore, BMPs would be implemented to protect water quality from parking and staging areas and equipment refueling and servicing (BMP 2.10 and 2.11); refer to Appendix A for a full description of standard BMPs that would be implemented. Therefore, this impact would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less than significant. As described above under criterion a), project activities would involve the use of limited hazardous materials. However, it is anticipated that the routine uses of these materials handled in accordance with relevant laws and regulations and standard BMPs (see Appendix A) would not create any reasonably foreseeable upset and/or accident conditions on the public or the environment. This impact would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No impact. No schools are located within one quarter mile of the project area. There would be no impact.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. There is one documented hazardous materials site (Bassett's Station) located adjacent to the project area, west of the westernmost end of the project area at 100 Gold Lake Road in Sierra City (SWRCB 2018). Bassett's Station (T0609100011) is a leaking underground storage tank (LUST) site. The cleanup status of this site is completed, and the case was closed as of 7/1/2002. Given that cleanup has been completed and the case is closed, and that the project does not overlap with the site, there would be no impact to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. There are no airports within 2 miles of the project area. Thus, there would be no impact.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. There are no airports within 2 miles of the project area. Thus, there would be no impact.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant. Sierra County adopted the *Sierra County Emergency Operations Plan* in 1996. The plan provides a basis for coordination of operations and resources necessary to meet the requirements of an emergency, but does not include details such as a description of evacuation routes or coordination with public transit. The plan outlines the process for setting up the Emergency Operations Center (EOC) in the event of a disaster (Sierra County 1996). Implementation of the project would not interfere with EOCs or evacuation because the project is within the Tahoe National Forest and would not affect any potential EOC

locations or result in the closure of any major roadways or highways. Therefore, the impact to emergency access would be less than significant.

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than significant. The project would not include the construction of new structures that could increase exposure of people or structures to wildland fires. The project would result in long-term benefits related to exposure of people or structures to a substantial risk of loss, injury, or death involving wildland fire due to reductions of existing fuel accumulations in the project area. Therefore, the impact would be less than significant.

3.8 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IX. Hydrology and Water Quality. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.8.1 Discussion

a) Violate any water quality standards or waste discharge requirements?

Less than significant. The project's fuels reduction and aspen restoration treatments would qualify for Category 5b of the Central Valley Regional Water Quality Control Board's (CVRWQCB) Waste Discharge Requirements General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands (CVRWQCB 2017). The USFS would submit a notice of intent for the larger Yuba Project that would cover activities within the treatment units specific to the Upper North Yuba Forest Health and Resilience Project. The project would comply with all conditions of the General Order. Also see criterion c), below. Thus, the impact would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

No impact. The project consists of fuels reduction and aspen restoration treatments. These activities would not involve the use of groundwater or otherwise affect recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Thus, there would be no impact.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?

Less than significant. The project would include fuels reduction and aspen restoration treatments but would not include any grading or paving and would not alter the course of a stream or river. Hand thinning and hand piling would occur in fuels reduction units to reduce underbrush and remove trees less than 10-inches dbh, which would include minor ground disturbance. Aspen restoration would use hand thinning and mechanized equipment (e.g., feller-bunchers and skidders), however; the amount of disturbance to the existing drainage patterns would be nominal, and the risk to forest soils would be low with the inclusion of project RPMs (Section 2.5.5, "Resource Protection Measures") and BMPs (Appendix A) (USDA 2018a). The implementation of RPMs would minimize the potential for erosion and siltation of waters, from fuels reduction and aspen restoration activities through actions such as, limiting mechanical equipment within RCAs to slopes less than 20 percent, implementing RCA buffers, limiting ground-based equipment use within RCAs to retrieve tree bundles to 1-2 passes over the same piece of ground, and soil moisture criteria for operation of equipment. With the inclusion of these RPMs, the project would result in less-than-significant impacts related to erosion or siltation.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding?

Less than significant. See criterion c), above.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than significant. Implementation of the project does not include actions that would substantially alter runoff volumes, but the project would result in temporary soil disturbance that has the potential to result in polluted runoff water. Implementation of RPMs (Section 2.5.5, "Resource Protection Measures") and BMPs (Appendix A) would minimize potential water quality impacts, such as changes in dissolved oxygen, water temperature, and turbidity. RPMs include implementing riparian buffers outside of aspen restoration treatments restricting vegetation treatments and ground disturbing activities to outside of 100-feet of

perennial and 50-feet from intermittent streams. Disturbance of streambanks would also be limited to 20 percent or less to reduce impacts to stream cover. In addition, the project would qualify for Category 5b of the Waste Discharge Requirements General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands (CVRWQCB 2017), and implementation of the project would be consistent with the conditions of the general order. Through implementation of these protections as part of the project and permitting, this impact would be less than significant.

f) Otherwise substantially degrade water quality?

Less than significant. The project consists of fuels management and aspen restoration treatments. These activities are not anticipated to result in substantial soil disturbance, soil compaction, or reduction of ground cover. Further, as described above under criteria c) and e), the project includes RPMs (Section 2.5.5, "Resource Protection Measures") and BMPs (Appendix A) to prevent the substantial degradation of water quality. This impact would be less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. The project consists of fuels reduction and aspen restoration treatments. These activities would not include placement of housing within 100-year flood hazard areas. Thus, there would be no impact related to placement of housing within a 100-year flood hazard area.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No impact. The project consists of fuels reduction and aspen restoration treatments. These activities would not result in placement of any structures in a 100-year floodplain that would impede or redirect flood flows. Therefore, there would be no impact related to impediment or redirection of flood flows.

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No impact. The project consists of fuels reduction and aspen restoration treatments and there are no levees or dams upstream of the project area. Therefore, the project would have no impact related to exposure of people or structures to risk of levee dam failure.

j) Result in inundation by seiche, tsunami, or mudflow?

No impact. The project area is located inland (Exhibit 2-1), and is not located near any large water bodies that would be subject to a tsunami or seiche during a seismic event. The project (i.e., fuels treatments and aspen restoration treatments) would not introduce new people or structures into an area subject to inundation. Thus, there would be no impact.

3.9 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XII. Noise. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.9.1 Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Less than significant. Sources of noise in the project vicinity include existing rural residential land uses, noise from vehicles on area roadways, and noises generated by recreational and commercial use of National Forest lands in the project area. Sierra County has no adopted noise ordinance, but the Noise Element of the General Plan does provide a basis for comprehensive local noise policies and includes noise level standards for development projects.

Equipment associated with mechanical thinning and hand thinning treatments could generate varying levels of noise, depending upon the equipment being used, such as chainsaws and feller-bunchers. These activities would occur near residences and lodging facilities for short periods of time, where sensitive receptors are present. However, treatment activities are carried out in stages, during which the character and magnitude of noise levels surrounding the treatment area changes as different equipment is used and the location of the noise-generating work moves throughout the treatment areas. Thus, noise generated by the project would be short-term and sporadic. Furthermore, all work would occur during daytime hours (between 7:00 a.m. and 7:00 p.m.) and no new nighttime noise would result. Therefore, this impact would be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than significant. Substantial ground-borne vibration typically occurs as a result of blasting or piledriving activities, which would not occur as a part of the project. As described under criterion a) above, the project would require the use of forestry equipment, such as trucks, chainsaws, and feller-bunchers. Equipment used on the ground could generate groundborne vibration or groundborne noise near residences and lodging facilities where sensitive receptors are present. However, these activities would be temporary, sporadic, and occur for a short duration during daytime hours, and no excessive groundborne vibration or noise would be expected. This impact would be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No impact. The project consists of temporary hand and mechanical thinning operations and would not result in permanent increases in ambient noise levels. There would be no impact.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant. See response a), above.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The project is not located within an airport land use plan or within two miles of a public use airport, thus there would be no impact.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No impact. No private airstrips are not located near the project area. There would be no impact.

3.10 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.10.1 Discussion

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than significant. None of the project activities would result in the closure of surrounding recreational facilities. During active thinning and treatment activities, there would be an increase noise and some signs of construction would be visible to recreators in the immediate vicinity. It is unlikely that either would deter recreation in the area as they would be site-specific, short-term, sporadic, and move throughout the treatment areas. In addition, the project area is surrounded by National Forest Lands, which would provide adequate capacity for dispersed recreational uses if any are temporarily displaced during treatment activities. Although the use of other recreational facilities could increase, it would be short-term, and no substantial physical deterioration of the facility would occur. Furthermore, the project would reduce the risk of catastrophic wildfire, which would protect and enhance recreation uses in and around the project area. This impact would be less than significant.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No impact. The project would thin and treat 267-acres of forest land, which would reduce the risk of a catastrophic wildfire. It does not include any recreational facilities, nor would it require the construction or expansion of recreational facilities. There would be no impact.

3.11 TRANSPORTATION/TRAFFIC

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

3.11.1 Discussion

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than significant. Implementation of project activities would be expected to occur in short durations and on road vehicle use would be limited to the time periods during which work is occurring; primarily as a result of worker commute and to deliver equipment. Project activities would occur in a remote area where background traffic levels are not substantial. Thus, project traffic would not be substantial enough to affect an applicable plan, ordinance or policy related to transportation system performance. Project activities would occur along SR 49, but would not result in the temporary closure of the highway. This impact would be less than significant.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than significant. See discussion a), above.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. The project does not include construction of buildings or other structures that could affect air traffic patterns. There would be no impact.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than significant. During equipment delivery and removal, large slow-moving vehicles would need to turn on and off of SR 49. This would occur infrequently as equipment would be delivered at the start of thinning and treatment activities and would move throughout the project area until the project is complete. Furthermore, SR 49 in the project area is in a rural location with low levels of traffic. Therefore, the project would not substantially increase hazards due to a design feature or incompatible uses. The impact would be less than significant.

e) Result in inadequate emergency access?

No impact. The project would result in forest thinning activities within Tahoe National Forest. There would be no road closures or obstruction of any access, including by emergency vehicles in the event of an emergency. There would be no impact.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No impact. The project is in rural portions of Sierra County where public transit, bicycle, and pedestrian facilities are not available. There would be no impact.

3.12 MANDATORY FINDINGS OF SIGNIFICANCE

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVIII.	**Mandatory Findings of Significance.**				
a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

3.12.1 Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less than significant. As described above in Section 3.4, Biological Resources, the project would not substantially degrade the quality of the environment, substantially reduce the habitat or a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare, or threatened species. Also, as described in section 3.5, Cultural Resources, the project would not affect important examples of major periods of California history or prehistory. Therefore, the impact would be less than significant.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less than significant. Cumulative environmental effects are multiple individual effects that, when considered together, would be considerable or compound or increase other environmental impacts. Individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time or at different locations and over extended periods of time.

The Tahoe National Forest evaluated the potential for cumulative impacts that could occur with implementation of the project, and past and reasonably foreseeable future projects as part of the landscape level Yuba Project NEPA environmental document (USDA 2018a). In the NEPA document, cumulative effects to the following resource topics were evaluated: soil productivity, watershed effects, wildlife, aquatic species, threatened, endangered, or sensitive plant species, forest vegetation, wildland fuels and fire behavior, air quality, recreation, trails, Special Use Administrative site areas, and visual resources. The document found that no significant cumulative effects would occur as a result of the larger landscape level Yuba Project (see Section 2.1), which included this project.

Additional topics required under CEQA for evaluation include agricultural resources and forestry, cultural and tribal cultural resources, geology and soils, GHGs, hazardous materials and wastes, land use and planning, mineral resources, population and housing, public services, traffic and transportation and utilities. As discussed in Section 3 above under "Environmental Topics Not Discussed," the project would have no impact to agricultural resources and forestry, population and housing, land use and planning, mineral resources, public services, and utilities, and thus, would not result in a cumulatively considerable contribution to a cumulative impact for those for any of those resources.

The project would have less than significant impact to cultural and tribal cultural resources, geology and soils, GHGs, hazardous materials and wastes, noise and vibration, and traffic and transportation. The analysis provided throughout this Initial Study demonstrates that the project would not make a considerable contribution to associated cumulative impacts. The project impacts would be less than significant, short-term, and localized, and would not combine in such a way that a significant cumulative effect could occur. Furthermore, as described in Chapter 2, Project Description, the project includes resource protection measures and BMPs (Appendix A) that would avoid or minimize potential contribution to cumulative environmental impacts. Thus, cumulative impacts would be less than significant.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less than significant. The analysis throughout this Initial Study demonstrates that the project would not result in environmental effects that would cause substantial adverse effects on human beings. The project would result in temporary and dispersed forest thinning and treatment activities, which would result in air quality and GHG emissions, use of hazardous materials, and temporary noise from equipment use. However, all project-related impacts that could negatively affect human beings, such as air quality emissions, geology and soils, GHG emission, hazards and hazardous wastes, and noise would be less than significant as described and evaluated herein. Therefore, the project would not have environmental effects that could cause substantial adverse effects to human beings; this impact would be less than significant.

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4 REFERENCES

1 Introduction

Central Valley Regional Water Quality Control Board. 2017. Waste Discharge Requirements General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands (Board Order No. R5-2017-0061). Available: https://www.waterboards.ca.gov/centralvalley/water_issues/forest_activities/#forestwaiver.

CVRWQCB. *See* Central Valley Regional Water Quality Control Board.

2 Project Description

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Appendix A

Best Management Practices

Yuba Project
Water Quality
BEST MANAGEMENT PRACTICES
Luke Rutten, Hydrologist
Yuba River and American River Ranger Districts, Tahoe National Forest

Forest Management has long been recognized as a source of non-point water quality pollution. Non-point pollution is not, by definition, controllable through conventional water treatment plant methods. Non-point pollution is controlled by containing the pollutant at its source, precluding delivery to surface water. Sections 208 and 319 of the Federal Clean Water Act, as amended, acknowledge land treatment measures as being an effective means of controlling non-point sources of water pollution and emphasizes their development.

Working cooperatively with the California State Water Quality Control Board, the Forest Service developed pollution control measures, referred to as Best Management Practices (BMPs), that are applicable to National Forest System lands. The BMPs were evaluated by State Water Quality Control personnel as they were applied on site during management activities. After assessment of the monitoring data and completion of public workshops and hearings, the Forest Service's BMPs were certified by the State and approved by EPA as the most effective means to control non-point source pollution.

The land treatment measures incorporated into Forest Service BMPs evolved through research and development measures, and have been monitored and modified over several decades with the expressed purpose of improving the measures and making them more effective. On site evaluations of the control measures by State regulatory agencies found the practices were effective in protecting beneficial uses and were certifiable for Forest Service application as their means to protect water quality. The Clean Water Act provided the initial test of effectiveness of the Forest Service non-point pollution control measures by requiring evaluation of the practices by regulatory agencies (State Board and EPA) and the certification and approval of the practices as the "BEST" measures for control.

BMPs are designed to accommodate site specific conditions. They are tailor-made to account for the complexity and physical and biological variability of the natural environment. In the 1981 Management Agency Agreement between the State Water Resources Control Board and the Forest Service the State agreed that: "The practices and procedures set forth in the Forest Service document constitute sound water quality management and, as such, are the best management practices to be implemented for water quality protection and improvement on NFS lands." Further the Water Quality Control Plan for the Central Valley Regional Water Quality Control Board states "Implementation of the BMPs, in conjunction with monitoring and performance review requirements approved by the State and Regional Boards, is the primary method of meeting the Basin Plan's water quality objectives for the activities to which the BMPs apply."

Implementation and effectiveness of BMPs are evaluated following the R5 BMP Evaluation Program guidelines. Results of this monitoring as well as the results from other projects on the Tahoe National Forest and throughout the Region are used to fine tune BMPs including the CWE analysis.

Water quality should not be adversely impacted if current management direction along with the BMPs listed below are implemented. When these practices have been adhered to in the past they have been effective in maintaining water quality. Similar BMPs have been effective in protecting beneficial uses affected on the Tahoe National Forest. The practices specified herein are expected to be fully effective in maintaining the identified beneficial uses.

BMP's applicable to this project include those listed below. More information on these practices are included in the Region 5 Soil and Water Conservation Handbook FSH 2509.22.

1.1 Timber Sale Planning Process
1.2 Timber Harvest Unit Design
1.3 Determining Surface Erosion Hazard for Timber Harvest Unit Design
1.4 Using Sale Area Maps and/or Project Maps for Designating Water Quality Protection Needs
1.5 Limiting the Operating Period of Timber Sale Activities
1.8 Streamside Management Zone Designation
1.9 Determining Tractor-loggable Ground
1.10 Tractor Skidding Design
1.11 Suspended Log Yarding in Timber Harvesting
1.12 Log Landing Location
1.13 Erosion Prevention and Control Measures During Timber Sale Operations
1.14 Special Erosion-prevention Measures on Disturbed Land
1.16 Log Landing Erosion Control
1.17 Erosion Control on Skid Trails
1.18 Meadow Protection during Timber Harvesting
1.19 Streamcourse and Aquatic Protection
1.20 Erosion-control Structure Maintenance
1.21 Acceptance of Timber Sale Erosion-control Measures Before Sale Closure
1.22 Slash Treatment in Sensitive Areas
1.24 Non-recurring "C" Provisions that can be used for Water-quality Protection
1.25 Modification of the Timber Sale Contract
2.1 Travel Management Planning and Analysis
2.3 Road Construction and Reconstruction
2.4 Road Maintenance and Operations
2.5 Water Source Development and Utilization
2.6 Road Storage
2.7 Road Decommissioning
2.8 Stream Crossings
2.9 Snow Removal and Storage
2.10 Parking and Staging Areas
2.11 Equipment Refueling and Servicing
2.13 Erosion Control Plans (roads and other activities)
5.2 Slope Limitations Mechanical Equipment Operation
5.3 Tractor Operation Limitation in Wetlands and Meadows
5.5 Disposal of Organic Debris
5.6 Soil Moisture Limitations for Tractor Operations

6.1 Fire and Fuels Management Activities
6.2 Consideration of Water Quality in Formulating Fire prescriptions
6.3 Protection of Water Quality from Prescribed Burning Effects
7.1 Watershed Restoration
7.4 Forest Hazardous Substance Spill Prevention Control and Countermeasures Plan
7.7 Management by Closure to Use (Seasonal, Temporary, and Permanent)
7.8 Cumulative Off-site Watershed Effects

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Water Quality
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BMP's applicable to this project include those listed below. More information on these practices are included in the Region 5 Soil and Water Conservation Handbook FSH 2509.22.

BMP 1.1 – Resource Management Planning Process

The Interdisciplinary (ID) Team included a hydrologist, soil scientist, aquatic biologist, botanist, wildlife biologist, forester, fuels specialist, and transportation planner who identified sensitive resource areas and riparian conservation areas (RCAs). They identified specific mitigation measures for these areas as documented in the following BMPs and in soil ground cover retention needs. They also evaluated soil and watershed responses to the proposed fuels reduction activities including underburning, cut/pile/burn, mastication, and biomass/thin.

BMP 1.2 - Resource Management Unit Design

All resource management units are designed to secure favorable conditions of water flow and water quality by conforming to Forest Service standards and guidelines, National Forest Management Act (NFMA) requirements, and on-the-ground limitations. Consistent with equipment capabilities, units are generally bounded by roads and natural features such as ridges, minor stream channels, and riparian conservation areas (RCAs). Mitigations or changes needed to protect the soil resource and stream courses will be incorporated into the resource management unit design.

BMP 1.3 - Determining Surface Erosion Hazard for Resource Management Unit Design

The erosion hazard rating (EHR) determination is part of the pre-sale planning process, as input to the environmental document. Only trained and qualified Forest Service employees will establish the EHR for individual harvest units. An EHR was completed for all potential units using the Forest Soils Resource Inventory (SRI). For units with an overall EHR rated "high" (EHR = 13-29), mitigation measures will be applied which prevent the concentration of surface flows, such as designated skid trails or prohibition of ground-based equipment. Units with a "very high" erosion hazard rating (EHR = >30) will be reviewed by a soil scientist.

BMP 1.4 - Using Sale Area Maps and/or Project Maps for Designating Water-Quality Protection Needs

To ensure recognition and protection of areas related to water-quality protection, delineate on a sale-area map or a project map any of the following:

1. Location of stream courses and riparian zones to be protected, including the width of the protection zone required for each stream
2. Wetlands (meadows, lakes, springs, and so forth) to be protected
3. Boundaries of harvest units
4. Specified roads
5. Roads where log hauling is prohibited, or restricted
6. Structural improvement
7. Area of different skidding and/or yarding method application

8. Sources of rock for road work, riprapping, and borrow materials
9. Water sources that are available for purchasers' use
10. Other features that are required by contract provisions
11. Site preparation/fuel treatment

The interdisciplinary team will identify and delineate these and other features on maps, as part of the environmental documentation process. The Sale Preparation Forester will include them on the sale area map at the time of contract preparation. The sale administrator and the purchaser will review these areas on the ground before commencing harvest.

BMP 1.5 - Limiting the Operating Period of Resource Management Activities

The timing of project operations, including operating areas and erosion prevention and control, are controlled by the project implementation plan or by contract provisions requiring an operating plan and schedule. Contact provisions limiting the operating period for mechanical treatment will be added to restrict operations in units which have less than 4 inches of dry soil (BMP 5.6) or because of wet conditions.

BMP 1.8 - Streamside Management Zone Designation

Management in Riparian Conservation Areas (RCAs) needs to be consistent with Riparian Conservation Objectives (RCOs) and Aquatic Management Strategy (AMS) goals. The intent of management direction for RCAs is to (1) preserve, enhance, and restore habitat for riparian- and aquatic-dependent species; (2) ensure that water quality is maintained or restored; (3) enhance habitat conservation for species associated with the transition zone between upslope and riparian areas; and (4) provide greater connectivity within the watershed. Projects that propose activities in RCAs need to enhance or maintain the physical and biological characteristics of the RCA.

All associated Standards and Guidelines identified in the Tahoe National Forest Land and Resource Management Plan (Forest Plan) associated with this project will be adhered to.

The following are guidelines for establishing RCA widths (measured each side of stream from the apparent high-water mark or the edge of the special aquatic feature) along with equipment restrictions, and prescribed fire requirements:

Riparian Conservation Area Widths

Widths of RCAs vary with the type of water body. The types of water bodies are designated as follows: (1) perennial streams; (2) seasonally flowing streams (includes ephemerals with defined stream channel or evidence of scour); (3) streams in inner gorge; (4) special aquatic features (lakes, meadows, bogs, fens, wetlands, vernal pools, and springs); and (5) other hydrologic or topographic depressions without a defined channel. The Sierra Nevada Forest Plan Amendment ROD defines the widths of the RCAs as follows:

Riparian Conservation Widths

Stream Type	Width of the Riparian Conservation Area
Perennial Streams	300 feet each side, measured from bank full edge
Seasonal Flowing Streams	150 feet each side, measured from bank full edge
Streams In Inner Gorge	Top of inner gorge if beyond 300 feet*
Special Aquatic Features: Meadows, Springs, and Seeps	300 feet from edge of feature or riparian vegetation, whichever is greater

*Note: If inner gorge is present and extends beyond specified RCA width, the RCA width will extend to the top of the inner gorge. The inner gorge area is defined as slopes adjacent to the stream channel greater than 70% gradient.

Other hydrologic or topographic depressions without a defined channel will be protected through standard operating procedures during unit layout through administration of the contract.

Riparian Buffers

Riparian buffers will be established within all RCAs. The purpose of the riparian buffer is to minimize impacts from management activities to the stream-adjacent zone and riparian habitat. The following are specified widths of the riparian buffer related to stream types:

Perennial Streams and Special Aquatic Features
- 100 feet slope distance from the edge of the existing riparian vegetation.

Seasonal Streams (intermittent and ephemeral)
- Intermittent streams: 50 feet slope distance from the edge of the existing riparian vegetation or, if no riparian vegetation exists, from the apparent high water mark.

- Ephemeral streams: 30 feet from stream channel.

Equipment Restrictions

High-ground-pressure equipment (tractors, skidders, etc.) is limited to slopes less than 20% gradient within the RCA. New skid trails, landings or roads would not be constructed within any RCA without direct consultation with a riparian specialist. High-ground-pressure equipment is restricted to existing skid trails, landings, and roads within RCAs except to retrieve tree bundles. Consult with a riparian specialist on use of existing facilities. Within RCAs having slopes < 20% and outside of the riparian buffer, rubber-tired skidders may enter to retrieve tree bundles but are limited to 1-2 passes over the same piece of ground. Use of skidding equipment within RCAs must be reviewed on-the-ground by a riparian specialist and an aquatic biologist. Skid trails would be located outside of the RCA. Endlining within the RCA, outside of the riparian buffer must be approved prior to the activity by a riparian specialist. Designated skid trails crossing ephemeral stream channels may be approved for access to otherwise inaccessible areas, but only upon consultation with a riparian specialist. Note: to keep skid trails outside RCA during harvest operations, document on harvest cards if entering RCAs with high-ground-pressure equipment to retrieve tree bundles.

Mechanical piling for fuels reduction may occur within RCAs, outside of the designated riparian buffer, when such operations do not result in detrimental soil compaction and meets the slope, soil moisture, and minimum effective soil cover (ESC) requirements. Operations within the riparian buffer may be considered on a site-specific basis after consultation with a riparian specialist.

Low-ground-pressure equipment (feller buncher, excavator, etc.) is limited to slopes less than 20% gradient within the RCA. No equipment is permitted within the riparian buffer except on approved designated skid trails or on existing skid trails, landings, or roads. Consult with a riparian specialist on use of existing facilities.
Helicopter operations may occur within the RCA outside of the identified riparian buffer. Helicopter operations within the riparian buffer may be considered on a site-specific basis after consultation with a riparian specialist.

Skyline operations may occur within the RCA when full suspension is achieved throughout the riparian buffer and at least one end suspended within the remainder of the RCA.

Prescribed Fire Requirements

Perennial Streams and Special Aquatic Features **– "**design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs....identify mitigation measures to minimize the spread of fire into riparian vegetation." (Sierra Nevada Forest Plan Amendment – Record of Decision, Appendix A-56). The minimum effective soil cover (ESC) requirements are identified in the Tahoe National Forest Land and Resource Management Plan (Forest Plan) on page V-37. To minimize the spread of fire into riparian vegetation during prescribed fire activities, no direct ignition will occur within the riparian buffer. Fire may back into the riparian buffer. No pile burning will occur within the riparian buffers. The riparian buffer may vary in width if needed to achieve fuels or resource protection objectives upon field review by resource specialists. Burning prescriptions should be developed to retain ESC, coarse large woody debris (CWD), and standing snags throughout the RCA. Short-term reduction of CWD below soil quality standards, or standards in species management plans, may occur within strategically placed treatment areas (SPLATS) or the wildland urban intermix (WUI) zone.

Seasonal Streams - The minimum effective soil cover (ESC) requirements are identified in the Forest Plan on page V-37. To minimize the spread of fire into riparian vegetation during prescribed fire activities, no direct ignition will occur within a minimum 50-foot slope distance from the edge of the existing riparian vegetation of intermittent streams. Fire may back into these riparian buffers. No pile burning would occur within the respective riparian buffers. Buffers may vary in width if needed to achieve fuels or resource protection objectives upon field review by resource specialists. Burning prescriptions should be developed to retain CWD; however, a reduction of CWD below soil quality standards or standards in species management plans may occur within SPLATS or the urban wildland intermix zone. Within ephemeral stream RCAs, do not ignite within the stream channel. Pile burning may take place within ephemeral RCAs as long as piles are not placed within the stream channel.

BMP 1.9 - Determining Ground-Based Equipment Slope Limitation
Outside of RCA boundaries, tractors and other ground-based equipment will be allowed where slopes are generally less than 30 percent. Within RCA boundaries, ground-based equipment may be allowed if conditions in BMP 1.8 under "Equipment Restrictions" are met. This BMP applies to all areas where ground-based equipment operates.

BMP 1.10 - Tractor Skidding Design
Skid trails need to be designed to minimize the sediment yield potential of the units. Timber Sale Contract (TSC) provision C6.422 (Tractor Skidding Requirements), or the equivalent, is required on

all ground-based equipment units. The volume and velocity of runoff water will be modified to minimize erosion and sedimentation. This may involve designating and flagging skid trails, endlining, and/or falling to the lead. TSC provisions B6.42, B6.422, and C6.424, or the equivalent, will be used to control skidding and yarding, and landing and skid trail locations. No new skid trails or roads will be constructed within RCAs without direct consultation with a riparian specialist. Designated skid trails crossing ephemeral stream channels may be approved for access to otherwise inaccessible areas, but only upon consultation with a riparian specialist. This BMP applies to all units utilizing ground-based equipment.

BMP 1.11 - Suspended Log Yarding in Resource Management Operations
To protect soil from excessive disturbance and maintain integrity of the RCA, areas within the designated RCA and on slopes generally over 30 percent outside of RCAs, logs would be suspended either partially (outside of riparian buffer) or completely off the ground (inside riparian buffer). Yarding systems would include either helicopter or skyline yarders. The Timber Sale Administrator shall oversee the project operation using guidelines and standards established in the TSC, such as, TSC provisions C6.427 (Skyline Yarding) and/or C6.429 (Helicopter Yarding). This BMP applies to all skyline and helicopter units.

BMP 1.12 - Log Landing Location
Locate new landings or reuse old landings in such a way as to avoid watershed impacts and associated water-quality degradation. Landings will be located according to TSC provision B6.422. They will be located to avoid wetlands, unstable lands, and RCAs. The cleared or excavated size of landings will not exceed that needed for safe and efficient operations. Sites will be selected which involve the least excavation and soil erosion potential. Where possible, landings will be located on or near ridges and where skidding across drainages is minimized. They will be located where sidecast will neither enter drainages nor damage other sensitive areas. Existing landings may be used within RCAs when agreed to by a riparian specialist. The BMP applies to all units.

BMP 1.13 - Erosion Prevention and Control Measures During Resource Management Operations
Equipment will not be operated when ground conditions are such that excessive damage will result. The kinds and intensity of control work required of the purchaser will be adjusted to ground and weather conditions, with emphasis on the need to control overland runoff, erosion, and sedimentation. All erosion control work shall be completed within 15 days of completion of skidding operations relating to each landing or within 15 days of the Contract Administrator's on-the-ground designation of erosion prevention measures. Erosion control work shall be completed as promptly as possible after September 15. TSC provision B6.6 and C6.6, or the equivalents, are required in all contracts.

BMP 1.14 - Special Erosion Prevention Measures on Disturbed Land
To provide appropriate erosion and sedimentation protection for disturbed areas, the contractor shall spread slash, mulch, or wood chips (or, by agreement, some other treatment) on tractor roads, skid trails, landings or temporary road fills as provided for in TSC B6.6, C6.6, and C6.602. The Sale Preparation Forester will identify the acreage to be treated in the legend of the sale area map. The sale administrator will designate the specific areas to be treated on the ground.

BMP 1.16 - Log Landing Erosion Control
After landings have served the purchaser's purpose, the purchaser will ditch, or slope the landings, and may be required to subsoil to permit the drainage and dispersion of water. Erosion-prevention measures such as waterbars will be constructed to divert water away from landings.

Other provisions may include spreading slash, covering with mulch or wood chips, or applying straw mulch. Prevent road drainage from reaching landings. Unless agreed otherwise, cut and fill banks around landings will be reshaped to stabilize the area.

BMP 1.17 - Erosion Control on Skid Trails
Erosion control measures on skid trails and temporary roads will be completed by the contractor immediately after tree removal or prior to seasonal shut down. Cross ditches, water spreading devices, or backblading shall be agreed to by the Sale Administrator. These measures shall comply with Timber Sale Administration Handbook guidelines for spacing cross drains, construction techniques, and cross drain angles and heights. This BMP applies to all mechanically treated units.

BMP 1.18 – Meadow Protection during Timber Havesting
The timber sale contract prohibits unauthorized operation of vehicular or skidding equipment in meadows or in protection zones designated on sale area maps and marked on the ground. Vehicular or skidding equipment is not to be used on meadows except when specifically approved by the sale administrator. Where feasible, directional felling will be used to avoid felling trees into meadows. Unless otherwise agreed, trees felled into meadows will be removed by end-lining, slash removed, and resulting disturbance will be repaired where necessary to protect vegetative cover, soil, and water quality.

BMP 1.19 - Streamcourse and Aquatic Protection
Guidelines for activities within RCAs are presented in BMP 1.8 which outlines equipment restrictions, vegetation management requirements, and prescribed fire requirements. TSC provisions B6.5, B6.6, C6.427, C6.5, and C6.6, or the equivalent, will be implemented for streamcourse protection. These provisions cover proper location and methods of streamcourse crossings, equipment exclusion zones, endlining, erosion control needs near channels, and removal of material from temporary crossings. This BMP must be consistent with BMPs 1.8 and 5.3.

BMP 1.20 - Erosion-control Structure Maintenance
During the period of the timber sale contract, the purchaser will provide maintenance of soil erosion-control structures constructed by the purchaser until they become stabilized, but not for more than one year after their construction. After one year, accomplish needed erosion-control maintenance work using other funding sources under timber sale contract provisions B4.225, B6.6 and B6.66, or the equivalent. The Forest Service may agree to perform such maintenance, if requested by the contractor, subject to agreement on rates. If the contractor fails to do seasonal maintenance work, the Forest Service may assume the responsibility and charge the contractor accordingly.

BMP 1.21 - Acceptance of Resource Management Operations Erosion-Control Measures before Sale Closure
TSC provisions B6.6, B6.62, B6.63, B6.64, B6.65, B6.66, and C6.6, or the equivalent, specify erosion prevention and control measures, and maintenance of such measures, for landings, skid trails, fire lines, etc. Planned erosion control work will be inspected prior to project completion to determine whether the work will be approved as adequate, if maintenance work is needed, the practicality of treatments, and the necessity for modifying standards. Erosion control work will be

approved as acceptable if there is only minor deviation from standards, provided no major or lasting damage is caused to soil or water. Erosion control work which fails to meet these criteria will not be accepted and will be redone to accepted standards.

BMP 1.22 - Slash Treatment in Sensitive Areas
Units which include RCAs for perennial and intermittent streamcourses must meet effective soil cover goals stated in the standard and guidelines of the Forest Plan. Within sensitive areas, slash treatments would include hand pile and burn, lop and scatter, and hand pile and leave to create cover piles for small mammals. Fuels treatment within RCAs, including the use of heavy equipment, must meet effective soil cover goals in RCAs, or unit-wide (if applicable).

BMP 1.24 - Non-recurring "C" Provisions that can be used for Water-quality Protection
Contract provisions will be developed as needed to ensure that adequate soil, water, or watershed values are protected as part of the project contract.

BMP 1.25 - Modification of the Timber Sale Contract
Contract provisions will be included which allow for contract modification if new circumstances indicate the project will irreversibly damage soil, water, or watershed values. The project modification can be accomplished by agreement with the contractor, or unilaterally by the Forest Service (with suitable compensation to the contractor) using an amended environmental document prepared by an ID Team.

BMP 2.1 - Travel Management Planning and Analysis
Use the travel analysis and road management planning processes to develop measures to avoid, minimize, and mitigate adverse impacts to water, aquatic, and riparian resources during road management activities, contribute toward restoration of water quality where needed, and identify the road system which can be effectively maintained.
Conduct Travel Analysis to determine the minimum road system needed for safe and efficient travel, administration, utilization, and protection of forest land and water resources. Identify current and future needs and uses of each NFS system and unauthorized road.

Identify and prioritize mitigation measures for existing roads that cause resource or watershed impacts. Mitigation measures may include any of the following:

a. Relocating road segments that adversely impact soil or water resources.
b. Reconstructing road segments to modify, improve, or restore road drainage.
c. Improving roads with deferred maintenance needs to current standards.
d. Improving stream crossings to accommodate bedload and debris, and provide for aquatic habitat and passage.
e. Hardening road surfaces (that is, running surface or inside ditches) to prevent the generation of fine-grained surface material and/or armor portions of the road prism subject to concentrated runoff.
f. Putting roads in storage, while maintaining hydrologic and geomorphic functionality of drainage features (see BMP 2.6 - Road Storage).
g. Closing roads seasonally to protect water resources.
h. Restoring surface and subsurface hydrologic properties by removing roads from sensitive environments including riparian areas and meadows. May include relocation or decommissioning.
i. Permanently closing roads that cause significant adverse impacts to soil or water resources.

j. Decommissioning or converting unnecessary roads to other uses, such as trails (see BMP 2.7 - Decommissioning). Assess risk of impact to water quality by decommissioning, placing road in storage, or converting to other use, and various treatments for each option.

BMP 2.3 – Road/Trail Construction and Reconstruction
Minimize erosion and sediment delivery from roads and trails during construction or reconstruction, and their related activities. Temporary and long-term erosion-control measures are necessary to reduce erosion and maintain overall slope stability. These erosion-control measures may include vegetative and structural techniques to ensure the area's long-term stability.

1. Implement the approved erosion control plan that covers all disturbed areas, including borrow areas and stockpiles used during road and trail management activities (see BMP 2.13- Erosion Control Plan). Include the wet weather/winter operations agreement.
2. Maintain erosion-control measures to function effectively throughout the project area during construction and reconstruction, and in accordance with the approved erosion control plan (see BMP 2.13- Erosion Control Plan).
3. Comply with BMP 2.11 - Equipment Refueling and Servicing.
4. Do not permit sidecasting within the RCA. Prevent excavated materials from entering water ways or RCAs.
5. Schedule operations when rain, runoff, wet soils, snowmelt or frost melt are less likely.
6. Limit operation of equipment when ground conditions could result in excessive rutting, soil compaction (except on the road prism or other surface to be compacted), or runoff of sediments directly to streams.
7. Locate and design trails with minimal resource damage including risks to water, aquatic, and riparian resources. All resource-coordinating instructions for the protection and prevention of damage to National Forest lands, resources, and ecological systems including wetlands and floodplains shall apply to the planning, development, and operation of trail facilities.

BMP 2.4 - Road Maintenance and Operations
The road system will be inspected prior to the operating season; problem areas will be identified and corrected. The Forest Service and contractor will agree on an annual Road Maintenance Plan. Road maintenance plans are implemented through contract, cooperators, force account, and active timber sale or other authorized activities.

The contracting officer's representative is responsible for assuring compliance by contractors; engineering representative, TSA, or FSR assures compliance by cooperator, purchaser or permitted operator.

1. Maintain road surfaces to dissipate intercepted water in a uniform manner along the road by outsloping with rolling dips, insloping with drains, or crowning with drains. Where feasible and consistent with protecting public safety, utilize outsloping and rolling the grade (rolling dips) as the primary drainage technique.
2. Adjust surface drainage structures to minimize hydrologic connectivity by: a. Discharging road runoff to areas of high infiltration and high surface roughness.
b. Armoring drainage facility outlet as energy dissipater and to prevent gully initiation.
c. Increasing the number drainage facilities with RCAs.
3. Clean ditches and drainage structure inlets only as often as needed to keep them functioning. Prevent unnecessary or excessive vegetation disturbance and removal on features such as swales, ditches, shoulders, and cut and fill slopes.

4. Minimize diversion potential by installing diversion prevention dips that can accommodate overtopping runoff. a. Place diversion prevention dips downslope of crossing, rather than directly over the crossing fill, and in a location that minimizes fill loss in the event of overtopping.
b. Armor diversion prevention dips when the expected volume of fill loss is significant.
5. Maintain road surface drainage by removing berms, unless specifically designated otherwise.
6. Install and preserve markers to identify and protect drainage structures that can be damaged during maintenance activities (that is, culverts, subdrains, and so forth).
7. When grading roads or cleaning drainage structure inlets and ditches, avoid undercutting the toe of the cut slope.
8. Grade road surfaces in accordance with road management objectives and assigned maintenance level. Grade only as needed to maintain a stable running surface and adequate surface drainage.
9. Accompany grading of hydrologically connected road surfaces and inside ditches with erosion and sediment control installation.
10. Enforce pre-haul maintenance, maintenance during haul, and post haul maintenance (putting the road back in storage) specifications when maintenance level 1 roads are opened for use on commercial resource management projects. Require the commercial operator to leave roads in a satisfactory condition when project is completed.
11. Restrict or prohibit road use during periods when such use would likely damage the roadway surface or road drainage features are identified through Travel Analysis and Travel Management, and implement through enforcement of motor vehicle use map. Changes in road management are supported by appropriate analysis.

BMP 2.5 -Water Source Development and Utilization
Water sources will be designed to minimize streamflow fluctuation, maintain water quality and protect fish habitat while providing water for abating dust on roads during road reconstruction activities and log hauling. At no time shall downstream flow be reduced to a level detrimental to aquatic resources, fish passage or other beneficial uses as outlined in Appendix F of the TNF LRMP. Critical to the effectiveness of this practice is the coordination of engineering representatives, hydrologists, fishery biologists, and sale administrators. Locate existing developments, or proposed streams, and evaluate for feasibility of use; determine scope and scale of environmental risks; select techniques for mitigating disturbance to water quality; and compare with the economics of development and use.

Road approaches and drafting pads shall be treated to prevent sediment production and delivery to a watercourse or waterhole. Road approaches shall be armored as necessary from the end of the approach nearest a stream for a minimum of 50 feet, or to the nearest drainage structure (for example, waterbar or rolling dip) or point where road drainage does not drain toward the stream.

Where overflow runoff from water trucks or storage tanks may enter the stream, effective erosion control devices shall be installed (for example, gravel berms or waterbars).

All water-drafting vehicles shall be checked daily and shall be repaired as necessary to prevent leaks of petroleum products from entering RCAs.

BMP 2.6 - Road Storage
Ensure that roads placed in storage are maintained to so that drainage facilities and runoff patterns function properly, and damage to adjacent resources is prevented. Stored roads are managed to be returned to service, at various intervals. Only roads that are needed in the future will be considered for storage.

The risk from roads in Intermittent Stored Service condition can be managed by using the appropriate techniques from the following list adapted as needed to local site conditions. Project crew leaders and supervisors are responsible for ensuring that force account projects meet road closure procedures standards. Contracted projects are implemented by the contractor, or operator. Compliance with plans, specifications, and operating plans is ensured by the contracting officer's representative, engineering representative, or Forest Service representative. Permitted use of stored roads requires restoring the road to its previous stable condition after use by the permittee, as enforced by the permit administrator.

The forest watershed staff will work with the forest engineering staff to identify which culverts pose a threat to water quality and must be removed before a road is placed in storage. Road-stream crossings deemed safe to leave in stored roads will be treated to remove the potential for streamflow diversions in the event of a crossing failure or blockage, and will have rock armor added to downstream crossing fill where needed to prevent erosion. Existing crossings in low-risk situations where the culvert is sized appropriately, is stable, and does not impede aquatic passage remain in place. Prior to storing, ensure that the road, culvert, and all hydrologically connected drainage structures are cleaned, and sediment and erosion controls are intact and functioning.

Depending on the extent of anticipated closure period, the following measures may be need:

a. Scarify or de-compact the road surface to promote vegetation growth and/or infiltration of runoff and intercepted flow.
b. Consider re-contouring highly unstable portions of road.
c. Re-vegetate disturbed areas, particularly at or near stream crossings. Coordinate type and species of vegetation, along with any amendments, with the forest botanist.

Closure method at the entrance to the stored road is commensurate with the terrain, alternate uses, and extent of time road is expected to be stored. Stored roads are not shown on the motor vehicle use map, thereby prohibiting motor vehicle use. Use gates or barriers as appropriate for the site. Sign the closure as necessary to inform the public. Regularly perform condition surveys to monitor and evaluate the effectiveness of the closure measures.

BMP 2.7 – Road/Trail Decommissioning
All identified portions of roads and trails to be decommissioned would have the soil decompacted, hydrologic function restored, provide effective soil cover through mulching exposed ground and establishing vegetative cover, and install barriers to ensure compliance. Mulching can include slash, chipped material, or weed-free rice straw to protect the surface of the trail from erosion. Other erosion measures, such as waterbars, may be needed.

The objective is to stabilize, restore, and revegetate unneeded roads and trails to a more natural state as necessary to protect and enhance NFS lands, resources, and water quality. The end result is that the decommissioned roads and trails will not represent a significant impact to water quality. To implement road and trail decommissioning the following steps need to take place:

1. Restore stream courses and floodplains where feasible, to natural grade and configuration.
2. Remove drainage structures determined as necessary to protect water quality.
3. Re-contour disturbed fill material, and compact minimally to allow filtration.

4. Re-contour the road surface cut and fill slopes to restore natural hillslope topography where specified.
5. Uncompact areas with stable fill but reduced infiltration and productivity.
6. Haul excess fill to stable disposal areas outside of the RCA.
7. Provide effective soil cover (such as mulch, woody debris, rock, vegetation, blankets) to exposed soil surfaces for both short- and long-term recovery.
8. Block vehicle access to prevent motorized traffic, in conjunction with signing, publication, and enforcement of the forest's motor vehicle use map.

BMP 2.8 - Stream Crossings
Temporary roads may be constructed in RCAs, but only after consultation with a hydrologist and an aquatic biologist. Consult with a riparian specialist on use of existing roads within the RCA.

BMP 2.9 - Snow Removal and Storage
1. Review the forest's wet weather operations standards. See BMP 2.13.
2. Prepare a winter road maintenance plan for roads and parking facilities subject to snow removal operations. Include an erosion and sediment control component to address the following, particularly when no other alternatives exist:

    a. Storage areas that could impact water bodies, riparian areas, wetlands, floodplains, and streams.
    b. Fill slopes subject to erosion.
    c. Snow storage locations whose runoff could overwhelm drainage features.
    d. Winter logging operations.
    g. Administrative access.
    h. Store snow in pre-approved areas where snowmelt will not cause erosion or deposit snow, road de-icers, or traction enhancing materials directly into surface waters.
    i. Plan as though snowmelt from snow storage is the equivalent of an intense localized rainfall.
    j. Mark drainage structures to avoid damage during plowing.

3. Move snow in a manner that will prevent disturbance of road surfaces and drainage structures, while protecting adjacent water; aquatic and riparian resources.
4. Control areas where snow removal equipment can operate to prevent damage to riparian areas, floodplains, and stream channels.
5. Install snow berms where such placement will preclude concentration of snowmelt runoff and will serve to rapidly dissipate melt water. Provide frequent drainage through snow berms to avoid hydrologic connectivity with surface waters, concentration of snowmelt runoff on fillslopes and other erosive areas, to dissipate melt water, and to prevent sediment delivery to waterbodies.
6. Limit use of approved deicing and traction-control materials, but do not compromise in areas where safety is critical (intersections and approaches, steep segments, corners).
7. Conduct frequent inspections at the earliest possible opportunity to ensure road drainage is not adversely affecting soil or water resources.
8. Where feasible, discontinue road use and snow removal when sediment delivery, or threat thereof, is occurring.
9. Replace lost road surface materials with similar quality material and repair structures damaged in snow removal operations as soon as practicable and as funding allows.
10. Develop a snow removal plan for roads with winter-logging operations, or other access, either by force account or contract, to provide written guidelines on how to implement these techniques.
12. Modify snow removal procedures as necessary to meet water-quality concerns.

BMP 2.10 - Parking and Staging Areas
Construct, install, and maintain an appropriate level of drainage and runoff treatment for parking and staging areas to protect water, aquatic, and riparian resources. Runoff from these areas can create rills or gullies, and carry sediment, nutrients, and other pollutants to nearby surface waters. The risk from parking and staging areas can be managed by using the appropriate techniques as needed.
1. Design and locate parking and staging areas of appropriate size and configuration to ccommodate expected vehicles and prevent damage to adjacent water; aquatic, and riparian resources.
    a. Avoid sensitive areas such as riparian areas, wetlands, meadows, bogs, fens, inner gorges, overly steep slopes, and unstable landforms to the extent practicable.
    b. For staging areas, designate specific locations for fueling so that water-quality impacts are minimized.
2. Infiltrate as much of the runoff as possible using permeable surfaces and infiltration ditches or basins in areas where groundwater contamination risk is low.
3. Limit the size and extent of temporary parking or staging areas.
4. Take advantage of existing openings, sites away from waterbodies, and areas that are apt to be more easily restored.
5. Rehabilitate temporary parking or staging areas immediately following use.
6. Effectively prevent access to the area once site restoration activities have been completed.

BMP 2.11 - Equipment Refueling and Servicing
To prevent fuels, lubricants, cleaners, and other harmful materials from discharging into nearby surface waters or infiltrating through soils to contaminate groundwater resources, service and refueling areas shall be located outside of RCAs, unless otherwise agreed by a riparian specialist. In case of a hazmat spill, the material shall be immediately contained and the Forest Service shall be immediately notified.

Sale administrators, contracting officer's representatives, engineering representatives, inspectors, permit administrators, and force account crew supervisors are responsible for enforcing requirements of equipment fueling and servicing activities. They can manage the risk from fuel and chemical spills during equipment refueling or servicing by using the appropriate techniques adapted as needed to local site conditions. Prepare a certified SPCC Plan for each facility, including mobile and portable facilities that have oil or oil products storage exceeding 1,320 gallons, or a single container exceeding 660 gallons. Install or construct the containment features or countermeasures called for in the SPCC Plan to ensure that spilled oil does not reach groundwater or surface water. Ensure that each SPCC Plan includes a spill contingency plan at each facility that is unable to provide secondary spill containment. Ensure that clean-up of spills and leaking tanks complies with Federal, State and local regulations and requirements.

BMP 2.13 - Erosion Control Plan
To control or prevent erosion and sedimentation resulting from ground-disturbing activities, a project specific erosion control plan will be developed prior to project implementation. A Wet Weather/Winter Operations agreement will be implemented to provide guidance with the end result of preventing significant adverse impacts to water quality from wet weather operations.

BMP 5.2 - Slope Limitations for Mechanical Equipment Operation
Outside of RCA boundaries, tractors and other ground-based equipment will be allowed where slopes are generally less than 30 percent. Within RCA boundaries, ground-based equipment may be allowed if conditions in BMP 1.8 under "Equipment Restrictions" are met. These restrictions are needed to

reduce gully and sheet erosion and associated sediment production within mechanical harvest and fuels reduction areas.

BMP 5.3 - Tractor Operation Limitation in Riparian Conservation Areas
Fuels and vegetation management activities using high-ground-pressure equipment are restricted within RCAs. Guidelines for activities within RCAs are presented in BMP 1.8 which outlines equipment restrictions, vegetation management requirements, and prescribed fire requirements. Provisions in the contract would be implemented for RCA protection and for repair of damage due to unauthorized entry. If new streamcourses or special aquatic features are located during the planning process, the riparian specialist would be notified and would inspect locations to determine RCA widths and associated guidelines.

BMP 5.5 - Disposal of Organic Debris
Guidelines for activities within RCAs are presented in BMP 1.8 which outlines equipment restrictions, vegetation management requirements, and prescribed fire requirements to prevent gully and surface erosion with associated reduction in sediment production and turbidity during and after fuels treatment. Units which include RCAs for perennial and intermittent streamcourses must meet effective soil cover goals stated in the standard and guidelines of the Forest Plan. Within sensitive areas, slash treatments would include hand pile and burn, lop and scatter, and hand pile and leave to create cover piles for small mammals. Fuels treatment within RCAs, including the use of heavy equipment, must meet effective soil cover goals in RCAs, or unit-wide (if applicable).

BMP 5.6 - Soil Moisture Limitations for Mechanical Equipment Operations
Equipment activities will be allowed only when soil moisture conditions are such that compaction, gullying, and/or rutting will be minimal. In general, low-ground-pressure equipment may operate when soils are dry to a depth of 4 inches. High-ground-pressure equipment may operate on designated skid trails when soils are dry to a minimum depth of 4 inches. High-ground-pressure equipment may operate off of designated skid trails when soils are dry to a minimum depth of 8 inches. Winter operations will be allowed as long as a Wet Weather/Winter Operations agreement is agreed to prior to operations. For unclear situations, or in the event of a difference of opinion between the Forest Service Representative and Contractor's Representative, a hydrologist/soil scientist must be consulted.

BMP 6.1 - Fire and Fuels Management Activities
Fuel management activities were developed with the objective of reducing the probability that wildfires will result in catastrophic watershed damage. Catastrophic watershed damage is defined as a watershed condition with a high probability of producing flooding, erosion that will exceed water quality standards established for identified beneficial uses, or loss of riparian vegetation that will increase stream temperatures. Most of these conditions can be avoided by reducing the intensity of wildfires and fires that are prescribed for slash treatment.

BMP 6.2 - Consideration of Water Quality in Formulating Fire Prescriptions
Provide for water quality protection while achieving the management objectives through the use of prescribed fire. Prescription elements may include, but are not limited to, such factors as fire weather, slope, aspect, and fuel moisture. These elements influence the fire intensity and thus have a direct effect on meeting the desired ground- cover requirements. Guidelines for prescribed fire activities within RCAs are presented in BMP 1.8. Direct ignition will take place outside designated riparian buffers. Fire may back into the riparian buffers. Both the optimum and allowable limits for the burn to ensure water quality protection will be established prior to preparation of the burn plan. Effects of

prescribed fire within the RCA will be assessed and mitigation measures, such as mulching or lop and scatter of existing vegetation, may be prescribed for the specific RCA.

BMP 6.3 - Protection of Water Quality from Prescribed Burning Effects
To maintain soil productivity, minimize erosion, and prevent ash, sediment, and nutrients from entering water bodies: (1) construct waterbars in fire lines; (2) reduce fuel loading in drainage channels; (3) maintain the integrity of the RCA within limits of the burn plan; (4) burn within prescription to avoid intense fires, which may promote hydrophobicity, nutrient leaching, and erosion; and/or (5) retain or plan for sufficient ground cover to prevent erosion of the burned site.

BMP 7.1 - Watershed Restoration
Objective: To repair degraded watershed conditions, and improve water quality and soil stability.

Watershed restoration measures reflect the state-of-the-art and must be chosen to custom fit the unique hydrological, physical, biological, and climatic characteristics of each watershed. Examples of watershed-restoration measures are check dam installation, streambank and channel stabilization structures, soil scarification, and seeding and planting.

Implementation: This management practice is implemented through the development of a Watershed Improvement Needs (WIN) inventory, identification of projects, preparation and approval of restoration plans and related environmental documentation, and the funding and implementation of the restoration actions.

Planning will be through an interdisciplinary team effort. Multifunctional funding of projects will be pursued where improvement of watershed conditions will benefit multiple resource areas and/or where causal actions of deteriorated conditions can be identified.

The actual work will be done by force account or through contract. Effectiveness of the restoration measures used will be monitored by project proponents. Physical, hydrological, biological, or aquatic indicators of deteriorated conditions will be the focus of the monitoring effort.

BMP 7.4 - Forest and Hazardous Substance Spill Prevention Control and Countermeasure Plan
To prevent contamination of waters from accidental spills, a SPCC Plan must be prepared if the total oil products on site in above-ground storage exceed 1,320 gallons, or if a single container exceeds a capacity of 660 gallons. Other HazMat (pesticides, raw sewage, road oils) also have specific criteria that determine when a SPCC Plan must be prepared and implemented. Timber sale SPCC Plans must be approved by a licensed professional engineer.

BMP 7.7 - Management by Closure to Use (Seasonal, Temporary, and Permanent)
Objective: To exclude activities that could result in damages to either resources or improvements, such as roads and trails, resulting in impaired water quality.

Explanation: A watershed may be in such a sensitive condition that any use during a given portion of the year, usually the rainy season, could result in soil and/or land stability problems and associated adverse effects to water quality. In other cases, water quality may already be impaired, and improvement may not be considered practical without substantially reducing or eliminating further use.

These conditions could have resulted from past land use or natural disasters. Closure to use will be used when the condition of the watershed must be protected to preclude adverse water-quality effects. (See also BMP 1.5 and BMP 2.9.)

BMP 7.8 - Cumulative Off-site Watershed Effects

A cumulative watershed effects (CWE) analysis was done as part of the environmental analysis and the results are documented in the Environmental Consequences chapter of this EA.

Appendix B

Air Quality and Greenhouse Gas Emissions Calculations

North Yuba AQ Emissions Summary		
Activity	**Emissions Source**	**PM10 (lb/day)**
Fuels Reduction Treatments	Equipment Emissions	0.00
	Worker Trip Emissions	0.19
	Activity Subtotal	0.20
Aspen Restoration	Equipment Emissions	0.45
	Worker Trip Emissions	0.08
	Activity Subtotal	0.52
Total		**0.72**

North Yuba GHG Emissions Summary		
Activity	**Emissions Source**	**CO2e (MT/year)**
Fuels Reduction Treatments	Equipment	28.44
	Worker Trips	0.10
	Activity Subtotal	28.54
Aspen Restoration	Equipment	528.34
	Worker Trips	0.04
	Activity Subtotal	528.38
Total		**556.91**

NSAQMD Air Pollutant Emissions Thresholds	
Level	**PM10**
Level "A" Threshold	<79 lb/day
Level "B" Threshold	79-137 lb/day
Level "C" Threshold	>137 lb/day
The District has developed a tiered approach to significance levels: a project with emissions meeting Level A thresholds will require the most basic mitigations; projects with projected emissions in the Level B range will require more extensive mitigations; and those projects which exceed Level C thresholds will require the most extensive mitigations.	

Aspen Restoration

Assumptions: Implementation of the project would occur beginning in July 2019 and continuing to October 2020. This is roughly 70 weeks. Aspen restoration would consist of hand and mechanical treatments. For the following analysis, it was conservatively assumed that all treatments are mechanical treatments because mechanical treatments are more emissions intensive than hand treatments.

Weeks per year:	35
# of years of operation:	2
Days per week:	5
Worker Vehicles	2
Trips Per Day Per Vehicle	1

Equipment	Converted Emissions Factors (lb/hour)						
	ROG	CO	NOX	SO2	PM	N2O	CO2e
Skidder (500 HP)	0.11	0.47	0.48	0.00	0.02	0.00	250.57
Feller/Buncher (750 HP)	0.24	1.07	1.12	0.01	0.04	0.00	581.42

Source: OFFROAD2007

Aspen Restoration Emissions Calculations										
Equipment	Equipment Hours		AQ Pollutant Emissions (lb/day)						GHG Emissions	
	EQ #	EQ hours/day	ROG	CO	NOX	SO2	PM	N2O	CO2e (lb/year)	CO2e (MT/year)
Skidder (500 HP)	1	8	0.86	3.73	3.85	0.02	0.13	0.00	350798.13	159.12
Feller/Buncher (750 HP)	1	8	1.93	8.58	8.98	0.05	0.31	0.00	813987.69	369.22
Equipment total	NA	NA	2.79	12.31	12.84	0.07	0.45	0.00	1164785.82	528.34

Worker Commute							
Vehicles Used	AQ Pollutant Emissions (lb/day)					GHG Emissions	
	ROG	CO	NOX	PM 10	PM 2.5	CO2e (lb/year)	CO2e (MT/year)
Cars/Trucks Light Duty	0.05	0.42	0.03	0.08	0.02	86.52	0.04

Fuels Reduction Treatments

Assumptions: Implementation of the project would occur beginning in July 2019 and continuing to October 2020. This is roughly 70 weeks.

Weeks per year:	35
# of years of operation:	2
Days per week:	5
Worker Vehicles	5
Trips Per Day Per Vehicle	1

Equipment	Converted Emissions Factors (lb/hour)						
	ROG	CO	NOX	SO2	PM	N2O	CO2e
Chainsaw (15 HP)	1.28	2.58	0.02	0.00	0.00	0.00	8.96

Source: OFFROAD2007

Fuels Reduction Treatments Emissions Calculations										
Equipment	Equipment Hours		AQ Pollutant Emissions (lb/day)						GHG Emissions	
	EQ #	EQ hours/day	ROG	CO	NOX	SO2	PM	N2O	CO2e (lb/year)	CO2e (MT/year)
Chainsaw (15 HP)	5	8	51.19	103.12	0.94	0.01	0.16	0.13	62696.90	28.44

Worker Commute							
Vehicles Used	AQ Pollutant Emissions (lb/day)					GHG Emissions	
	ROG	CO	NOX	PM 10	PM 2.5	CO2e (lb/year)	CO2e (MT/year)
Cars/Trucks Light Duty	0.11	1.04	0.09	0.19	0.05	216.31	0.10

Emissions Factors

Fuels Reduction Treatments

Equipment	Fuel	MaxHP	Population	Activity (hr/day for total population)	Exhaust Emissions (tons/day) ROG	CO	NOX	CO2	SO2	PM	N2O	CH4
Chainsaws	G2	15	6.38E+02	3.60E+02	2.31E-01	4.65E-01	4.24E-03	1.26E+00	5.17E-05	7.31E-04	6.02E-04	1.43E-02

Aspen Restoration

Equipment	Fuel	MaxHP	Population	Activity (hr/day for total population)	Exhaust Emissions (tons/day) ROG	CO	NOX	CO2	SO2	PM	N2O	CH4
Skidders	D	500	1.23E+00	4.88E+00	2.63E-04	1.14E-03	1.17E-03	6.10E-01	5.99E-06	4.11E-05	0.00E+00	2.37E-05
Fellers/Bunchers	D	750	1.37E+00	4.80E+00	5.78E-04	2.57E-03	2.69E-03	1.39E+00	1.40E-05	9.36E-05	0.00E+00	5.22E-05

Source: OFFROAD2007

Worker Trip Emission Factors

Vehicle	Emissions Factors (lb/day) ROG	CO	NOX	PM 10	PM2.5	CO2e
1 Round-Trip (Light Duty)	0.02	0.21	0.02	0.04	0.01	43.26

Source: CalEEMod run for one round trip (50 miles total)

Conversions

Value	Unit
2000.00	lb/ton
24.00	hr/day
453.59	g/lb
25.00	GWP of CH4
2204.62	lb/MT
0.91	ton/MT

Appendix C

Special Status Plant Table

Table C-1 Special-Status Plant Species Not Analyzed in Project NEPA Documents that are Known to Occur in the Project Region and their Potential for Occurrence in the Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	Federal	State	CRPR		
green spleenwort *Asplenium viride*			2B.3	Limestone. Subalpine coniferous forest. On rocks, in limestone seams of granite cliffs. 6726 to 6726 ft in elevation. Blooms June-August.	***Not expected to occur:*** Species is unlikely to be present within treatment units, due to lack of lack of limestone seams in granite cliffs. Species occurrences documented within Sierra city USGS quadrangle.
lens-pod milk-vetch *Astragalus lentiformis*	USFS-S		1B.2	Great Basin scrub, lower montane coniferous forest. Shallow, volcanic soils among sagebrush, sometimes with Jeffrey pine. 4790 to 6266 ft in elevation. Blooms May-July.	***Not expected to occur:*** Species is unlikely to be present within treatment units due to lack of great basin scrub. While montane conifer forest is present, species distribution restricted to north and east of Blairsden USGS quadrangle.
fiddleleaf hawksbeard Crepis runcinata			2B.2	Mojavean desert scrub, pinyon and juniper woodland. Moist, alkaline valley bottoms. 1247 to 10203 ft in elevation. Blooms May-August.	***Not expected to occur:*** Species is unlikely to be present within treatment units due to lack of suitable habitat features. Documented species distribution within the Sattley and Calpine USGS quadrangles.
globose cymopterus *Cymopterus globosus*			2B.2	Great Basin scrub. Sandy, open flats. 3937 to 7005 ft in elevation. Blooms March-June.	***Not expected to occur:*** Species is unlikely to be present within treatment units due to lack of suitable Great basin scrub habitat. Documented species distribution within the Calpine USGS quadrangle.
Nevada daisy *Erigeron eatonii var. nevadincola*			2B.3	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Rocky sites. 4593 to 6398 ft in elevation. Blooms May-July.	***Not expected to occur:*** Species is unlikely to be within treatment units due to lack of Great Basin scrub, and pinyon juniper habitat. While montane conifer forest is present, nearest documented location is within the Portola USGS quadrangle.
seep kobresia *Kobresia myosuroides*			2B.2	Limestone. Alpine boulder and rock field (mesic), meadows and seeps, subalpine coniferous forest. Moist places in alpine and subalpine meadows; can be on limestone substrate. 4888 to 10499 ft in elevation. Blooms (June), Aug.	***Could occur:*** Suitable mesic habitat is available within aspen treatment units. Documented species distribution within the Calpine USGS quadrangle.
rayless mountain ragwort *Packera indecora*			2B.2	Meadows and seeps. Mesic sites. 5249 to 6562 ft in elevation. Blooms July-August.	***Could occur:*** Suitable mesic habitat is available within aspen treatment units. Documented species distribution within the Webber Peak USGS quadrangle.

Table C-1 Special-Status Plant Species Not Analyzed in Project NEPA Documents that are Known to Occur in the Project Region and their Potential for Occurrence in the Project Area

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	Federal	State	CRPR		
Modoc County knotweed *Polygonum polygaloides* ssp. *esotericum*			1B.1	Wetland Great Basin scrub, vernal pools, lower montane coniferous forest, meadows and seeps. Edges of seasonal lakes and ponds with *Deschampsia*, *Navarretia*, etc. 2904 to 5545 ft in elevation. Blooms May-September.	***Not expected to occur:*** Suitable lower montane coniferous forest, meadow and seep habitat is available within treatment units. However, species distribution restricted to north and east of project area.
slender-leaved pondweed *Stuckenia filiformis ssp. alpina*			2B.2	Wetland. Marshes and swamps. Shallow, clear water of lakes and drainage channels. 984 to 7054 ft in elevation. Blooms May-July.	**Could occur**: Suitable clear shallow water habitat may occur within aspen treatment units. Documented species distribution within Sierra City USGS quadrangle.
cylindrical trichodon *Trichodon cylindricus*			2B.2	Broadleafed upland forest, upper montane coniferous forest. Moss growing in openings on sandy or clay soils on roadsides, stream banks, trails or in fields. 164 to 4921 ft in elevation.	***Not expected to occur:*** Suitable broadleafed upland forest, upper montane coniferous forest habitat is available within treatment units. However, species distribution restricted to north of project area.
flat-leaved bladderwort *Utricularia intermedia*			2B.2	Wetland. Bogs and fens, meadows and seeps, marshes and swamps, vernal pools. Mesic meadows, lake margins, marshes, fens. 2198 to 8711 ft in elevation. Blooms July-August.	***Not expected to occur***: Suitable mesic habitat is available within aspen treatment units. However, species distribution restricted to north of project area.

Notes: CRPR = California Rare Plant Rank; ESA = Federal Endangered Species Act; CESA = California Endangered Species Act; USGS = United States Geological Survey

[1] Legal Status Definitions

Federal:

USFS-S U.S. Forest Service Sensitive Species

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

California Rare Plant Ranks:

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks

0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Sources: CDFW 2018; CNPS 2018; data compiled by Ascent Environmental in 2018