Mount Veeder Fire Safe Council VTP # 2024-03

Project Specific Analysis to the CalVTP PEIR

Prepared for:
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&

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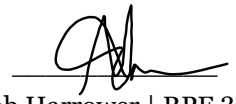

Jacob Harrower | RPF 3070
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Common Terms and Acronyms Key:

RPF: Registered Professional Forester.

SPR: Standard Project Requirements

PSA: Project Specific Analysis

PEIR: Program Environmental Impact Report

MMRP: Mitigation monitoring and reporting program (Attachment A)

MM: Mitigation measures

CalVTP: California Vegetation Treatment Program

CNDDB: California Natural Diversity Database

CNPS: California Native Plant Society

NACL: Native American Contact List

DBH: Diameter at Breast Height

SRA: State Responsibility Area

WLPZ: Watercourse and Lake Protection Zone

TPA: Trees per acre

PCA: Pest Control Advisor

QAL: Qualified Applicator's License

LWD: Large Woody Debris. Existing downed logs which are highly valuable to wildlife.

Dead and Down: Vegetation that is dead and either in contact with the forest floor or standing.

% Canopy Cover: An average percentage of the sky that is covered by overstory or understory canopy as measured with a densitometer utilizing random plot survey methods.

% Live Crown = (Height of live crown / Total tree height) X 100

Lop and Scatter: Vegetation treatment technique where removed branches, shrubs, and trees are cut into manageable pieces and scattered around a treatment area to slowly break down into the ground over time.

INTRODUCTION

PROJECT OVERVIEW

The California Vegetation Treatment Program (CalVTP) directs implementation of vegetation treatments to reduce wildfire risk, while protecting natural resources and public property from wildfire. The Program Environmental Impact Report (PEIR) for the CalVTP was developed in 2019, under the direction of CEQA lead agency, California Board of Forestry and Fire Protection, in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines. This Project Specific Analysis (PSA) is prepared to assess vegetation treatments for the approximately 1,713 acres, located in Napa County.

CEQA LEAD AGENCY AND PROPOSED PROJECT

Napa County will function as the lead agency and project proponent for this CalVTP. Napa Community Firewise Foundation is the implementing entity. The implementing entity is solely responsible for the prescription of all vegetation treatments proposed and commissioned by them, including the implementation of the vegetation treatments, mitigation measures, and Standard Project Requirements (SPRs) shown in attachment A. The project proponent is responsible for verification and monitoring of the project's implementation. The Lead Agency is responsible for making the final determination regarding this proposed projects CEQA compliance and the necessity or lack thereof for further environmental review.

The following PSA, and corresponding attachments, were prepared by Frontier Resource Management LLC. The treatment activities and treatment types were selected by the implementing entity for inclusion in this PSA. Frontier Resource Management LLC does not make the determination that the proposed treatment activities are within the scope of the PEIR, but rather provides the evaluation, surveys, and documentation required by CEQA for consideration by the lead agency. The Lead Agency is responsible for determining if the proposed treatments are within the scope of the PEIR, based on the information contained in this PSA and supporting attachments.

The treatment types being proposed are fuel breaks and ecological restoration. The treatment activities will include manual treatment, mechanical treatment, herbicide treatment, prescribed burning, and prescribed herbivory. Ongoing maintenance will involve the same treatment types as the initial treatments.

- *There are many private landowner's within the project area. The project proponent and lead agency are not responsible for the conduct of these landowners. The following mitigation measures and SPRs only apply to a project commissioned by the project proponent or lead agency.*

STATEMENT OF PURPOSE

This document serves as the PSA to determine if the project as proposed is within the scope of the CalVTP PEIR and to provide CEQA compliance for the proposed vegetation treatments. The Mitigation Monitoring and Reporting Plan (MMRP), which identifies the SPRs and Mitigation Measures (MMs) applicable to the project is in attachment A. Attachment B contains the biological assessment, including a botany report and soils analysis. Attachment C includes all project maps.

VEGETATION TREATMENT PLAN

This Vegetation Treatment Plan does not prescribe treatment specifications for each forested area, but rather gives a brief overview of current conditions and general goals. The project proponent & implementing entity shall consult with an RPF for the development of the treatment prescriptions for each forest type.

Treatment prescriptions and other "forestry services" for all "forested landscapes" must be developed by an RPF as required by Professional Foresters Law; Public Resources Code Sections 750 – 758. Forested landscapes are defined as,

> *"… those tree dominated landscapes and their associated vegetation types on which there is growing a significant stand of tree species, or which are naturally capable of growing a significant stand of native trees in perpetuity, and is not otherwise devoted to non-forestry commercial, urban, or farming uses."*

"Forestry" is defined as,

> *"…the science and practice of managing forested landscapes and includes, among other things, the application of scientific knowledge and forestry principles in the fields of fuels management and forest protection, timber growing, and utilization, forest inventories, forest economics, forest valuation and finance, and the evaluation of mitigation of impacts from forestry activities on watershed and scenic values…"*

PROJECT LOCATION

The 1713-acre treatment area is situated roughly 4 air miles west of the city of Yountville, in Napa County, CA. It includes portions of Sections 33, 34, & 35 T7N R5W; Sections 2, 3, 4, 8, 9, 10, 11, 13, 14, 15, 16, 23, 24, 26, & 27 T6N, R5W; Sections 1 & 12 T5N R5W; Sections 6 & 7 T5N R4W, MDBM within Rutherford, Sonoma, and Napa USGS 7.5 Minute Quadrangles. It spans from Leaning Oak Dr in the south, to Oakville Grade Rd in the north. The elevation ranges between 160– 1480 ft above sea level and can be delineated into 4 distinct forest types, mixed hardwood, Douglas-fir mixed hardwood, Knobcone pine, and chaparral.

CURRENT FOREST CONDITIONS

Most of the project area falls within the mixed hardwood forest type. Over the years aerial fuel loads have increased with greater conifer, bay, and madrone encroachment. Understory growth and increasing tree mortality have created extremely high levels of surface and ladder fuels. The resulting trees per acre (TPA) and fuel loading is far greater than what these ecosystems are adapted to endure. Many of the stands in the project area exhibit regions of poor forest health, due to overcrowded conditions, a high degree of dead and down, and lack of available nutrients. The following descriptions are based on initial reconnaissance and are not meant to be a comprehensive inventory of these different stand types. A more in-depth inventory and/or forest assessment should be conducted by an RPF prior to designing treatment specifics.

Mixed Hardwood:

The Mixed Hardwood stands are comprised primarily of coast live oak (Quercus agrifolia), toyon (Heteromeles arbutifolia), California black oak (Quercus kelloggii), interior live oak (Quercus wizlizeni), Pacific madrone (Arbutus menziesii), and California bay laurel (Umbellularia californica), with California black walnut (Juglans californica), Big-leaf maple (Acer macrophyllum), black locust (Robinia pseudoacacia), Douglas-fir (Psuedotsuga menziesii), and various understory species mixed in. The overall health of these stands vary by area, with minimal signs of insect and disease outbreaks. Fuel loading is extreme in some areas.

Conifer:

The Conifer stands vary and are comprised of Douglas-fir, Pacific madrone, California bay laurel Interior live oak, California black oak, Oregon white oak, and various understory species. There are also pure coast redwood stands within the Enchanted Hills property, and the Redwood Rd to Partrick connector. These redwood stands contain a small component of Douglas-fir throughout. The stands are

older with several acres of overstory Douglas-fir dying off due to drought, insects, and disease. The understory has a dense advanced regeneration component of madrone and bay in various locations.

The older Douglas-fir trees are on the decline (as is expected with older fir trees this far south and inland). The forester observed multiple stands, less than 20 acres, where 100% overstory fir mortality was occurring. These stands are regenerating with dense pockets of hardwood and small fir trees.

Chaparral:

There are multiple areas of chaparral throughout the treatment area, mostly along ridges and south facing slopes. These areas will not be converted by following the SPRs described in attachment A. They are comprised of a variety of species including but not limited to: Manzanita (multiple species), Yerba santa, live oak, scrub oak, canyon live oak, toyon, and various other species. See the botany report in attachement B for a more in-depth account of species diversity.

Knobcone Pine Stands:

There are a few knobcone pine (Pinus attenuata) stands along the ridge between Dry Creek Rd and Hwy 29. They contain a very high TPA along with small average diameters. Poor tree health was noted along with an extreme fire hazard. Most of these stands seem ill suited for this area and were most likely planted. Based on the Forester's assessment at the time of reconnaissance, removal of these stands would fall under the ecological restoration treatment type.

TREATMENT GOALS AND SPECIFICATIONS

The Mount Veeder Fire Safe Council VTP is proposed by the project proponent to improve forest health, increase fire resilience, and reduce the risk of wildfire throughout the 1713-acre treatment area. The following are general goals and specifications which will be further developed by the project RPF for each project area conducted under this VTP. The tree density specifications pertain mostly to the ecological restoration treatment types. Fuels breaks will generally remove more understory vegetation and retain less TPA. The long-term objectives for these forests are:

- Increase tree spacing
- Reduce fuel loading and insect/disease infestation
- Improve wildlife habitat and continuity
- Improve tree health
- Increase forest fire and drought resilience
- Reduce and control invasive non-native species
- Create a heterogeneous forest structure
- Increase species diversity

General Treatment Specifications for all forest types:

- Select trees for retention that are free from insect and disease infestation and show little to no signs of tree bole instability.
- In young stands where most trees are < 12" DBH, cut/retention trees will be selected by an RPF (or RPF designee) to ensure a healthy future stand. Optimum tree spacing shall be determined based on site-quality, tree species, and stand age.
- Damaged trees showing signs of reduced vigor, insect/disease infestation, and/or poor crown health shall be targeted for removal.
- Retention trees may be pruned to a height of 6-12 feet, but the live crown should not be reduced below 50%.
- Limit "high stumps". Cut trees to 6" above the ground.
- When dispersing chips throughout the treatment area, prevent the piling of chips greater than 8" above the ground where feasible.
- Do not allow chips to accumulate at the base of retained trees; make sure there is separation between the tree bole and the chips.
- Constructed burn piles should be less than or equal to 20' diameter and should not be placed close enough to damage retained trees. The acceptable distance of a pile to a tree will depend on:

The piles' overall size, the topography, the weather at time of ignition, the retained tree's structural integrity, and the fuel moisture at the time of ignition.

- Treat existing dead and down throughout all treatment types, but retain LWD > 16" diameter where feasible. The treatment will be aimed at breaking up the horizontal and vertical continuity of fuel. This may entail, chipping, masticating, piling and burning, lop and scattering, broadcast burning or any other feasible method.
- Trees determined by an RPF or Arborist to die within 5 years, may be removed regardless of DBH, species, or age.
- Snags should be retained where feasible within ecological restoration treatment types. Removal of snags will occur within shaded fuel breaks. Snags shall be inspected by an RPF or Qualified Biologist, for the presence of sensitive species prior to removal. If a sensitive species is discovered, CDFW will be consulted prior to snag removal.

Treatment Specifications – Chaparral ecosystems:

- Ecological restoration treatments will not be implemented in Chaparral that is within their natural fire return interval.
- Target fire return interval for chaparral ecosystems will be determined based on the results of SPR BIO-5.
- For ecological restoration treatments, a minimum of 35 percent relative cover of existing shrubs and associated native vegetation will be retained at existing densities in patches distributed in a mosaic pattern within the treated area or the shrub canopy will be thinned by no more than 20 percent from baseline density (i.e., if baseline shrub canopy density is 60 percent, post treatment shrub canopy density will be no less than 40 percent).

TREATMENT TYPES

The following treatment types are proposed: Fuel breaks and ecological restoration (see Operations Maps in attachment C). The treatment activities will include mechanical, manual, herbicide application, prescribed burning (Broadcast and Pile), and prescribed herbivory.

Fuel Breaks:

Shaded Fuel Breaks may be created 100 feet on both sides of trails, roads, structures, and ridgelines. These treatments will provide staging areas to support firefighting and will provide control lines during prescribed fire activity. Most of the understory vegetation will be removed, while retaining a high degree of canopy cover to slow understory regeneration. Up to 75% of existing ground fuels, shrubs, and trees < 6" DBH will be chipped, or burned, except where precluded by the SPRs (i.e. within WLPZ or special treatment zone buffers). If the fuel break is comprised of a young stand predominantly under 12" DBH, trees will be retained as prescribed by an RPF. Once cut, all vegetation will be chipped, burned (piled or broadcast), or lopped and scattered. Vegetation that is lopped and scattered shall not be allowed to accumulate greater than 18" above the ground and will be avoided within 300 ft of a structure.

Herbicides may be used within these areas where necessary to prevent invasive and resprouting species. This will ensure the fuel break is maintained. A PCA shall be consulted prior to any herbicide application. *Any herbicide use shall comply with SPR HAZ-5 , HAZ-6, HAZ-7, HAZ-8, and HAZ-9 as shown in attachment A*. Within fuel breaks, snags may be removed if assessed by an RPF or Qualified Biologist prior to removal. If determined to contain a sensitive species, CDFW will be consulted prior to snag removal in accordance with the applicable mitigation measures listed in attachment A.

Ecological Restoration:

Ecological restoration treatments are designed to restore an ecosystem to a historical state. These conditions vary depending on the degree and extent of disturbance the ecosystem is adapted to. Due to the exclusion of fire from California's fire-adapted forests over the last 2 centuries, the project area has become overgrown with small trees competing for resources. This has caused unhealthy conditions to persist along with the buildup of surface, ladder, and aerial fuel loading. Restoration activities will focus on reducing densities of trees, shrubs, and invasive species. The treatments will mimic fire by removing non-fire resilient species and ladder fuels. By removing vegetation in this way, forest openings will be allowed to re-establish in areas that have become overstocked.

Prescribed herbivory, manual, mechanical, and prescribed burning treatments will be utilized throughout the project area. Treatments in these areas will be focused on removing enough ground and ladder fuels to allow broadcast burning without threatening the larger trees and overall canopy health. The main goal being to return the stands to a historical stocking level, allowing burning as a maintenance practice. Treatments will vary by forest type and RPF prescription. Snags and LWD will be retained within this treatment area, unless they pose a threat to public safety.

TREATMENT ACTIVITIES

- *For all treatment activities: The project proponent is responsible for prescribing and implementing these treatment activities including the mitigations and monitoring described in this PSA and Attachment A. Containment of any fire used for vegetation treatment is the responsibility of the project proponent.*

Mechanical Treatments

The treatment area is generally very steep, resulting in the majority of areas being inaccessible by heavy equipment. Approximately 829 acres are proposed to be treated with ground based heavy equipment. See Attachment C maps. During field reconnaissance, the RPF determined which areas would be best suited for mechanical treatment based on environmental conditions. Slope, unstable areas, sensitive species habitat, WLPZs, and vegetation density were among the factors considered during the assessment. Mechanical treatments will occur within these mapped areas as well as along existing roads; vegetation may be mechanically treated, outside of mapped areas, if it can be reached with the machine's arm, while the tracks or wheels are within the road surface.

During mechanical treatments 1-2 pieces of heavy equipment (both tracked and rubber tired) shall be used to cut, uproot, crush/compact, or chop trees and brush. Mostly this may entail utilizing a mastication head to roughly chip target vegetation and disperse onsite, although, tilling, roller chopping, chaining, and skidding may occur as well. The types of equipment used to complete these treatments will include excavators, skid steers, feller bunchers, tracked chippers, etc… Mechanical treatments remain the most effective way to achieve the project goals and will thus be utilized where feasible.

Manual Treatments

Manual treatments may be employed everywhere within the approximately 1713 acre treatment area. These treatments may involve between 3-10 laborers utilizing chainsaws, pole saws, tracked, and tow behind chippers. Cut material will be either lopped n scattered, chipped, or piled and burned in accordance with the treatment specifications above. Lop and scatter shall not occur within 150 ft of a habitable structure.

Prescribed Burning Treatments

Prescribed broadcast and pile burning may occur anywhere within the 1,713 acres, except were precluded by the SPRs, specifically unstable areas, WLPZs, and other STZs.

Broadcast burning may be used throughout the treatment area to reduce the surface and ladder fuel continuity. The intensity of this treatment will vary depending on many factors. Slope, weather, and fuel characteristics will dictate the outcome of the burn and will be utilized to determine the burn window. No broadcast burning shall occur until a burn plan is developed (see Attachment A; SPR AQ-2 and SPR AQ-3). In general, prescribed burning during the initial treatments has the potential to be of higher intensity, as the fuel loads are currently very high throughout the treatment area. It is recommended to utilize other treatment methods to reduce fuels loads.

A loader, excavator, dozer, or skidder may be utilized to establish fire lines where hand lines are not sufficient and where mechanical treatment activities are permitted. The burn plan must outline the equipment utilized in further detail.

Herbicide Treatments

Herbicides may be applied throughout the entirety of the proposed project, except within the unstable area STZ's or biological STZs. See Attachment C, maps. Prior to herbicide application, a PCA will prepare a recommendation for the treatment areas. Application of an herbicide, immediately following initial treatments will reduce the extreme regrowth of the understory (particularly within the fuel break treatments). Without chemical control, brush and other understory species will regrow rapidly and pose a secondary threat to fuel break and WUI infrastructure.
All herbicide use shall comply with SPR HAZ-5 , HAZ-6, HAZ-7, HAZ-8, and HAZ-9 as shown in attachment A.

Prescribed Herbivory

Targeted grazing of brush and understory may occur throughout the entirety of the proposed project, except within the unstable areas or STZs. See Attachment C, maps. All tree and shrub grazing shall follow the limitations defined in Attachment A SPRs. This treatment activity may entail between 20 - 100 goats/sheep/cattle.

CalVTP PROJECT INFORMATION

1. **Project Title:** Mount Veeder Fire Safe Council VTP
2. **Project Proponent Name and Address:**

   Napa County

   1195 Third Street, Suite 310

   Napa, CA 94559
3. **Contact Person Information and Phone Number:** J.R. Rogers, 707-259-8199
4. **Project Location:** West of Yountville, CA, within Napa County.

   The project is proposed on private and public parcels in Napa County, which are within the following Pacific Land Survey description. Sections 33, 34, & 35 T7N R5W; Sections 2, 3, 4, 8, 9, 10, 11, 13, 14, 15, 16, 23, 24, 26, &27 T6N, R5W; Sections 1 & 12 T5N R5W; Sections 6 & 7 T5N R4W MDBM. Rutherford, Sonoma, and Napa USGS 7.5 Minute Quadrangles.

5. **Total Area to be Treated (acres)** 1,713 Acres.
6. **Description of Project**:

   a. Initial Treatment

   - *See Vegetation Treatment Plan above.*

   Treatment Types

   ☐ Wildland-Urban Interface Fuel Reduction

   ☒ Fuel Break

   ☒ Ecological Restoration

   Treatment Activities

   ☒ Prescribed Burning (Broadcast), **1713** acres

   ☒ Prescribed Burning (Pile Burning) **1713** acres

   ☒ Mechanical Treatment, **829** acres

   ☒ Manual Treatment, **1713** acres

   ☒ Prescribed Herbivory, **1713** acres

   ☒ Herbicide Application, **1713** acres

   Note: Multiple treatment activities may be applied in the same area

Fuel Type [*see description in CalVTP PEIR Section 2.4.1, check every applicable category; provide detail in description of Initial Treatment*]

☒ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

b. Treatment Maintenance

- *Estimated treatment maintenance is based on each initial treatment completed. It is not anticipated that the initial treatment shall be completed on the entire project within 5 years of project approval.*

- *Treatment maintenance timing and scope will vary depending on the level of understory regrowth in response to initial treatments, which is highly dependent on-site quality, water availability, soils, aspect, initial treatment intensity, use of herbicides, etc…*

  Fuel Break Maintenance:

  Treatments within the Fuel Break areas will reoccur every 1-10 years depending on the effectiveness of the initial treatments and the level of vegetation regeneration. It is anticipated that understory vegetation will regrow quickly within the fuel breaks due to the greater disturbance associated with these types of treatments. A high canopy closure along with herbicide use will slow understory re-initiation. If herbicides aren't utilized, it is highly likely the fuel breaks will require retreatment after roughly 3 years. Alternatively, if herbicides are applied to target vegetation within the fuel break (i.e. vigorously resprouting and/or invasive species) maintenance treatments may not be necessary for 10 years.

  Ecological Restoration Maintenance:

  The goal within these treatment types within the historically forested areas is to maintain a high overall canopy closure, resulting in slow regeneration of the understory. It is estimated that treatment maintenance within these areas shall occur every 5-15 years, focusing mainly on treating dead and down. Again, the maintenance period will depend on the vegetation response to treatment.

  Canopy closure around grassy openings that were historically meadow areas may be greatly reduced. This will serve as meadow restoration and grassland conservation. Also, the knobcone pine stand, as shown on the map will be mostly removed, as this was planted and is showing poor stand health, as well as posing a risk to public safety.

- *For maintenance of all treatment types: An assessment will be made by the project proponent which will determine when maintenance treatments shall occur. This will be based on regenerated vegetation and fuel loading assessments. The project proponent is responsible for maintaining the initial treatment areas.*

Treatment Types *[see description in CalVTP PEIR Section 2.5.1, check every applicable category; provide detail in description of Treatment Maintenance*]

☐ Wildland-Urban Interface Fuel Reduction

☒ Fuel Break

☒ Ecological Restoration

Treatment Activities [*see description in CalVTP PEIR Section 2.5.2, check every applicable category; include number of acres subject to each treatment activity, provide detail in description of Treatment Maintenance*]

☒ Prescribed Burning (Broadcast), **1713** acres

☒ Prescribed Burning (Pile Burning) **1713** acres

☒ Mechanical Treatment, **768** acres

☒ Manual Treatment, **1713** acres

☒ Prescribed Herbivory, **1713** acres

☒ Herbicide Application, **1713** acres

Fuel Type [*see description in CalVTP PEIR Section 2.4.1, check every applicable category; provide detail in description of Treatment Maintenance*]

☒ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

Use of the PSA for Treatment Maintenance

Prior to implementing a maintenance treatment, the project proponent will verify that the expected site conditions as described in the PSA are present in the treatment area. As time passes,

the continued relevance of the PSA will be considered by the project proponent in light of potentially changed conditions or circumstances. Where the project proponent determines the PSA is no longer sufficiently relevant, the project proponent will determine whether a new PSA or other environmental analysis is warranted.

In addition to verifying that the PSA continues to provide relevant CEQA coverage for treatment maintenance, the project proponent will update the PSA at the time a maintenance treatment is needed when more than 10 years have passed since the approval of the PSA or the latest PSA update. For example, the project proponent may conduct a reconnaissance survey to verify conditions are substantially similar to those anticipated in the PSA. Updated information will be documented.

7. **Regional Setting and Surrounding Land Uses:** The project area is within Napa county. The property is a conglomerate of individually owned private parcels. The land uses within and adjacent to this property are grazing, hunting, timber harvesting and agriculture.

8. **Other Public Agencies Whose Approval is Required**: (e.g., permits)

    - Smoke management plan will be prepared for BAAQMD.
    - A burn permit will be obtained from CALFIRE when required.
    - LSA agreement with CDFW may be required if working within the channel zone of a watercourse

    Coastal Act Compliance

    ☒ The proposed project is NOT within the Coastal Zone

    ☐ The proposed project is within the Coastal Zone (*check one of the following boxes*)

    ☐ A coastal development permit been applied for or obtained from the local Coastal Commission district office or local government with a certified Local Coastal Plan, as applicable

    ☐ The local Coastal Commission district office or local government with a certified Local Coastal Plan (in consultation with the local Coastal Commission district office) has determined that a coastal development permit is not required

9. **Native American Consultation**. *For treatment projects that are within the scope of the CalVTP PEIR, AB 52 consultation for AB 52 compliance has been completed. The Board of Forestry and Fire Protection conducted consultation pursuant to Public Resources Code section 21080.3.1 during preparation of the PEIR.*
Pursuant to CalVTP SPR CUL-2, the Native American tribes listed on CALFIREs NACL were contacted by the project proponent's representative on 5/24/24. Results of these consultations will be included in the Confidential Archaeological Addendum (attachment D).

DETERMINATION

On the basis of this PSA and the substantial evidence supporting it:

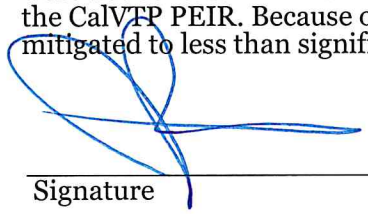
☒ I find that all of the effects of the proposed project (a) have been covered in the CalVTP PEIR, and (b) all applicable Standard Project Requirements and mitigation measures identified in the CalVTP PEIR will be implemented. The proposed project is, therefore, **WITHIN THE SCOPE** of the CalVTP PEIR. NO ADDITIONAL CEQA DOCUMENTATION is required.

☒ I find that treatments in proposed project areas outside the CalVTP treatable landscape do not result in substantial changes in the project, no substantial changes in circumstances have occurred, and no new information of substantial importance has been identified. The inclusion of project areas outside the CalVTP treatable landscape will not result in any new or substantially more severe significant impacts. None of the conditions described in State CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR have occurred; therefore, this **ADDENDUM** is adopted to address the project areas outside geographic extent presented in the PEIR.

☐ I find that the proposed project will have effects that were not covered in the CalVTP PEIR. These effects are less than significant without any mitigation beyond what is already required pursuant to the CalVTP PEIR. A NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project will have effects that were not covered in the CalVTP PEIR or will have effects that are substantially more severe than those covered in the CalVTP PEIR. Although these effects may be significant in the absence of additional mitigation beyond the CalVTP PEIR's measures, revisions to the proposed project or additional mitigation measures have been agreed to by the project proponent that would avoid or reduce the effects so that clearly no significant effects would occur. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project will have significant environmental effects that are (a) new and were not covered in the CalVTP PEIR and/or (b) substantially more severe than those covered in the CalVTP PEIR. Because one or more effects may be significant and cannot be clearly mitigated to less than significant, an ENVIRONMENTAL IMPACT REPORT will be prepared.



Signature

July 17, 2024
Date

Jeffrey Rogers
Printed Name

Fire Administration - Project Manager
Title

County of Napa
Agency

PROJECT SPECIFIC ANALYSIS

AESTHETICS AND VISUAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact AES-1: Result in Short-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Treatment Activities	LTS	Impact AES-1, pp. 3.2-16 – 3.2-19	Yes	AES-2, AQ-2, AQ-3	NA	LTS	no	yes
Impact AES-2: Result in Long-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from WUI Fuel Reduction, Ecological Restoration, or Shaded Fuel Break Treatment Types	LTS	Impact AES-2, pp. 3.2-20 – 3.2-25	Yes	AES-1, REC-1	NA	LTS	no	Yes
Impact AES-3: Result in Long-Term Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from the Non-Shaded Fuel Break Treatment Type	PS	Impact AES-3, pp. 3.2-25 – 3.2-27	Yes	NA	AES-3	LTS	no	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; SU: Significant and unavoidable. PS: Potentially Significant

New Aesthetic and Visual Resource Impacts: Would the treatment result in other impacts to aesthetics and visual resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
	☐	☐	☐

Discussion

Impact AES-1
The potential for the proposed treatment activities to result in short-term degradation of the visual character was examined in the PEIR. The proposed treatments will occur within privately owned land which is viewable by the public. Portions of the project area are located within the viewshed of a mapped State Scenic Highway. Impact to this scenic corridor was examined in this PSA. Due to the intensity of treatments proposed, there is expected to be a net benefit to the scenic character throughout this corridor and landscape unit. Currently, the ecosystem within this area is very unhealthy due to the overgrown understory and increased invasive species. The project will thin out the understory which will improve the visual character of this area in the short and long term. Many trees are currently dead or dying due to overstocked conditions of the past 100 years. By removing trees in these areas, there will be greater access to light, water, and nutrients for the retained ecosystem. This will improve the fundamental value of the scenic character of these areas.

The potential for the project to result in a short term impact to this resource area is within the scope of the PEIR because the treatment activities are consistent with those analyzed in the PEIR. Through the inclusion of the SPRs, were feasible, as outlined in the PEIR the impact will be Less than significant.

Because the impact on the visual resource is less than what would occur during a catastrophic wildfire, particularly in the long term, this subject is negligible. The inclusion of land that is outside of the treatable landscape presented in the PEIR, is geographically and visually the same as that included in the PEIR, therefore, the impact will be the same and is also within that scope.

Impact AES-2

The potential for long-term impact to visual resources as a result of the project was assessed in the PEIR and found to be less than significant. This is mostly due to the retention of large trees on the landscape while thinning mostly smaller trees and brush. There is expected to be a long term benefit to visual resources due to an improved forest health. By reducing the number of trees onsite, there will be an increase in the available resources to the remaining trees. Also, the trees selected for retention will be healthier more desirable trees which will enhance the visual character of this area.

In the long term, the prevention of a devastating wildfire will also enhance the visual character of this project area by preserving trees which would otherwise be killed in such a fire. The inclusion of land that is outside of the treatable landscape presented in the PEIR, is geographically and visually the same as that included in the PEIR, therefore, the impact will be the same and is also within that scope.

Impact AES-3
The potential for non-shaded fuel breaks to impact the treatment area was analyzed in the PEIR and found to be potentially significant. With the inclusion of Mitigation Measure AES-3 this impact is expected to be reduced to a level of insignificance through edge feathering and strategic location away from public view were feasible.

The inclusion of land that is outside of the treatable landscape presented in the PEIR, is geographically and visually the same as that included in the PEIR, therefore, the impact will be the same and is also within that scope.

CalVTP Addendum for Change to Geographic Extent
The project proponent has determined that the inclusion of land in the proposed treatment area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the viewshed and treatment impacts are consistent with those examined in the PEIR and would therefore not create any new significant impacts.

PD-3.2: AGRICULTURE AND FORESTRY RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact AG-1: Directly Result in the Loss of Forest Land or Conversion of Forest Land to a Non-Forest Use or Involve Other Changes in the Existing Environment Which, Due to Their Location or Nature, Could Result in Conversion of Forest Land to Non-Forest Use	LTS	Impact AG-1, pp. 3.3-7 – 3.3-8	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; SU: Significant and unavoidable. PS: Potentially Significant

New Agriculture and Forestry Resource Impacts: Would the treatment result in other impacts to agriculture and forestry resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact AG-1

Initial and maintenance treatments will encourage a healthier forest condition by removing competing vegetation and in some cases scarifying the ground, allowing for desirable tree species to seed in. The project area exists within various forest types. Conifer, mixed hardwood, knobcone pine, and chaparral. The project will focus on removing trees less than 10" DBH, and brush species, which will not have a significant negative effect on the forest structure. Not all trees in this size class will be removed, thus preventing a future conversion, due to lack of regeneration in the understory.

The treatments proposed are intended to protect this forest from a stand replacing wildfire, which would have the potential to convert the forest land into a brush dominated pioneer species structure. This would have the potential to initiate a cycle of high intensity wildfires which could create an adaptation towards chapparal species.

This Vegetation Treatment Plan does not prescribe treatment specifications for each forested area, but rather gives a brief overview of current conditions and general goals. The project proponent shall consult with an RPF for the development of the treatment prescriptions for each forest type. Treatment prescriptions and other "forestry services" for all "forested landscapes" must be developed by an RPF as required by Professional Foresters Law; Public Resources Code Sections 750 – 758. Forested landscapes are defined as,

> *"… those tree dominated landscapes and their associated vegetation types on which there is growing a significant stand of tree species, or which are naturally capable of growing a significant stand of native trees in perpetuity, and is not otherwise devoted to non-forestry commercial, urban, or farming uses."*

"Forestry" is defined as,

> *"…the science and practice of managing forested landscapes and includes, among other things, the application of scientific knowledge and forestry principles in the fields of fuels management and forest protection, timber growing, and utilization, forest inventories, forest economics, forest valuation and finance, and the evaluation of mitigation of impacts from forestry activities on watershed and scenic values…"*

After assessing the proposed treatments and their effect on the potential for converting forest land within the project area, the project proponent has determined that the treatments will in fact protect forest resources from conversion, since treatments will be developed by an RPF.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the composition of forestland as defined in public resources code section 12220(g) is essentially the same within and outside the treatable landscapes of this specific project area. The forest types which fall outside of the treatable landscapes are comprised mostly of oak woodlands with small grasslands intermixed. The reason for their dis-inclusion is most likely due to low resolution mapping performed on a large scale. This mapping approach failed to include all forestland needing treatment. There is no change in the impact to forest resources within these areas.

PD-3.3: AIR QUALITY

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact AQ-1: Generate Emissions of Criteria Air Pollutants and Precursors During Treatment Activities that would exceed CAAQS or NAAQS	PSU	Table 3.4-1; Impact AQ-1, pp. 3.4-26 – 3.4-32; Appendix AQ-1	Yes	AD-4, AQ-1-AQ-4, AQ-6	AQ-1 See exclusions in discussion	PSU	No	Yes
Impact AQ-2: Expose People to Diesel Particulate Matter Emissions and Related Health Risk	LTS	Table 3.4-6; Impact AQ-2 pp. 3.4-33 – 3.4-34; Appendix AQ-1	Yes	HAZ-1, NOI-4, NOI-5	NA	LTS	No	Yes
Impact AQ-3: Expose People to Fugitive Dust Emissions Containing Naturally Occurring Asbestos and Related Health Risk	LTS	Section 3.4.2; Impact AQ-3, pp. 3.4-34 – 3.4-35	No	None	NA	NA	NA	NA
Impact AQ-4: Expose People to Toxic Air Contaminants Emitted by Prescribed Burns and Related Health Risk	PSU	Section 3.4.2; Impact AQ-4, pp. 3.4-35 – 3.4-37	Yes	AD-4, AQ-2, AQ-3, AQ-6	NA (No feasible mitigation available	PSU	No	Yes
Impact AQ-5: Expose People to Objectionable Odors from Diesel Exhaust	LTS	Impact AQ-5, pp. 3.4-37 – 3.4-38	Yes	HAZ-1, NOI-4, NOI-5	NA	LTS	No	Yes
Impact AQ-6: Expose People to Objectionable Odors from Smoke During Prescribed Burning	PSU	Section 2.5.2; Impact AQ-6; pp. 3.4-38	Yes	AD-4, AQ-2, AQ-3, AQ-6	NA (No feasible mitigation available	PSU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PSU: Potentially Significant and unavoidable. PS: Potentially Significant

New Air Quality Impacts: Would the treatment result in other impacts to air quality that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact AQ-1
Emissions of criteria air pollutants related to the proposed treatment are within the scope of the PEIR because the associated equipment and duration of use are consistent with those analyzed in the PEIR. The applicable SPRs will be implemented during treatments. AQ-5 would not apply to this project because there are no known asbestos areas within the treatment units.

The overall impact was determined to be Potentially significant and un-avoidable by the PEIR. Mitigation measure AQ-1 will be applied where feasible and will, along with the SPRs, reduce the impact. The following mitigation measures listed under AQ-1 will not be applied due to lack in technology and infeasibility at the local level:

- Electric and gasoline-powered equipment will be substituted for diesel-powered equipment.
  - *Currently there are no alternatives available which offer the functional ability to handle the workload required for the treatment activities. Diesel engines are the most efficient and widely available option for completing fuels treatments, particularly with regards to mechanical treatment activities. Furthermore, gasoline engines lack the torque required to complete treatments on steep slopes under extreme loads. This is where diesel engines have an advantage, allowing treatment on areas which would otherwise be untreatable. Diesel powered equipment also has a greater workload ability, allowing work to be completed faster. This has both an economic impact to the project as well as a reduced duration of air quality offense.*

    Lithium-ion batteries lack the range and charging speed to allow "theoretical" electric powered heavy equipment to complete the job within any sort of real-world efficiency. Because the jobs are so far from any charging station, it would be necessary to have a mobile charging source. That charging source would likely require a gas-powered generator to work, thus defeating the purpose of the mitigation measure.

    Ultimately, the technology is lacking, both locally and elsewhere, to include this mitigation measure.

Impact AQ-2
Use of mechanical equipment during initial and maintenance treatments could expose people to diesel particulate matter emissions. This potential was examined within the PEIR. These types of emissions for the treatment activities are within the scope of the PEIR because they are the same, including types of equipment and potential duration of treatment. With SPRs listed in the table above, this impact is less than significant.

Impact AQ-3
NA: No naturally occurring asbestos is known to occur in the treatment area.

Impact AQ-4
Prescribed burning during initial and maintenance treatments could expose people to toxic air contaminants, which was examined in the PEIR. The duration and parameters of prescribed burns are the same as addressed in the PEIR, therefore the potential exposures are within the scope of the PEIR. All feasible SPRs for controlling smoke emissions are included in this PSA as well as the PEIR and no further mitigations are feasible. The impacts remain significant and unavoidable as identified in the PEIR. Nevertheless, these impacts are significantly less than those created during large scale wildfires. The goal of these burns being to prevent devastating large-scale wildfires, and thus large scale impacts to air quality.

Impact AQ-5
The use of diesel equipment during operations could expose people to objectionable odors. This potential was examined in the PEIR. The potential impact from this project is within the scope because the duration, equipment used, and treatment activities are consistent with those analyzed in the PEIR.

Impact AQ-6
Prescribed burning during initial and maintenance treatments could expose people to objectionable odors. This potential was examined in the PEIR. The potential impact from this project is within the scope because the duration, equipment used, and treatment activities are consistent with those analyzed in the PEIR.

CalVTP Addendum: Change to Geographic Extent
The inclusion of land that is outside of the treatable landscape presented in the PEIR, constitutes a change in the geographic extent presented in the PEIR. The air quality conditions as well as the exposure potential present in these areas are the same as those within the treatable landscape. Consequently, the impact will be the same and is within the scope of this PEIR for all of the above listed impacts.

PD-3.4: ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact CUL-1: Cause a Substantial Adverse Change in the Significance of Built Historical Resources	LTS	Impact CUL-1, pp. 3.5-14 – 3.5-15	Yes	CUL-1, CUL-7, CUL-8	NA	LTS	No	Yes
Impact CUL-2: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources or Subsurface Historical Resources	SU	Impact CUL-2, pp. 3.5-15 – 3.5-16	Yes	CUL-1 through CUL-5, CUL-8	CUL-2	LTSM	No	Yes
Impact CUL-3: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	LTS	Impact CUL-3, p. 3.5-17	Yes	CUL-1 through CUL-6, and CUL-8	NA	LTS	No	Yes
Impact CUL-4: Disturb Human Remains	LTS	Impact CUL-4, p. 3.5-18	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New Archaeological, Historical, and Tribal Cultural Resource Impacts: Would the treatment result in other impacts to archaeological, historical, and tribal cultural resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact CUL-1
The proposed treatments have the potential to damage historical resources and this has been assessed in the PEIR. The impact of this project is within the scope of the PEIR because the treatment activities are the same and the impact was determined to be less than significant with the inclusion of the above listed SPRs.

Impact CUL-2
Vegetation treatments include mechanical treatments that could disturb the ground, potentially resulting in damage to unknown archaeological resources. A survey and NWIC records search will be conducted by a qualified archaeologist prior to treatment activities occurring. The impact of this project was determined to be the same as the PEIR because the treatment activities are the same and the potential resources are the same. As per Mitigation Measure CUL-2, any archaeological resource

discovered during treatments will be given 100 ft avoidance, and the site will be reviewed by an archaeologist.

Impact CUL-3
This impact was assessed in the PEIR and with the inclusion of the SPRs listed, the impact will be less than significant. ALTA completed the SPRs and the results are shown in Attachment D, Confidential Archaeological report. Native American groups were notified of the project and requested for information regarding cultural resources. All information received will remain confidential.

Impact CUL-4
There is a potential for treatment activities to uncover human remains due to the nature of the treatment activities. The potential for treatment activities to uncover human remains was examined in the PEIR. This impact is within the scope of the PEIR because the intensity of ground disturbance, the equipment used, and the duration of their use is the same as those analyzed in the PEIR.

CalVTP Addendum: Change to Geographic Extent
The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent of the PEIR. However, the potential archaeological resources and the environmental conditions are consistent throughout the treatment area, both inside of the treatable landscapes and outside due to the close proximity of these two areas. The boundaries of the treatable landscapes have no bearing on the movement or lives of historical or prehistorical societies. Furthermore, the area outside of the treatable landscape will be included in the archaeological records search, survey, and Native American notification, as well as all other applicable SPRs. There is not expected to be a significant change to the potential impacts or resources to invalidate the PEIR. As a result, the land outside of the treatable landscapes is also within the scope of the PEIR.

PD-3.5: BIOLOGICAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact BIO-1: Substantially Affect Special-Status Plant Species Either Directly or Through Habitat Modifications	PS	Impact BIO-1, pp 3.6-131–3.6.138	Yes	BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-7, BIO-9, GEO-1, GEO-2 GEO-3, GEO-4, GEO-5, GEO-7, HYD-4, HYD-5	BIO-1a; BIO-1b; BIO-1c	LTSM	No	Yes
Impact BIO-2: Substantially Affect Special-Status Wildlife Species Either Directly or Through Habitat Modifications	LTS (all wildlife species except bumble bees) S&U (bumble bees)	Impact BIO-2, pp 3.6-138–3.6-184	Yes	BIO-1, BIO-2, BIO-9, BIO-10, GEO-1, HYD-4, GEO-2, GEO-3	BIO-2a, BIO-2g,	LTSM	No	Yes
Impact BIO-3: Substantially Affect Riparian Habitat or Other Sensitive Natural Community Through Direct Loss or Degradation that Leads to Loss of Habitat Function	LTS	Impact BIO-3, pp 3.6-186–3.6-191	Yes	BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-9, HYD-4	NA	LTS	No	Yes
Impact BIO-4: Substantially Affect State or Federally Protected Wetlands	LTS	Impact BIO-4, pp 3.6-191–3.6-192	No	BIO-1, BIO-2, HYD-4	None	LTS	No	Yes
Impact BIO-5: Interfere Substantially with Wildlife Movement Corridors or Impede Use of Nurseries	LTS	Impact BIO-5, pp 3.6-192–3.6-196	Yes	BIO-1, BIO-2, HYD-4	None	LTS	No	Yes
Impact BIO-6: Substantially Reduce Habitat or Abundance of Common Wildlife	LTS	Impact BIO-6, pp 3.6-197–3.6-198	No	None	NA	NA	NA	Yes
Impact BIO-7: Conflict with Local Policies or Ordinances	No Impact	Impact BIO-7, pp 3.6-	No	None	NA	NA	NA	NA

Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Protecting Biological Resources		198–3.6-199						
Impact BIO-8: Conflict with the Provisions of an Adopted Natural Community Conservation Plan, Habitat Conservation Plan, or Other Approved Habitat Plan	No Impact	Impact BIO-8, pp 3.6-199–3.6-200	No	None	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New Biological Resources Impacts: Would the treatment result in other impacts to biological resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Pursuant to SPR BIO-1, Frontier Resource Management LLC conducted a data review of project-specific biological resources and a reconnaissance-level survey of the treatment areas. The main goal of these surveys was to determine the habitat suitability of the project area for the special status species identified during the data review.

Attachment B includes a comprehensive list of all special status species with the potential to occur within the project area based on the SPR BIO-1 requirement for a data review of biological resources. It includes the results of a 9-quad search of the California Natural Diversity Database (CNDDB) and the California Native Plant Society Inventory of Rare and Endangered Plants of California. Appendix Bio-3 (Table 13a, Table 13b, and Table 19) of the PEIR (Volume II) was also reviewed for special-status plants and wildlife that could occur within the treatment areas. Species determined to have a high potential for occurrence, based on project specific habitat, were included in the list of potential species.

Reconnaissance-level surveys were conducted between September 2023 and April 2024, to identify and document sensitive resources within the treatment areas. This included aquatic habitat, riparian habitat, and potentially sensitive natural communities. During these surveys, habitat suitability determinations were made for the potential special-status plant and wildlife species listed in Attachment B. Below are the final lists of special-status plant and wildlife species with a moderate to high potential of occurring within the treatment area. Some species included in Attachment B were ruled out due to lack of habitat or lack of threat from project activities.

Impact BIO-1
Initial and maintenance treatments could result in direct or indirect adverse effects to the special status plants species with potential to occur within the treatment areas. See the botany report within Attachment B for the full analysis. Of those species, those listed below have been located during SPR BIO-7 botany surveys. If additional species are located, they will be recorded and protected as specified in the botany report.

A majority of the project area will be treated under the ecological restoration treatment type. As stated in the PEIR, Biological Resources section 3.6 Pg 133,

> *"In the ecological restoration treatment type, the objective is to restore degraded, damaged, or destroyed ecosystems and habitats in fire-adapted vegetation types by returning them to their natural fire regime and returning vegetation in Condition Classes 2 and 3 to Condition Class 1[1]. This would benefit special-status plants associated with these habitats in the long-term by restoring the historic vegetation composition, structure, and habitat values and function under which these species evolved. Removal of overgrown shrubs and thinning tree canopies could benefit special-status plant populations in the short term by allowing more light to reach them and by removing competition for water, light, and nutrients; however, removal of overstory vegetation could alter microhabitat conditions in a way that is detrimental to special-status plant species in the short term if they are adapted to growing in shade or if the loss of overstory vegetation results in adverse changes in soil moisture, or destabilizes soil resulting in erosion that limits sensitive plant establishment and growth or washes away sensitive plants or their seeds and propagules with eroding soil."*

The ecological restoration treatment type proposes to retain the large trees comprising the overstory - except were posing a risk to public safety or where threating overall ecosystem health (as determined by the RPF), through the spread of insects or disease. As a result, it is anticipated that the removal of overstory vegetation within these treatment types will be minimal and will therefore not have a significant impact to potential sensitive plant species. On the other hand, the fuel break treatment type does have a greater potential to impact sensitive plant populations due to the scope of increased vegetation removal. Low intensity broadcast burning may be used to treat vegetation to accomplish the ecological restoration goals, by returning a fire-adapted ecosystem to its historical disturbance regime. The following is from "Forest Ecology and Management" B.M. Collins et al, regarding a study around the effects of low intensity prescribed fire on understory vegetation:

> *"This increase in light combined with increased mineral soil exposed in both treatments involving fire, most likely caused by the consumption of litter and duff layers during burning, improved conditions for seed germination and vegetative resprouting on the forest floor. These improved conditions allowed for rapid recovery of understory plants, and most likely explain the lack of significant treatment effects on forb and graminoid cover for any of the three alternatives." …*
>
> *"In fire only units exotic species richness and cover did not change significantly compared to the control"…*
>
> *"The two species that showed the most substantial reduction following the prescribed fire treatments were Goodyera oblongifolia (rattlesnake orchid) and Pyrola picta (white-veined wintergreen). Both of these species are considered late-seral species, meaning they are associated with more closed canopy stands characteristic of later successional stages."*

Because so much of the project area for this VTP is currently in the late successional stages, a net increase in species richness over the long run is expected. This is due to the creation of more early successional forest types during treatment, which is likely to increase overall habitat diversity. The increase of exotic annual species, which may occur, is a concern. Exotics are known to thrive in freshly disturbed sites due to their increased advantage over other early successional native species. SPR BIO-9 will be utilized to reduce this potential negative impact. That coupled with planned herbicide use on populations of invasives during maintenance treatments should reduce this impact to a level of insignificance. Mechanical treatments will occur along existing roads and within some proposed shaded fuel breaks. The mechanical treatment areas along with the shaded fuels breaks make up the areas with the greatest potential to impact sensitive plant populations.

As a result of the above analysis, the RPF has determined that SPR BIO-7 botanical surveys are only applicable within the mechanical treatments and/or shaded fuel breaks areas. The botany report will outline the methods in more detail and will be amended to Attachment B once completed.

The treatment activities and their potential for adverse effects on special-status species is within the scope of the PEIR. With the included mitigation measures and SPRs, the impacts are anticipated to be reduced to a level of insignificance.

Special Status Plant Species known to occur within the project area at this time:

Napa False Indigo *(Amorpha californica var. napensis)*

Status: 1B.2 ; Not an ESA or CESA listed species

Habitat requirements and description: This species is prevalent in Sonoma and Napa Counties. It thrives on cooler sights within mixed conifer and mixed oak woodland ecosystems. Growing to between 1 and 6 ft tall, its leaves are approximately 1 inch long and oppositely arranged. The inflorescence is purple and uniquely arranged vertically from the plant usually between 6 inches to 1 foot long.

Potential for Occurrence: This species exists in multiple populations within the project area. Refer to the botany reports for exact locations.

Mitigations: These populations will be protected from damaging effects, through the establishment of a 50 ft STZ. The project proponent shall implement the following protection measures within the STZ:

- No heavy equipment shall be operated within this zone, except along existing roadways.
- All trees will be retained within the STZs, unless posing a hazard to public safety. If a tree is planned for removal within the STZ an RPF or botanist shall be consulted to prevent take of individuals. Other understory species of brush or vines may be removed.
- Burn piles shall not be constructed within this zone.
- Broadcast burning may occur during the dormant phase of this species, when no above ground biomass is present.
- An RPF or botanist shall meet with the operations crew or equipment operator prior to treatments to provide training on identification and mitigation measures for this species.

Impact BIO-2
Treatment activities could result in direct or indirect adverse effects to special status wildlife species with suitable habitat within the treatment area. See Attachment B for an analysis of all species with the potential to occur (CNDDB 9 quad search results were considered). Those species with moderate to high potential for occurrence, or which are known to occur within 1.3 miles of the project area, have been included in the list below. With the implementation of the SPR's and mitigation measures listed in the table above, this potential impact will be less than significant. The following species will be included in SPR BIO-2 training for workers. If one of these species is discovered during work activities, the RPF or qualified biologist will be notified and protection measures will be developed depending on the species, and time of year (i.e. nesting or critical breeding season).

Special-Status Wildlife Species with potential to Occur in the Treatment Area

Birds

Northern Spotted Owl (*Strix occidentalis caurina*)
Status: Federally Threatened; California Threatened

Habitat Requirements: Northern spotted owls (NSO) are old growth to second growth forest obligate birds that require permanent water and suitable nesting trees/snags (Zeiner et al. 1990a). Northern spotted owls use dense, old-growth forests, or mid- to late- seral stage forest, with a multi-layered canopy for breeding (Remsen 1978). Northern spotted owl nests are most often found on existing structures (old raptor nest, squirrel nest, red-tree vole nest), or debris piled on a broken topped tree; although, they have been found inside tree cavities.
In evaluating potential NSO habitat, the presence of a nest structure may be more important than the size or species of tree. Successful nest sites have canopy cover immediately above nests exceeding 85%. The presence of high-quality foraging habitat is also very important. Early seral habitat can provide excellent foraging opportunities for the NSO. Its primary prey in this area is the dusky-footed woodrat (*Neotoma fuscipes*). The NSO breeds from southwestern British Columbia south through western Washington and western Oregon to Marin County, California. The breeding season is between February 1st to July 31st.

Potential for Occurrence: There are 10 documented activity centers within 0.7 miles of the project area. They are NAP0012, NAP0030, NAP0015, NAP0004, NAP0034, NAP0039, NAP0031, NAP0016, NAP0010, and NAP0020. No NSO surveys have been conducted since these detections were originally made. During SPR BIO-1 and BIO-10, reconnaissance and focused surveys (non-protocol level) were conducted throughout the MVFSC VTP area in search of NSO during daytime hours. No detections were made. The project proponent shall assume presence of 9 of the 10 ACs as per CDFW verification that one of the 10 ACs, NAP0039, is now merged with NAP0004. CDFW was consulted for technical assistance regarding the avoidance of take. The results are provided below along with the protection measures.

CDFW Consultation Results Regarding NSO Protections:
CDFW was contacted by FRM on 3/21/24 for technical support, regarding protections for these activity centers, as per Mitigation Measure BIO-2a. In the email correspondence, FRM proposed utilizing the U.S Fish and Wildlife document titled "*Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls in Northwestern California*", updated October 10, 2020. The guidance provides information for determining the appropriate nest buffer distance based on activities, and their potential increase to the ambient noise level.
CDFW also provided information that the AC NAP0039 is no longer active, as stated above. The email correspondence outlining these two key pieces of information are provided below. A copy of the email correspondence in it's entirety is located at the end of Attachment B for reference.

Project Specific Mitigation measures for NSO ACs (to be implemented around 9 ACs shown at mapped locations on Treatment Activities Map, in Attachment C)**:**

- SPR BIO-2: Require training on identification of NSO to all workers prior to beginning operations. If an NSO is observed during operations, all treatments shall stop within 500 ft of the location and the RPF or Biologist shall be notified.
- MM BIO-2a:
  - Mechanical treatments, manual treatments, and prescribed burning shall require a seasonal no treatment buffer within **500 ft** of the AC shown in Attachment C, between February 1st and July 31st. Note that these ACs occur within various private landowner's properties. The project proponent is not responsible for the conduct of each of these landowners. These treatment restrictions shall only apply to the project proponent commissioned treatments.
  - Prior to Mechanical, manual, or prescribed fire treatments, the project proponent shall have an RPF or their supervised designee flag an STZ around each AC within the proposed treatment area.
  - Prescribed herbivory and herbicide use shall not require a seasonal restriction.

For the full NSO analysis, see Attachment B. These buffer distances are based on equipment being used for each treatment activity. For the unabridged mitigations, see Attachment A.

Bank swallow (*Riparia riparia*)
Status: State Threatened

Habitat Requirements**:** Bank swallows are summer residents of Mendocino County. They are primarily found in riparian and other lowland habitats. They forage predominantly over open riparian areas, but also over brushland, grassland, wetlands, water, and cropland.

Potential for Occurrence: Closest known occurrence location unknown but within 1.3 miles SW of the Partrick Redwood connector treatment. The record is very old and mapped as best guess by CNDDB. An egg set was collected on May 23rd 1893. No sightings occurred during field reconnaissance. There is potential habitat within the treatment area.

Potential Project Impact: Due to the potential habitat within the project area, there is a low to moderate potential for treatments to impact this species if present.

Mitigations: WLPZ protections prescribed in HYD-4 and BIO-4 will provide refuge for this species, particularly within their optimum foraging habitat. Furthermore, SPR BIO-2 training for workers will ensure operators are trained in the identification of this species. SPR BIO-10, focused surveys were conducted by FRM during preparation of the PSA and this species was not detected. Further focused surveys may be necessary during maintenance treatments to ensure this species has not immigrated into this area. SPR BIO-12 requiring nesting bird surveys between March-July will further reduce potential impact to this species. Overall, with these mitigations and protection measures, there is not expected to be an impact to this species from the proposed treatment activities.

White-Tailed Kite (*Elanus leucurus*)
Status: SSC, BFS

Habitat Requirements: White-tailed kites are yearlong residents in coastal and valley lowlands and are rarely found away from agricultural areas. White-tailed kites inhabit herbaceous and open stages of most habitats mostly in cismontane California. White-tailed kites forage for voles and other rodents in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (Waian and Stendall 1970). Nests are made of loosely piled sticks and twigs and lined with grass or straw. Nests are placed near the top of dense broadleaved deciduous trees, approximately 6-20 meters above ground.

Potential for Occurrence: There is a low to moderate potetential for this species to occur within the project area. Mainly due to the presence of vineyards within and near the treatment areas. There are multiple occurrences noted east of the project over 1.3 miles away. No sightings were made during field reconnaissance.

Potential Project Impact: The project has a very low potential to impact this species with the implementation of the SPRs below. If anything, the project is expected to improve foraging habitat while preserving nesting habitat. As described in the PEIR, the ecological restoration treatments will mostly retain large trees.

Mitigations: SPR BIO-2 training for workers will ensure operators are trained in the identification of this species. SPR BIO-10, focused surveys were conducted by FRM during preparation of the PSA and this species was not detected. Further focused surveys may be necessary during maintenance treatments to ensure this species has not immigrated into this area. SPR BIO-12 requiring nesting bird surveys between March-July will further reduce potential impact to this species. Overall, with these mitigations and protection measures, there is not expected to be an impact to this species from the proposed treatment activities.

Mammals

Pallid Bat (*Antrozous pallidus*)
Status: SSC

Habitat Requirements: Pallid bats occupy a wide variety of habitats, such as grasslands, shrublands, and forested areas of oak and pine, but prefer rocky outcrops with desert scrub (Zeiner et al. 1990b). The pallid bat roosts in caves, mines, crevices, buildings, under bridges, and occasionally in hollow trees. Day roosts are located at sites that provide protection from the heat of the day; Night roosts are in more open areas such as porches or open buildings (Zeiner et al. 1990b). Pallid bats feed on a wide variety of relatively large ground dwelling or slow flying insects and arachnids (Zeiner et al. 1990b). Colonies of *A. pallidus*, as with most bats, will typically emerge about 1 hour after sunset, return to roost, and then forage again before dawn. This species specializes in foraging on insects on the ground, versus in the air, by listening for the insect footsteps. The pallid bat is found throughout most of the western U. S. and Mexico.

Potential for Occurrence: There is a CNDDB occurrence from 1935 at the La Salle Chapel, within a portion of the project area along the Redwood Partrick connector treatment. No sightings occurred during reconnaissance surveys. As a result there is potential for this species to exist within or near the La Salle Chapel which is just outside of the treatment area. The treatment area, doesn't contain high quality roosting habitat (i.e. large basal hollows in trees or cave analogues).

Potential Project Impact: low potential for impact, due to retention of large trees. If roost trees are detected they will be protected. This species may roost in the Chapel, but there is no potential for impact from treatments, as the building is not proposed for alteration.

Mitigations: SPR BIO-2 training for workers will ensure operators are trained in the identification of this species. SPR BIO-10, focused surveys were conducted by FRM during preparation of the PSA and this species was not detected. These surveys were conducted approximately 1 hour before sunset up to sunset in the fall of 2023. The project area was searched for potential roosting locations, such as large trees with significant basal hollows and/or rocky outcrops with potential cave openings. None were located. Further focused surveys may be necessary during maintenance treatments. Overall, with these mitigations and protection measures, there is not expected to be an impact to this species from the proposed treatment activities.

Amphibians and Reptiles

California Giant Salamander (*Dicamptodon ensatus*)
Status: SSC
Habitation Requirements: California *Dicamptodon* salamanders are year round residents of California. In 1989, these salamanders were split into two species – California giant salamander (*Dicamptodon ensatus*) occurring south of the Mendocino County line and the coastal giant salamander (*Dicamptodon tenebrosus*) occurring in the north (Thomas et al. 2016). A hybrid zone exists approximately 6 miles north of Gualala; however outside of this area, the two species are known to be distinct (Thomas et al. 2016).
This species occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages.

Potential for Occurrence: Moderate potential for occurrence within project area. One collection on April 2nd 1981 by Wake et al,. Exact location unknown but mapped in the vicinity of mount Veeder road by CNDDB. No individuals identified during initial field reconnaissance.

Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species may wander outside the WLPZ.

Red-Bellied Newt (*Taricha rivularis*)
Status: SSC

Habitation Requirements: The red-bellied newt ranges within Mendocino, Sonoma, Humboldt, and Lake Counties. They are predominantly found in redwood forests, along the coast, however have also been detected in Douglas-fir, tan oak, mixed conifer, valley-foothill woodland, montane woodland, hardwood-conifer and madrone forest types, particularly when near streams. The preferred aquatic breeding habitats are moderate to fast-flowing streams with rocky substrates. Breeding coincides with the receding of streams after heavy winter rains. Adults are terrestrial and the aquatic breeding phase lasts from February to May. After breeding, adults leave streams but usually stay in the same drainage; however, they are also known to travel several kilometers between breeding years. Underground retreats are used from May to October, and adults forage on the surface before and as they migrate to streams. (Thomas et al. 2016).

Potential for Occurrence: There is a low - moderate potential for individuals to occur within the project area, no known occurrences within 1.7 miles.

Mitigation: The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation. This will protect this species during its breeding period, immediately following heavy winter rain events. SPR BIO-2 will require training for workers to identify and protect this species.

Western Pond Turtle (Emys marmorata)

Status: None

Habitat Requirements: The pond turtle is associated with permanent ponds, lakes, streams, or permanent pools along intermittent streams in a wide variety of habitats. It requires basking sites in the aquatic environment, grassy openings for nest sites, and nests are typically within 100 meters of a water source, although nests up to 500 meters have been recorded (Thomas et al. 2016).

Potential for Occurrence: The species has been observed approximately .9 miles southeast of the project site in agricultural reservoirs. Last observation 2 miles northeast of project site in August 2002. No sightings occurred during reconnaissance.

Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Nest sites near the project area have the potential to be impacted if located outside of the WLPZ. SPR BIO-2 will require training for workers to identify and avoid nesting sites during treatment.

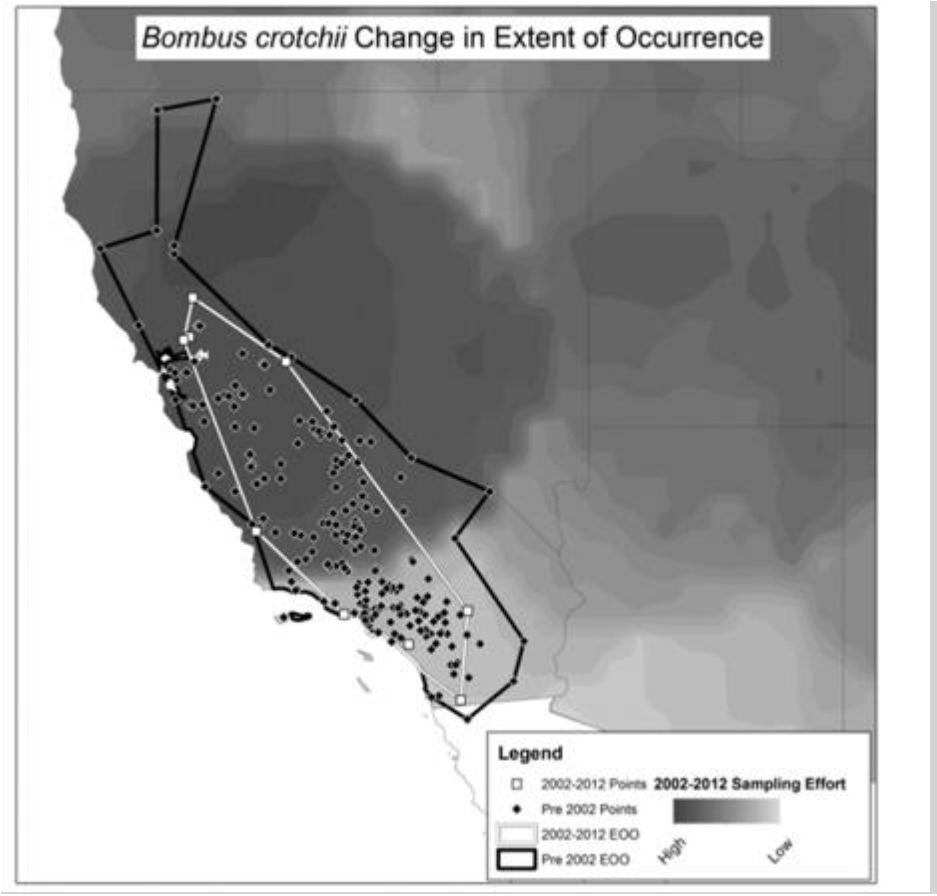
Bumblebee Discussion

Crotch bumblebee (*Bombus crotchii**)**
Status: Candidate State Endangered

Habitation Requirements: The crotch bumblebee is native to California, Baja California and has been reported in Nevada. This bee lives in grassland and scrub habitat types. It nests underground and its food plants consist of milkweeds, dustymaidens, lupines, medics, phacelias, and sages. This bee tolerates hotter and drier habitat types than do most bumblebees.

Potential for Occurrence: The project area is within the current range of the Crotch Bumble bee, however recent increased survey efforts have suggested a change in the extent of occurrence of this species. See the figure below. This change in extent would indicate a low likelihood of this species occurring within the treatment areas. The closest known occurrence according to CNDDB was from a collection in 1910 and is located approximately 6.5 miles southwest of the project site in Sobre Vista. Based on the recent data around this species, this information is outdated and no longer accurate. Sightings did not occur during initial project reconnaissance. The potential for occurrence within the

project area is moderate within the Timberhill property, and very low everywhere else. See the Treatment Activities map in Attachment C for this location. Most of the project area is heavily timbered. The Chapparal ecosystems which are present are not ideal habitat for this species due to the degree in which they are overgrown with manzanita, scrub oak, and other tall brush.



Potential Project Impact: Based on the above information, there is a low potential for this species to be impacted by the project in most of the vegetation types. There is an approximately 79-acre area of potential habitat within the Timber Hill property where broadcast burning has the potential to impact this species, should they be present.

Overall, The proposed project is expected to have an increase in potential habitat through the development of early successional forest types, associated with forest thinning and reduction of shrub cover in chaparral ecosystems. Also, the removal of small conifer trees from oak woodlands will allow for the expansion of grasslands. This is expected to have a net increase in floral resources and habitat creation over the long run.

Mitigations: Within the mapped bumblebee STZ (approximately 79 acres), broadcast burning shall be restricted to between October through February to avoid the potential bumble bee flight season.
Treatment areas in occupied or suitable habitat will be divided into a sufficient number of treatment units such that the entirety of the habitat is not treated within the same year; the objective of this measure is to provide refuge for special-status bumble bees during treatment activities and temporary retention of suitable floral resources proximate to the treatment area.
Treatments will be conducted in a patchy pattern to the extent feasible in occupied or suitable habitat, such that the entirety of the habitat is not burned or removed and untreated portions of occupied or suitable habitat are retained (e.g., fire breaks will be aligned to allow for areas of unburned floral resources for special-status bumble bees within the treatment area).
Herbicides will not be applied to flowering native plants within occupied or suitable habitat to the extent feasible during the flight season (March through September).

Western bumblebee (*Bombus occidentalis*)

Status: Candidate State Endangered

Habitation Requirements: The western bumble bee was once very common in the western United States and western Canada. It is mostly currently restricted to high meadows and coastal environments. It requires floral resources, undisturbed nest sites and overwintering sites. Nesting habitat is typically underground, such as in old animal burrows, but also possibly above ground such as in cavities in logs. Overwintering sites are probably under plant litter and debris. Flight period in California is from early February to late November, peaking in late June and late September. Western bumble bees primarily nest in underground cavities such as old squirrel burrows on open west-southwest facing slopes bordered by trees. Colonies can contain as many as 1,685 workers and produce up to 360 new queens.

Potential for Occurrence:
The project area is within the historic range of the Western bumblebee, however it is outside the current range, according to the most up to date CDFW "Current and Historic Species Ranges" map. No sightings occurred during initial project reconnaissance. As a result, the potential for occurrence within the project area is low.

Potential Project Impact**:** Low, due to the potential for occurrence. Nevertheless, if this species is present, it would likely be within the same area mapped and protected as the Bumblebee STZ.
Mitigations: No additional mitigations.

Obscure Bumblebee (*Bombus caligninosus)*
Status: SSC
Habitat Requirements**:** The obscure bumble bee is a species of bumblebee native to the west coast of the United States, where its distribution extends from Washington through to Southern California. The workers are most often seen on Fabaceae, the legume family, while queens are most often seen on Ericaceae, the heath family, and males have been observed most often on Asteraceae, the aster family. Common plants visited by the workers include ceanothus, thistles, sweet peas, lupines, rhododendrons, Rubus, willows, and clovers.
Potential for Occurrence: The closest known occurrence of this species according to CNDDB is approximately within 1.5 miles near Mount Veeder. A set of collections were made in the 70's with no collections since then, exact location unknown but mapped as best guess. As with the Crotch bumble bee, there is potential habitat within the 79 acre area shown in the Treatment Activities map.
Potential Project Impact: See Crotch bumblebee discussion above.
Mitigations: No additional mitigations.

Fish

Steelhead (*Oncorhynchus mykiss irideus)* [Northern California Distinct Population Segment]
Status: FT

Habitation Requirements: Habitat requirements for steelhead are similar to Coho, and vary depending on temporal, spatial variables and a fishes' life-stage. The major life stages for most anadromous salmonids include the upstream migration of adults, spawning, incubation, juvenile rearing, and seaward migration of smolts. Combined, the generalized habitat requirements for all life stages of the steelhead include suitable stream flow, accessibility to spawning sites, suitable substrate composition for spawning and rearing, fish food production, water temperature and summer refugia areas.

Habitat Potential: This species is known to exist within the class I watercourses within and adjacent to the project.

Mitigations: No potential impact with the following mitigations. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent sedimentation of watercourses. During periods where overland flow may occur, ground disturbing activity will cease. SPR BIO-2 will require training for workers to identify and protect this species.

Conclusion

The potential for treatment activities to result in adverse effects on special status species was examined in the PEIR. The impact is within the scope of the PEIR because the treatment activities and intensity are consistent with those analyzed in the PEIR. See attachment B for the full analysis of potential listed and non-listed species resulting from SPR BIO-1. With the included SPRs and mitigation measures listed above, the potential impact to sensitive species will be less than significant.

Impact BIO-3
There is a potential for the treatment activities to impact designated sensitive natural communities. Riparian areas have the potential to be impacted by operations and this was analyzed in the PEIR. With the inclusion of the SPRs listed above this impact will be less than significant.

All riparian habitats shall be protected with the provisions of HYD-4 and BIO-4, through the establishment of a WLPZ buffer. See BIO-4 regarding treatment specifications for riparian habitats. Treatments within this buffer were designed to protect the biological function of these sensitive communities. All riparian habitats are mapped as springs, wet areas, ponds, and Class I or II watercourses. BIO-4 will be implemented within the slope and class dependent WLPZ buffer. See Attachment A.

Impact BIO-4

No federally protected wetlands exist within the project area.

Impact BIO-5
The treatment activities could result in direct or indirect adverse effects on wildlife corridors because suitable habitat is present in the treatment area. These impacts were found to be within the scope of the PEIR. These treatment activities are also within the scope because they are the same as those analyzed in the PEIR. In fact, it is expected that some wildlife corridors for certain species will ultimately be improved by the treatment activities. By protecting the forest ecosystem as a whole, the habitat corridors, while slightly degraded in the short term will be protected from high intensity wildfire in the future. This will conserve the corridors in the long run and promote a healthy fire resilient ecosystem. Furthermore, with the inclusion of the riparian zone protections, there will be areas of intact wildlife corridors which connect multiple treatment areas to untreated landscapes.

Impact BIO-6
The treatment activities do not have the potential to result in the reduction of habitat or abundance of common wildlife. There is expected to be an increase in habitat for species throughout the treatment area, due to the removal of dead and down, as well as invasive species and the return of the forests to a historically accurate stocking level. Furthermore, the consequences of a devastating wildfire would be catastrophic to wildlife and their habitat. By taking steps to reduce standing dead and down fuels and improve fire resiliency of existing habitat, the potential for such a wildfire to occur will be greatly reduced. Because of this, the project as proposed will not have a significant negative impact to common wildlife habitat or individuals and a long-term increase and net benefit to habitat and wildlife is expected. The treatment activities are consistent with those analyzed in the PEIR and are therefore within the scope of the PEIR.

Impact BIO-7
This impact does not apply to the treatment areas.

Impact BIO-8
This impact does not apply to the treatment areas.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscape presented in the PEIR, constitutes a change in the geographic extent presented in the PEIR. The habitat conditions and characteristics as well as the biological resources present in these areas are the same as those within the treatable landscape. This is because the areas which fall outside of the treatable landscape are very close in range to the areas within. Generally, these species do not adhere to the "treatable landscape" as it is mapped, which is imperfect and doesn't contain all forest types or extents. Furthermore, the analysis above and in attachment B looks at all potential species and habitats which are specific to this project as shown on the maps in attachment C. There are no species which are not examined due to the "treatable landscape". Consequently, the impact will be the same and is within the scope of this PEIR for all of the above listed impacts.

PD-3.6: GEOLOGY, SOILS, PALEONTOLOGY, AND MINERAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact GEO-1: Result in Substantial Erosion or Loss of Topsoil	LTS	Impact GEO-1, pp. 3.7-26 – 3.7-29	Yes	GEO-1 through GEO-8, AQ-3, AQ-4	NA	LTS	No	Yes
Impact GEO-2: Increase Risk of Landslide	LTS	Impact GEO-2, pp. 3.7-29 – 3.7-30	Yes	GEO-1, GEO-4, GEO-7, GEO-8, AQ-3	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New Geology, Soils, Paleontology, and Mineral Resource Impacts: Would the treatment result in other impacts to geology, soils, paleontology, and mineral resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact GEO-1

There is a potential for the treatment activities to cause erosion and loss of topsoil. This impact was examined in the PEIR and determined to be less than significant. The proposed project is within the scope of the PEIR because the treatment activities are the same as those examined in the PEIR. Furthermore, with the inclusion of SPR GEO-1-8, the impact will be reduced to a level of insignificance. By postponing ground disturbing operations during saturated soil conditions and implementing the erosion control measures outlined in the SPRs the project proponent will ensure the topsoil is protected.

- For SPR GEO-3: It is not practicable to treat all exposed soil with mulch after a prescribed fire which exposes more than 50% of the soil surface within a treatment area. First off, this would defeat the purpose of removing flammable material for the health of an ecosystem, which has been identified as having too much fuel. By adding mulch to an area that was just burned, the project proponent would essentially be putting fuel back on the landscape. Next, these forests are highly adapted to fire, meaning they are equipped to restore ground cover quickly in order to prevent catastrophic top soil loss in the long term. Finally, the scale in which fire is used on a landscape, is such that the degree of soil exposed can be up to 100 or more acres.

For these reasons, it is unreasonable to assume that mulching or otherwise stabilizing all exposed soils treated with fire. The project proponent will only stabilize disturbed soil as a result of prescribed fire, immediately around road watercourse crossings and potentially unstable areas.

- For SPR GEO-7: See appendix C for map of high EHR soils. Heavy equipment is not allowed on slopes greater than 50% within the high EHR mapped areas. For all other areas when slopes are between 50-65% heavy equipment is restricted to existing stable tractor roads.

Impact GEO-2

The treatment activities would include vegetation removal from steep slopes. An RPF will assess the treatment areas on slopes over 50% to identify potentially unstable areas and soils prior to a project. Unstable areas that were identified by the RPF during reconnaissance are mapped. If additional UAs are discovered, they will be amended to the maps. See Appendix C for a map of these potential unstable areas. Operations will not occur within these areas unless reviewed by a licensed geologist.

Impact GEO-2 is within the scope of the PEIR because the treatment activities are the same as those assessed in the PEIR.

PD-3.7: GREENHOUSE GAS EMISSIONS

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact GHG-1: Conflict with Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs	LTS	Impact GHG-1, pp. 3.8-10 – 3.8-11	Yes	None	NA	LTS	No	yes
Impact GHG-2: Generate GHG Emissions through Treatment Activities	PSU	Impact GHG-2, pp. 3.8-11 – 3.8-17	Yes	AQ-3	GHG-2	SU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New GHG Emissions Impacts: Would the treatment result in other impacts to GHG emissions that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact GHG-1

Use of vehicles/equipment and prescribed burning during treatment activities will result in greenhouse gas emissions. Conflicts with applicable plans, policy, and regulations aimed at reducing GHG emissions may occur due to this project. This was examined in the PEIR. These impacts associated with this project are within the scope of the PEIR because the treatment activities, types of equipment, and duration of use are the same as those analyzed in the PEIR. Furthermore, by carrying out the project in this way, the goal will be to reduce the likelihood of a catastrophic wildfire from occurring. This type of event would create a massive GHG emission at one time. The controlled release of GHG in small amounts during this project is less impactful than the, all at once, release which is likely to occur during a catastrophic wildfire. SPR GHG-1 is not applicable to the proposed project because the property is not a registered carbon offset property. As such, the requirement to inform reporting under the Board of Forestry and Fire Protection's assembly bill 1504 Carbon Inventory Process does not apply.

Impact GHG-2

Use of vehicles/equipment and prescribed burning during treatment activities will result in greenhouse gas emissions. This was examined in the PEIR. These impacts associated with this project are within the scope of the PEIR because the treatment activities, types of equipment, and duration of use are the same as those analyzed in the PEIR. SPR GHG-1 is not applicable to the proposed project because the property is not a registered carbon offset property. As such, the requirement to inform reporting under the Board of Forestry and Fire Protection's assembly bill 1504 Carbon Inventory Process does not apply. Mitigation measure GHG-2 will be applied to reduce the GHG emissions during prescribed fire activity. These measures, such as mosaic burning, low fuel consumption, and retention of LWD/snags will provide for Biochar production, carbon sequestration, and reduced carbon emissions. With the

implementation of this mitigation measure, the impact was determined to be potentially significant and unavoidable. This is based on a good faith determination made by the board of forestry and does not necessarily indicate and actual significant impact. In fact, the determination seems to be made based on a lack of data rather than an indication of actual proof of significant impact related to these treatments.

The project proponent expects a net benefit to carbon emissions due to the protection and conservation of forest resources associated with these types of treatments. A healthy growing forest is expected to sequester more carbon than a forest starting from square one after a complete stand replacing fire. Likewise, a decadent overstocked forest which has slowed growth significantly, will sequester less carbon, than one which is adapted to intermediate disturbances - such as those treatments proposed by this project. Thus, the project proponent disagrees with Ascent's determination that this impact is significant and unavoidable, even when considering the avoided impact of a catastrophic wildfire. Instead, this project is expected to have a less than significant impact on greenhouse gas emissions through the development of a healthy resilient forest, which is proven to grow faster – putting on more wood every year (i.e. sequestering more carbon). Furthermore, research has proven that disturbance in a forest ecosystem promotes an increased growth rate than one in which there is a significant lack of disturbance. Nevertheless, the PEIR impact will be listed in the table above and the mitigation measure prescribed will be implemented, where feasible.

PD-3.8: ENERGY RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact ENG-1: Result in Wasteful, Inefficient, or Unnecessary Consumption of Energy	LTS	Impact ENG-1, pp. 3.9-7 – 3.9-8	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

New Energy Resource Impacts: Would the treatment result in other impacts to energy resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact ENG-1

The impact to energy resources as a result of this project would be the same as described in the PEIR. This impact was determined to be less than significant and unavoidable. The impact is expected to decrease over time as equipment and methods used for vegetation management become more efficient.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent of the PEIR. However, the energy use outside of the treatable landscape is expected to be highly similar, if not the same as within it (for this project). This is because the vegetation types, fuel types, and slopes are mostly consistent throughout. Likewise, the equipment used will not vary.

There are some areas being included which contain a large proportion of grassland in contrast to thick timber and chaparral associated with the treatable landscape. In these areas we would expect to see a net reduction in energy consumption during treatments, due to the lower level of fuel loading per acre. a result of this information, the impact determination will not change.

PD-3.1: HAZARDOUS MATERIALS, PUBLIC HEALTH AND SAFETY

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact HAZ-1: Create a Significant Health Hazard from the Use of Hazardous Materials	LTS	Impact HAZ-1, pp. 3.10-14 – 3.10-15	Yes	HAZ-1, HYD-4	NA	LTS	No	Yes
Impact HAZ-2: Create a Significant Health Hazard from the Use of Herbicides	LTS	Impact HAZ-2, pp. 3.10-15 – 3.10-18	Yes	HAZ-5, HAZ-6, HAZ-7, HAZ-8, HAZ-9	NA	LTS	No	Yes
Impact HAZ-3: Expose the Public or Environment to Significant Hazards from Disturbance to Known Hazardous Material Sites	PS	Impact HAZ-3, pp. 3.10-18 – 3.10-19	Yes	NA	HAZ-3	LTSM	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Hazardous Materials, Public Health and Safety Impacts: Would the treatment result in other impacts related to hazardous materials, public health and safety that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact HAZ-1

The proposed treatment activities would require the use of fuels and related accelerants, which are hazardous materials. The potential for these treatment activities to cause a significant health hazard was examined in the PEIR and determined to be Less than significant with the inclusion of the SPRs listed above. This impact is within the scope of the PEIR because the treatment activities, associated equipment, and types of hazardous materials used are the same as those analyzed in the PEIR.

Impact HAZ-2

Herbicide application may be utilized to control invasive non-native plants/trees, as well as reduce the level of resprouting within fuel breaks. Application will be achieved by ground methods only (no aerial spraying will occur). The target plant will be backpack sprayed or cut and stump painted. The potential for treatment activities to cause a significant health hazard was examined in the PEIR. This impact is within the scope of the PEIR because the types of herbicides and the application methods proposed are the same as those analyzed in the PEIR. With the implementation of SPRs HAZ-5 through HAZ-9, the impacts were determined to be less than significant.

Impact HAZ-3
Soil disturbance during mechanical treatments and prescribed burning have the potential to expose workers, the public and the environment to existing hazardous materials, if present within the treatment areas. This impact was examined in the PEIR and determined to be potentially significant, and less than significant after mitigation. The impact is the same for this project because the treatment types and potential hazardous materials are the same.

Mitigation HAZ-3 will be implemented by the project proponent prior to implementation of mechanical and prescribed fire treatment activities. The landowner for each property shall be consulted as to the location of known hazardous materials on the property. Also, the project proponent will conduct a DTSC EnviroStor web search(https://www.envirostor.dtsc.ca.gov/public/) and consult DTSC's Cortese List to identify any known contamination sites within the project site.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the hazardous materials used, the environmental conditions, and the exposure potential is the same as what was analyzed in the PEIR. Furthermore, the regulatory conditions and policies are the same. As a result, the inclusion of land outside of the treatable landscape is within the scope of the PEIR. There is not expected to be a significant change in the potential hazardous impact outside of the treatable landscape.

PD-3.2: HYDROLOGY AND WATER QUALITY

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact HYD-1: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through the Implementation of Prescribed Burning	LTS	Impact HYD-1, pp. 3.11-25 – 3.11-27	Yes	HYD-1, HYD-4, GEO-4, GEO-6, AQ-3, BIO-4, BIO-5	NA	LTS	No	Yes
Impact HYD-2: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through the Implementation of Manual or Mechanical Treatment Activities	LTS	Impact HYD-2, pp. 3.11-27 – 3.11-29	Yes	HYD-1, HYD-2, HYD-4, HYD-5, HYD-6, GEO-1, GEO-2, GEO-3, GEO-4, GEO-5, GEO-7, GEO-8, BIO-1, HAZ-1, HAZ-5	NA	LTS	No	Yes
Impact HYD-3: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Prescribed Herbivory	LTS	Impact HYD-3, p. 3.11-29	Yes	HYD-3,	NA	LTS	No	Yes
Impact HYD-4: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through the Ground Application of Herbicides	LTS	Impact HYD-4, pp. 3.11-30 – 3.11-31	Yes	HYD-1, HYD-4 HYD-5, BIO-4, HAZ-5, HAZ-6 HAZ-7	NA	LTS	No	Yes

Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact HYD-5: Substantially Alter the Existing Drainage Pattern of a Treatment Site or Area	LTS	Impact HYD-5, p. 3.11-31	Yes	HYD-4, HYD-6, GEO-1, GEO-2, GEO-5	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Hydrology and Water Quality Impacts: Would the treatment result in other impacts to hydrology and water quality that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact HYD-1

Ash and debris from prescribed burning could be washed by runoff into drainages and streams and this potential impact was assessed in the PEIR. To prevent this impact, treatment areas are designed to avoid streams and watercourses, while implementing erosion control measures as described in the SPRs. WLPZs and class III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See HYD-4 in the SPRs in Attachment A. This impact was assessed in the PEIR and found to be less than significant with the implementation of the SPRs listed above. The treatment activity is within the scope of the PEIR because it is designed to be a low intensity prescribed burn, which is the same as what was analyzed in the PEIR. Chaparral is planned to be burned at an appropriate interval to prevent converting this ecotype. Chaparral will be burned in patches to prevent exposing large areas of bare soil within the project area and avoid hydrolyzing the soil. These burn unit designs will be approved by an RPF to ensure this impact remains less than significant.

Impact HYD-2

Vegetation treatments will include mechanical and manual methods. WLPZs and class III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See HYD-4 in the SPRs in Attachment A. This will significantly limit activities within the WLPZs and class IIIs to lower this impact to a level of insignificance. Heavy equipment shall not be used when saturated soil conditions exist, preventing compaction, soil loss, and sedimentation. Waterbars shall be installed where necessary, as outlined in the SPRs, to prevent sedimentation. This includes, existing roadway drainage structure protection, as well as areas exposed during mechanical treatments.

Mechanical treatments will most often entail mastication, which provides erosion control innately during treatment. The chips created during this type of treatment will act as a mulch, covering any freshly exposed soil, preventing soil loss during heavy rain events. Erosion control monitoring shall ensure all facilities are functioning and exposed soil is not at risk of delivering to any class I, II, or III watercourses. Impact HYD-2 was assessed in the PEIR and found to be less than significant with the implementation of the listed SPRs. The treatment activity is within the scope of the PEIR because it is the same as what was analyzed in the PEIR.

Impact HYD-3
Prescribed herbivory does have the potential to violate water quality standards, but with the inclusion of the SPRs listed above, the impact will be less than significant. WLPZs and class III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See HYD-3 in the SPRs in Attachment A. This impact was assessed in the PEIR and found to be less than significant. The treatment activity is within the scope of the PEIR because it is the same as what was analyzed in the PEIR.

Impact HYD-4
The use of herbicide has the potential to violate water quality standards. WLPZs and class III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See SPRs in Attachment A. These SPRs pertinent to this impact were designed to prevent herbicide from entering waterways in amounts deleterious to water quality. SPR HAZ-5 requires the project proponent to prepare a spill prevention and response plan prior to beginning any herbicide treatment activities. This will mitigate potential impacts associated with spilled chemicals reaching waterways. Herbicide use will comply with application regulations as per SPR HAZ-6. Use will be coordinated with the County Agricultural Commissioner, and all required licenses and permits will be obtained prior to herbicide application. All herbicide applications will be implemented consistent with recommendations prepared annually by a licensed PCA.

This impact was assessed in the PEIR and found to be less than significant with the implementation of the SPRs listed above. The treatment activity is within the scope of the PEIR because it is the same as what was analyzed in the PEIR and all SPRs listed in the table above shall be implemented prior to initiation.

Impact HYD-5
Treatment activities could cause ground disturbance and erosion, which could directly or indirectly modify existing drainage patterns. WLPZs and class III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from these treatment activities. The SPRs listed above will require waterbar placement where erosion and runoff are highly likely, as well as require repair and maintenance of existing drainage and erosion control infrastructure. For instance, all existing drainage structures are required to be marked prior to treatment activities to facilitate re-establishment prior to the first significant rain event. This doesn't mean existing erosion control issues will be fixed, but rather all erosion control devices functioning pre-project implementation shall be maintained.

Impact HYD-5 was assessed in the PEIR and found to be less than significant with the implementation of the listed SPRs. The treatment activities are within the scope of the PEIR because they are the same as those analyzed in the PEIR.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the hydrology, topography, vegetation types and treatment methods are consistent with those analyzed in the PEIR, thus they are also within the scope of the PEIR. Furthermore, the existing environmental and regulatory conditions pertinent to hydrology and water quality are the same.

PD-3.3: LAND USE AND PLANNING, POPULATION AND HOUSING

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact LU-1: Cause a Significant Environmental Impact Due to a Conflict with a Land Use Plan, Policy, or Regulation	LTS	Impact LU-1, pp. 3.12-13 – 3.12-14	No	NA	NA	NA	NA	NA
Impact LU-2: Induce Substantial Unplanned Population Growth	LTS	Impact LU-2, pp. 3.12-14 – 3.12-15	No	NA	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Land Use and Planning, Population and Housing Impacts: Would the treatment result in other impacts to land use and planning, population and housing that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact LU-1
NA

Impact LU-2
NA

PD-3.4: NOISE

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact NOI-1: Result in a Substantial Short-Term Increase in Exterior Ambient Noise Levels During Treatment Implementation	LTS	Impact NOI-1, pp. 3.13-9 – 3.13-12; Appendix NOI-1	yes	AD-3, NOI-1, NOI-2, NOI-4, NOI-5, NOI-6	NA	LTS	No	Yes
Impact NOI-2: Result in a Substantial Short-Term Increase in Truck-Generated SENL's During Treatment Activities	LTS	Impact NOI-2, p. 3.13-12	yes	NOI-1,	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Noise Impacts: Would the treatment result in other noise-related impacts that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact NOI-1
The treatment activities have the potential for a short-term increase in ambient noise levels from the use of heavy equipment. This is an unavoidable part of accomplishing the goals of this and all holistic vegetation treatments. These impacts were examined in the PEIR and were found to be Less than significant. The impacts are within the scope of the PEIR because the treatment activities and methods are the same as those analyzed in the PEIR.

Near the southernmost treatment area (Timber Hill) there is a housing development and a school (Browns Valley Elementary School) that will need to be notified prior to treatment activities at this property. These are the only areas where there is a potential noise related impact. The SPRs will apply to treatment within the Timber Hill property.

Impact NOI-2
Same as NOI-1

CalVTP Addendum: Change to Geographic Extent

The addition of area that is outside the treatable landscapes will not change the determination that this project is within the scope of the PEIR because there will not be a different level of noise associated with the additional area. Also, the exposure to sensitive receptors is analyzed based on the project boundaries which are independent of the treatable landscape shape.

PD-3.5: RECREATION

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact REC-1: Directly or Indirectly Disrupt Recreational Activities within Designated Recreation Areas	LTS	Impact REC-1 pp. 3.14-6 – 3.14-7	Yes	REC-1	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Recreation Impacts: Would the treatment result in other impacts to recreation that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact REC-1

Treatment activities will occur within designated recreational areas of Timberhill Park. The potential for treatment activities to disrupt recreational activities was examined in the PEIR. The impacts associated with this project are within the scope of the PEIR because the treatment activities and recreational uses are the same as those analyzed in the PEIR. Treatment activities will rarely cause closures of recreation areas, and those closures will be for a short time.

Potential recreational users will be notified 2 weeks prior to park closing as per SPR REC-1, if the entire park will be closed down. If however, a partial closure will occur, the notification will occur the day of the partial closure. There may be an instance where the park will need to be closed without the 2 weeks' notice. For instance, when utilizing prescribed burning as a treatment tool, 2 weeks' notice is highly unlikely. This is because burning is highly dependent on weather conditions specified in the burn plan. In some instances, one day notice may be all that is feasible. This will not change the less than significant determination.

CalVTP Addendum: Change to Geographic Extent

The addition of area that is outside the treatable landscapes will not change the determination that this project is within the scope of the PEIR because there will not be a different type of recreational area or use as a result. The treatment types will also be the same, meaning the degree and extent of a potential closure will not change. SPR REC-1 will be applied both within the treatable landscape and outside it.

PD-3.6: TRANSPORTATION

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact TRAN-1: Result in Temporary Traffic Operations Impacts by Conflicting with a Program, Plan, Ordinance, or Policy Addressing Roadway Facilities or Prolonged Road Closures	LTS	Section 3.15.2; Impact TRAN-1 pp. 3.15-9 – 3.15-10	No	NA	NA	NA	NA	NA
Impact TRAN-2: Substantially Increase Hazards due to a Design Feature or Incompatible Uses	LTS	Impact TRAN-2 pp. 3.15-10 – 3.15-11	Yes	AD-3, HYD-1, HYD-2, TRAN-1	NA	LTS	No	Yes
Impact TRAN-3: Result in a Net Increase in VMT for the Proposed CalVTP	PSU	Impact TRAN-3 pp. 3.15-11 – 3.15-13	Yes	NA	AQ-1; *See exclusions in discusion*	PSU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Transportation Impacts: Would the treatment result in other impacts to transportation that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact TRAN-1
NA

Impact TRAN-2
Smoke generated during prescribed burning operations may necessitate the implementation of a Traffic Management Plan (TMP). The need for this will be assessed during the preparation of the prescribed burn based on weather, location of burn and orientation to local traffic patterns. This impact was assessed in the PEIR. The impact of this project is within the PEIR because the treatment activity is the same as what was covered in the PEIR. A traffic plan for this reason is not anticipated, with this specific project. Most treatment units are at much higher elevation compared to the surrounding roadways. Burning is often suspended on days where weather conditions prevent smoke from exiting the atmosphere quickly.

Impact TRAN-3
This impact was examined in the PEIR and this projects impact determination is the same because the project utilizes the same treatment methods and equipment.

The overall impact was determined to be Potentially significant and un-avoidable by the PEIR. Mitigation measure AQ-1 will be applied where feasible and will, along with the SPRs, reduce the impact. The following mitigation measures listed under AQ-1 will not be applied due to lack in technology and infeasibility at the local level:

- Electric and gasoline-powered equipment will be substituted for diesel-powered equipment.
    - *Currently there are no alternatives available which offer the functional ability to handle the workload required for the treatment activities. Diesel engines are the most efficient and widely available option for completing fuels treatments, particularly with regards to mechanical treatment activities. Furthermore, gasoline engines lack the torque required to complete treatments on steep slopes under extreme loads. This is where Diesel engines have an advantage, allowing treatment on areas which would otherwise be untreatable. Diesel powered equipment also has a greater workload ability, allowing work to be completed faster. This has both an economic impact to the project as well as a reduced duration of air quality offense.*

      Lithium-ion batteries lack the range and charging speed to allow "theoretical" electric powered heavy equipment to complete the job within any sort of real-world efficiency. Because the jobs are so far from any charging station, it would be necessary to have a mobile charging source. That charging source would likely require a gas-powered generator to work (due to the location of the proposed treatments), thus defeating the purpose of the mitigation measure.

      Ultimately, the technology is lacking, both locally and elsewhere, to include this mitigation measure as a feasible option.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the land included doesn't contain areas which introduce new regulatory environments or change the impact on transportation as analyzed.

PD-3.7: PUBLIC SERVICES, UTILITIES AND SERVICE SYSTEMS

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact UTIL-1: Result in Physical Impacts Associated with Provision of Sufficient Water Supplies, Including Related Infrastructure Needs	LTS	Section 3.16.1 pp. 3.16-2 – 3.16-3; Impact UTIL-1 p. 3.16-9	Yes	NA	NA	LTS	No	Yes
Impact UTIL-2: Generate Solid Waste in Excess of State Standards or Exceed Local Infrastructure Capacity	PSU	Section 3.16.1 pp. 3.16-3 -3.16-5; Impact UTIL-2 pp. 3.16-10 – 3.16-12	No	NA	None	NA	NA	NA
Impact UTIL-3: Comply with Federal, State, and Local Management and Reduction Goals, Statutes, and Regulations Related to Solid Waste	LTS	Section 3.16.2 pp. 3.16-6 – 3.16-7; Impact UTIL-2 p. 3.16-12	No	NA	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Public Services, Utilities and Service System Impacts: Would the treatment result in other impacts to public services, utilities and service systems that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact UTIL-1
Treatments involve the use of prescribed burning, which may require water usage if the burn goes out of prescription. Also, water may be utilized for dust abatement as described in the SPRs. The potential increased demand for water was examined in the PEIR. The impact is within the scope because the activities scope and duration are the same as those analyzed in the PEIR. The amount of water potentially required was assessed in the PEIR and found to be less than significant.

Impact UTIL-2
Vegetation biomass and other material will not be transported off site during operations. All vegetation shall be burned, chipped, or lopped and scattered on site.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the land included doesn't contain new areas which when burned, will require a significant increase in the required water used for prescribed fire mop up. Also, the environmental conditions are the same as those assessed within the treatable landscape. As a result, there are not expected to be any new impacts related to UTIL-1 , 2, or 3. The included areas are within the scope of the PEIR.

PD-3.8: WILDFIRE

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact WIL-1: Substantially Exacerbate Fire Risk and Expose People to Uncontrolled Spread of a Wildfire	LTS	Section 3.17.1; Impact WIL-1 pp. 3.17-14 – 3.17-15	Yes	HAZ-2, HAZ-3, HAZ-4	NA	LTS	No	Yes
Impact WIL-2: Expose People or Structures to Substantial Risks Related to Post-Fire Flooding or Landslides	LTS	Section 3.17.1; Impact WIL-2 pp. 3.17-15 – 3.17-16	Yes	AQ-3, GEO-1 GEO-2, GEO-3, GEO-4, GEO-5, GEO-8	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

New Wildfire Impacts: Would the treatment result in other impacts related to wildfire that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact WIL-1

Treatment activities pose a risk of wildfire ignition as well as prescribed fire escaping its control lines. This potential risk was examined in the PEIR and found to be less than significant with implementation of the SPRs. This impact is within the scope of the PEIR because the treatment activities, types of equipment and duration/intensity are the same as those analyzed in the PEIR. The project proponent is responsible for maintaining control lines during all prescribed burning activities.

Impact WIL-2

Steep slopes occur within the project area. The potential exposure for people or structures to post-fire landslides was examined in the PEIR. This impact is within the scope of the PEIR because the treatment activities, types of equipment and duration/intensity are the same as those analyzed in the PEIR. With the implementation of the above listed SPRs, the impact should be less than significant. Low intensity prescribed fire, if utilized, is not expected to have a significant effect on slope stability. Low intensity burning does not cause the same issues as a high intensity wildfire and should not be analyzed in the same way in terms of the environmental impacts to soil and slope stability. Mechanical treatments on steep slopes may have the potential to cause slope instability, but with the inclusion of the above SPRs, this impact will be avoided and lessened. All proposed mechanical treatments shall be reviewed by an RPF prior to project implementation to ensure negative impacts to slope stability will be avoided.

The treatment project will reduce the potential for high intensity wildfire, which has a much greater potential impact on slope stability due to the soil hydrolysis which often occurs. Thus, this project is expected to have a net reduction in this potential impact overall.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the land included doesn't contain new areas which when treated, will cause a significant increase in the impacts listed above. Also, the environmental conditions are the same as those assessed within the treatable landscape. The included areas outside the treatable landscape have the same environmental conditions, vegetation types, erosion hazard ratings, geology, and orientations to the public as within the treatable landscapes. As a result, there are not expected to be any new impacts outside the scope of the PEIR. Consequently, these additional areas are within the scope of the PEIR.

References

- Fire in California's Ecosystems. 2006. Neil G. Sugihara, Jan W. Van Wagtendonk, Keven E Shaffer, Joann Fites-kaufman, Andrea E. Thode. University of California Press, Berkeley and Los Angeles, California.
- CalEPA. California Environmental Protection Agency
- California Department of Fish and Wildlife. https://Wildlife.ca.gov
- California Department of Transportation. List of eligible and officially designated scenic highways. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.
- Inventory of Rare and Endangered Plants of California. California Native Plant Society. (online). https://www.rareplants.cnps.org.
- California Natural Diversity Database. 2021. Results of records search. Sacramento: California Department of Fish and Wildlife, Biogeographic Data. List updated August, 2021.
- Caltrans. California Department of Transportation.
- DTSC. California Department of Toxic Substances Control.
- Natural Resource Conservation Service. Web Soil Survey. https://websoilsurvey.nrcs.usda.gov/app/.
- California Forest Practice Rules 2020. State of California. Department of Forestry and Fire Protection. P.O. Box 944256, Sacramento, CA 94244-2460
- John D. Stuart, John O. Sawyer Trees and Shrubs of California. University of California Press Berkeley and Los Angeles, California. 2001.
- David L. Wood, Thomas W. Koerber, Robert F. Scharpf, Andrew J. Storer. Pests of the Native California Conifers, University of California Press Berkeley and Los Angeles, California. 2003
- National Audubon Society, Field Guide to Trees, Western Region: Elbert L. Little. Chanticleer Press Inc. 1980
- Weaver and Hagans. Handbook For Forest And Ranch Roads , 2015
- Joyce and Nungesser, 2000. Ecosystem Productivity and the Impact of Climate Change: USDA Forest Service Gen. Tech. Rep. RMRS-GTR-59. (pgs. 46-68) 2000.
- North Coast Regional Water Quality Control Board (NCRWQCB) 2006. Desired Salmonid Freshwater Habitat Conditions for Sediment-Related Indices, July 28, 2006. 60 pgs.
- Chamberlin, T. W. et al. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. Special Publication 19, American Fisheries Society, Bethesda, Maryland. Pg. 181-205.
- Everest, F. H. and W. R. Meehan. 1981. Some Effects of Debris Torrents on Habitat of Anadromous Salmonids. National Council of the Paper Industry for Air and Stream Improvement, Technical Bulletin No. 353, New York, NY. Pg 23-30.
- Madej, M. A. et al. 2000. Effectiveness of Road Restoration in Reducing Sediment Loads. Unpublished Report, U.S. Geological Survey Redwood Field Station, Arcata, CA.
- McGarigal, K. and W. C. McComb. 1995. Relationships Between Landscape Structure and Breeding Birds in the Oregon Coast Range. Ecological Monographs, Volume 65. pg. 235-260.
- Megahan, W. F. Roads and Forest Site Productivity. U.S. Forest Service, Intermountain Research Station, Ogden UT.
- Murphy, M. L. 1995. Forestry Impacts on Freshwater Habitat of Anadromous Salmonids in the Pacific Northwest and Alaska-- Requirements for Protection & Restoration. NOAA Coastal Ocean Program Decision Analysis Series No. 7. U.S. Dept. of Commerce, National Oceanic & Atmospheric Administration, Coastal Ocean Office, Silver Spring, MD.
- Reeves, G. H., J. D. Hall, T. D. Roelofs, T. L. Hickman, and C. O. Baker. 1991. Rehabilitating and modifying stream habitats. Pages 519-557 *in* W. R. Meehan, ed. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society, Bethesda, Maryland. Special Publication 19.

- Reeves, G. H. et al. 1995. A Disturbance-Based Ecosystem Approach to Maintaining and Restoring Freshwater Habitats of Evolutionarily Significant Units of Anadromous Salmonids in the Pacific Northwest. American Fisheries Society Symposium 17, Bethesda, MD. Pg 334-349.
- Reid, L.M. 1998. Proceedings of the Conference on Coastal Watersheds: The Caspar Creek Story. Pacific Southwest Research Station, Albany, CA. pg 117-127.
- Rice, R. et al. 1975. Sampling Water Quality to Determine the Impact of Land Use on Small Streams. Paper presented at ASCE Watershed Management Symposium, Utah State University, Utah. August, 1975.
- Sindel, J. E. 1960. Jackson State Forest Pilot Study in Stream Clearance 1952-1959 California Division of Forestry. Sacramento, California.
- Yocom, C. F. and S. W. Harris 1975. Birds of Northwestern California. Humboldt State University, Arcata, CA.
- Ziemer, R.R. 1981. Roots and Stability of Forested Slopes. In proceedings: Symposium on Erosion and Sediment Transport in Pacific Rim Steeplands. Christchurch, New Zealand. January 1991. Pages 343-361.
- Zwieniecki,M. A. and M. Newton. 1999. Influences of Streamside Cover and Stream Features on Temperature Trends in Forested Streams of Western Oregon. Western Journal of Applied Forestry, Volume 14, Issue 2, pg. 106-113.
- Purcell, K. L., A. K. Mazzoni, S.R. Mori & B. B. Boroski. 2009. Resting structures & resting habitat of fishers in the southern Sierra Nevada, Ca. Forest Ecology & Management. 258 (2009) 2696-2706. http://naldc.nal.usda.gov/download/35920/PDF
- Rombough, C.J. 2006. Wintering Habitat Use by Juvenile Foothill Yellow-Legged Frogs (*Rana boylii*): The Importance of Seeps. Northwestern Naturalist 87:159.
- https://ucjeps.berkeley.edu/eflora
- Brandon M. Collins, Jason J. Moghaddas, Scott L. Stephens. 20 November 2006. Forest Ecology and Management. Initial changes in forest structure and understory plant communities following fuel reduction activities in a Sierra Nevada mixed conifer forest.