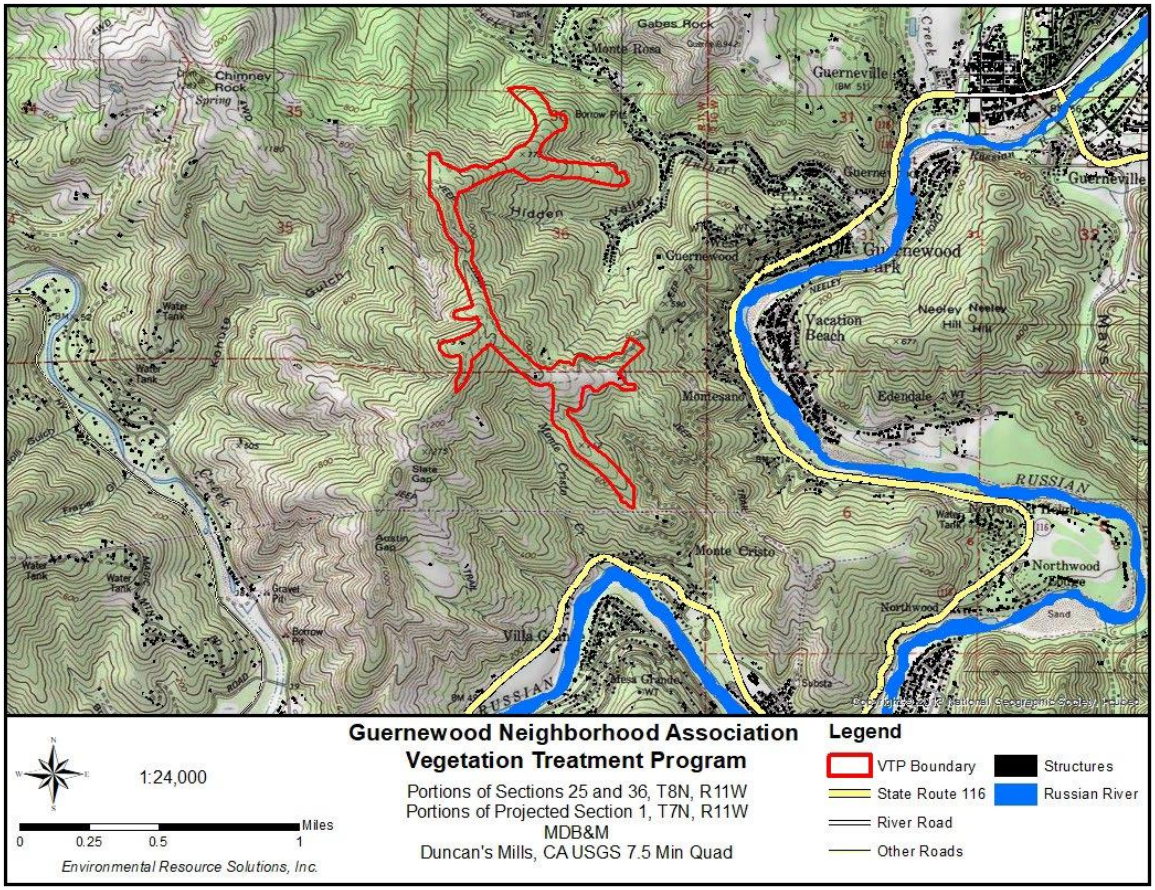
ENVIRONMENTAL
RESOURCE
SOLUTIONS, INC.
Forestry & Land Management
707-566-7510

GUERNEWOOD PROJECT-SPECIFIC ANALYSIS AND ADDENDUM TO THE CalVTP PROGRAM EIR



Prepared for:

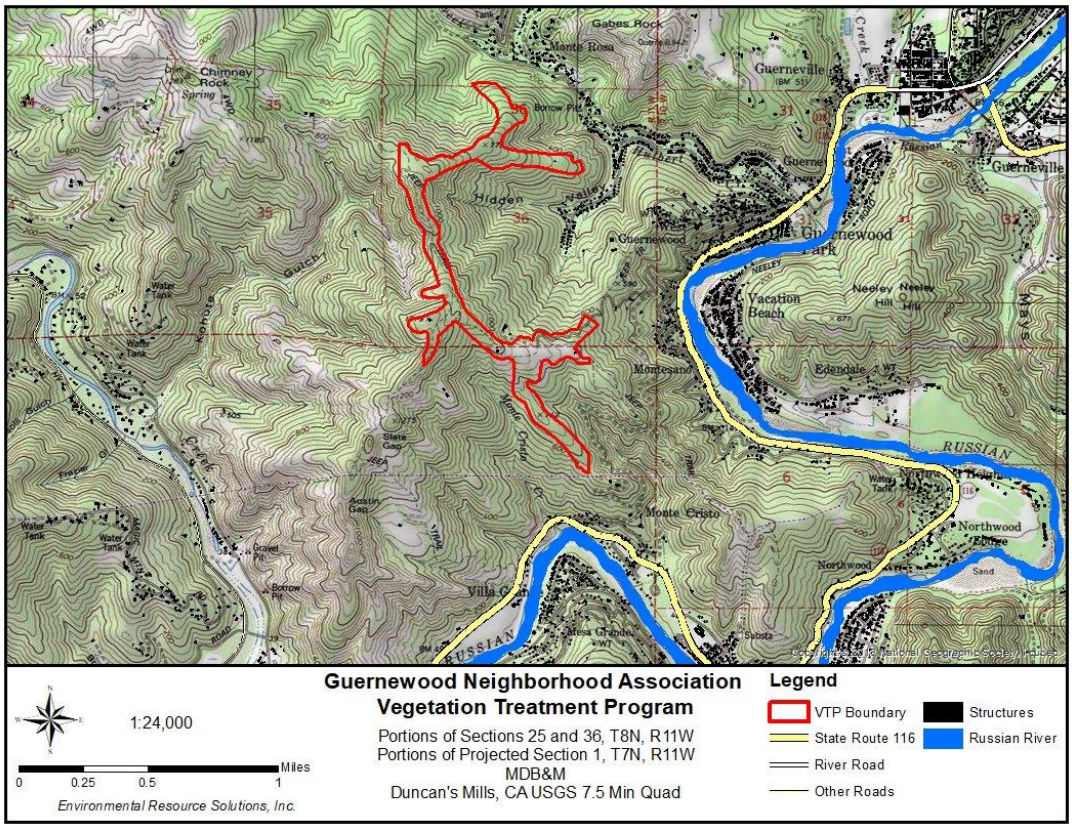
permit SONOMA

County of Sonoma

August 2023

PROJECT-SPECIFIC ANALYSIS AND ADDENDUM TO THE CalVTP PROGRAM EIR

Guernewood Shaded Fuel Break Vegetation Treatment Program



County of Sonoma
2550 Ventura Ave, Santa Rosa, CA 95403

Contact:

Robert Aguero
Senior Environmental Specialist
Robert.Aguero@sonoma-county.org
(707) 565-3718

— and —

Sonoma County Agricultural Preservation and Open Space District
747 Mendocino Ave #100, Santa Rosa, CA 95401

Contact:

Kim Batchelder
Vegetation Management Coordinator
Kim.Batchelder@sonoma-county.org
(707) 565-7355

Prepared by:

Environmental Resource Solutions, Inc.
1221 Gravenstein Hwy South, Sebastopol, CA 95472

Contact:

Harlan Tranmer Project Manager
HTranmer@eResourceSolutions.com
(707) 566-7510

August 2023

TABLE OF CONTENTS

ATTACHMENTS

Figures

Tables

LIST OF ABBREVIATIONS

Board	California Board of Forestry and Fire Protection
CAAQS	California ambient air quality standards
CAL	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CalVTP	California Vegetation Treatment Program
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CRHR	California Register of Historical Resources
dbh	diameter at breast height
ELZ	Equipment Limitation Zone
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
IPaC	Information for Planning and Consultation
LTS	Less Than Significant
LTSM	Less Than Significant with Mitigation
MMRP	mitigation monitoring and reporting program
NA	Not Applicable
NAHC	Native American Heritage Commission
NI	No Impact
NWIC	Northwest Information Center
PEIR	Program Environmental Impact Report
PS	Potentially Significant
PSA	Project-Specific Analysis
SENL	single event noise levels
SPR	standard project requirements
SR	state route
SRA	State Responsibility Area
SU	Significant and Unavoidable
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTV	utility task vehicle
VMT	vehicle miles traveled
WLPZ	Watercourse and Lake Protection Zones

1 INTRODUCTION

1.1 PROJECT OVERVIEW

The California Vegetation Treatment Program (CalVTP) directs implementation of vegetation treatments within the California Department of Forestry and Fire Protection's (CAL FIRE's) State Responsibility Area (SRA) to serve as one component of the state's range of actions to reduce wildfire risk, reduce fire suppression efforts and costs, and protect natural resources as well as other assets from wildfire. The Program Environmental Impact Report (PEIR) for the CalVTP evaluates the potential environmental impacts of implementing qualifying vegetation treatments to reduce the risk of wildfire throughout the State Responsibility Area (SRA) in California. The CalVTP is described in Chapter 2, "Program Description" of the PEIR. The PEIR has been prepared under the direction of CEQA lead agency, California Board of Forestry and Fire Protection (Board), 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. The document functions as a Program EIR in accordance with State CEQA Guidelines Section 15168 for streamlining of CEQA review of later activities consistent with the CalVTP. It was designed for use by many state, special district, regional, and local agencies to accelerate the approval of vegetation treatment projects found to be within the scope of the PEIR. If needed for CEQA compliance, the PEIR can be supplemented with minor technical information about a proposed project in the form of an addendum.

The California Board of Forestry and Fire Protection (Board) is supporting the preparation of Project-Specific Analysis (PSA) documents to create a library of example projects that help guide state and local agencies in preparing their own PSAs under the CalVTP PEIR, as well as to achieve California Environmental Quality Act (CEQA) compliance for the proposed project. The Board has provided approved PSAs that provide CEQA compliance for project approval, implementation, and serves as example PSAs for other agencies seeking to use the CalVTP PEIR to accelerate approval of their own vegetation treatment projects.

For the purposes of the CalVTP PEIR and this PSA, a project proponent is a public agency that provides funding for vegetation treatment or has land ownership, land management, or other regulatory responsibility in the treatable landscape and is seeking to fund, authorize, or implement vegetation treatments consistent with the CalVTP. This document is being prepared for the County of Sonoma to comply with CEQA for the implementation of vegetation treatments that require a discretionary action by a state or local agency. The CEQA lead agency is CALFIRE and the responsible agency using the CalVTP as a project proponent is the County of Sonoma. In this PSA, the project parcel owners and their project partners are referred to as the "implementing entity" reflecting their role as the lead implementer of treatments.

1.1.1 CEQA Responsible Agency and Proposed Project

The County of Sonoma is the project proponent and CEQA responsible agency, and the project parcel owners and their project partners are the implementing entity for vegetation treatments on up to 127 acres of land (proposed project) on north-south and east-west trending ridgetops between Guerneville and Villa Grande in western Sonoma County (Figure 1-1). The proposed treatment types (i.e., wildland-urban interface fuel reduction and fuel breaks) and the treatment activities (i.e., mechanical and manual treatments, prescribed burning (pile and broadcast), herbicide application and prescribed herbivory are consistent with those evaluated in the CalVTP PEIR. Ongoing maintenance of initial treatments (referred to as "retreatment/treatment maintenance" or "maintenance" in this PSA/Addendum) would involve the same vegetation treatment types and activities used in the original treatment.

The County proposes to fund the initial proposed treatments through the award of a grant from the Sonoma County Vegetation Management Grant Program. Additional grant funding from the County or other entities could be used to fund subsequent treatments or maintenance treatments. The actual treatment work will be conducted by grantees. Grantee responsibilities under the mitigation measures adopted will be enforced through grant agreements.

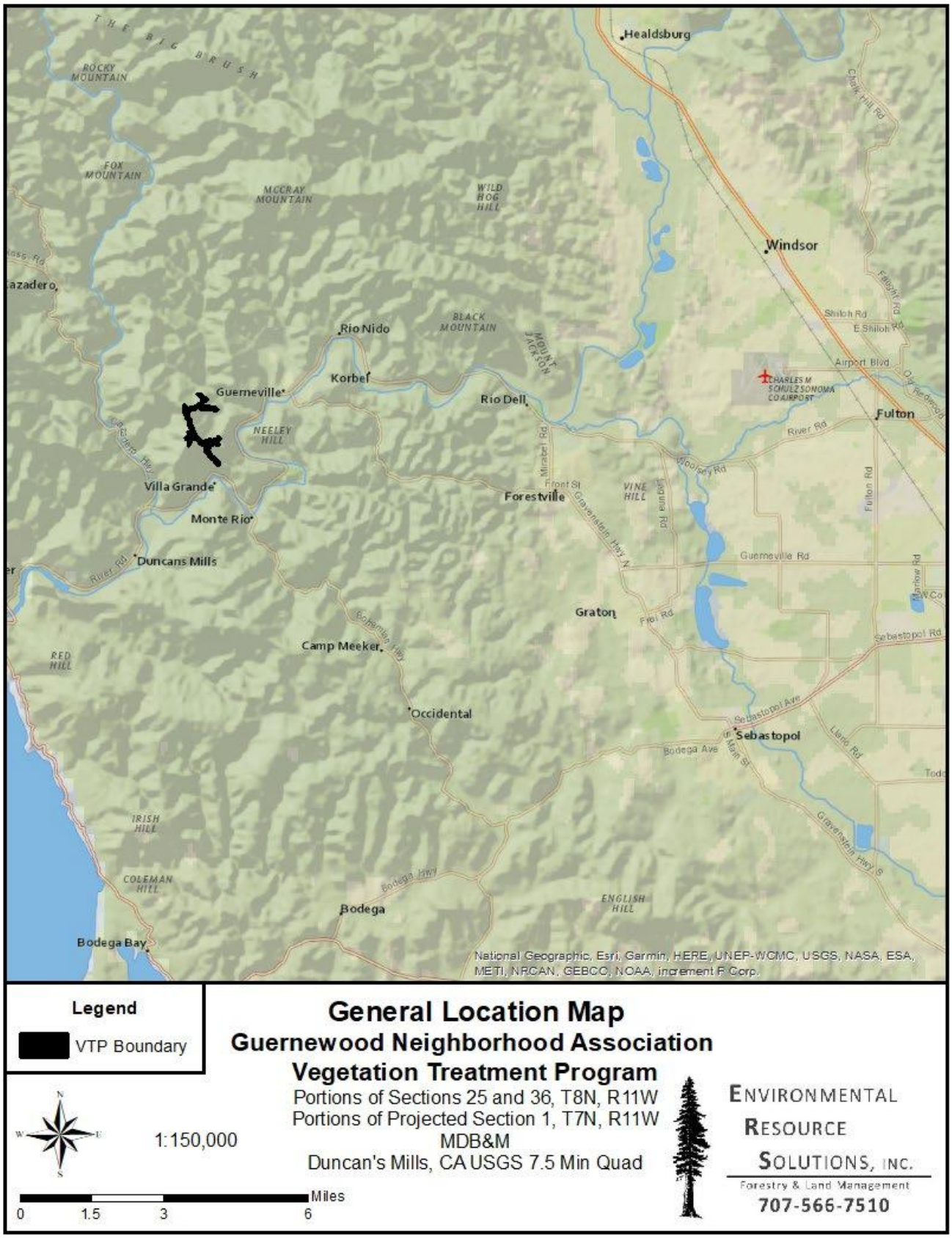
1.1.2 Purpose of This Document

This document serves as a PSA to evaluate whether the proposed treatments would be within the scope of the CalVTP PEIR. As stated above, the treatment types and treatment activities are consistent with the Calt. Among the other criteria for

determining whether a treatment project is within the scope of the CalVTP PEIR is whether it is within the CalVTP treatable landscape (i.e., the geographic extent of analysis covered in the PEIR). If a proposed vegetation treatment project is covered by the evaluation of environmental effects in the PEIR, it may be approved using a finding that the project is within the scope of the PEIR for its CEQA compliance, consistent with CEQA Guidelines Section 15168(c)(2).

This document serves as the PSA for review and analysis under CEQA for the proposed vegetation treatments within the CalVTP treatable landscape. The project-specific mitigation monitoring and reporting program (MMRP), which identifies the CalVTP standard project requirements (SPRs) and mitigation measures applicable to the proposed project, is presented in Attachment A. The SPRs identified in the MMRP have been incorporated into the proposed vegetation treatments as a standard part of treatment design and implementation.

Figure 1-1 General Location



2 TREATMENT DESCRIPTION

Proposed treatment types are wildland-urban interface fuel reduction and fuel breaks. Locations of treatment types are shown in Figure 2.2-1. Proposed treatment activities include mechanical and manual treatments, prescribed burning (piles and broadcast), herbicide application and prescribed herbivory. Locations of treatment activities are shown in Figure 2.3-1. Proposed vegetation treatments would occur within the proposed project area, referred to as the "management unit" in this PSA/Addendum. Tables 2.2-1 and 2.2-2 provide summaries of treatments.

2.1 MANAGEMENT UNIT DESCRIPTION

2.1.1 Guernewood Shaded Fuel Break (GSFB) Management Unit

The Guernewood Shaded Fuel Break (GSFB) management unit is a 127-acre forested unit situated in the hills between Guerneville and Villa Grande, the northern boundary located approximately 1.5 miles west of the town of Guerneville, California (Figure 2.1-1). The management unit includes elevations from approximately 200 feet up to 1,319 feet above mean sea level.

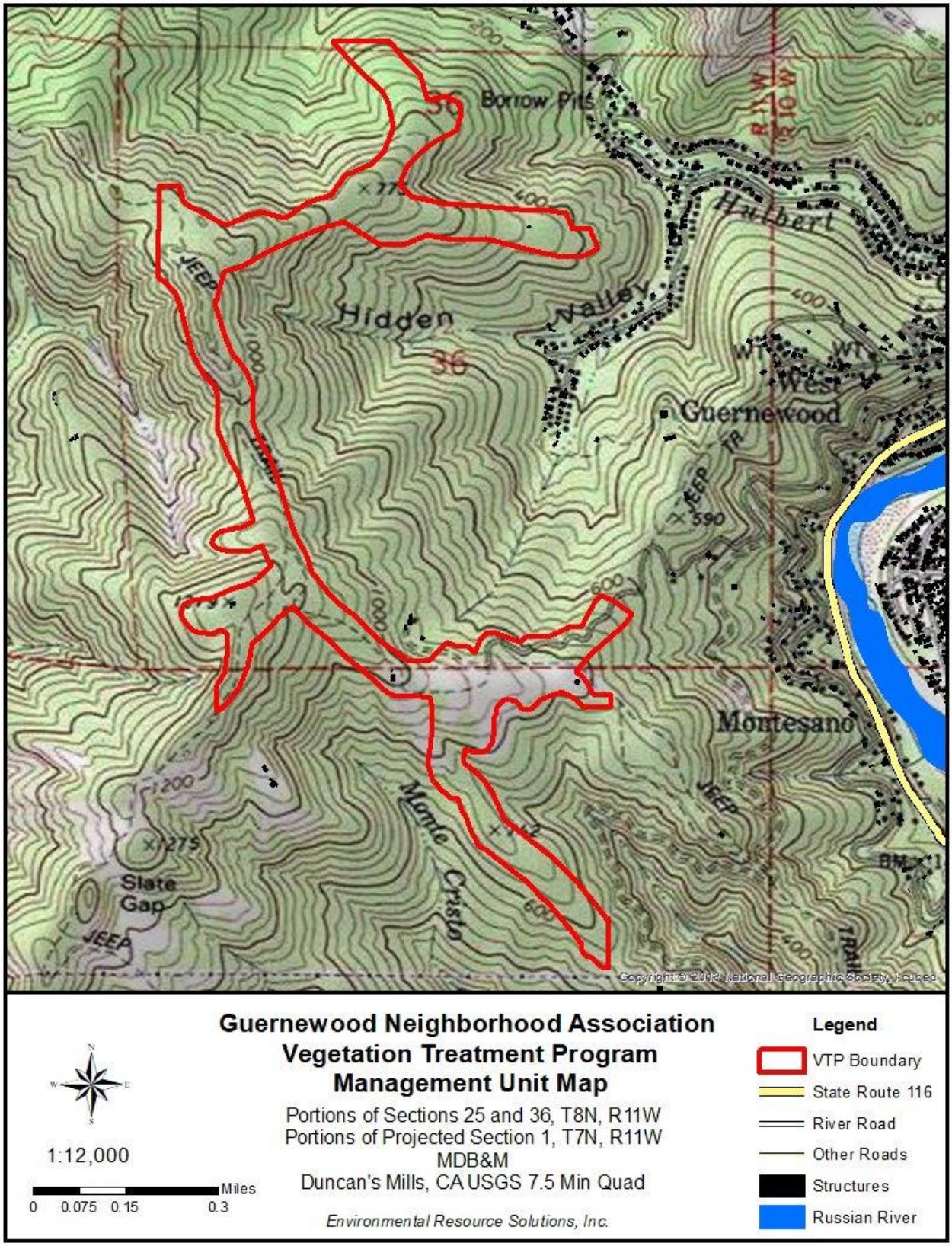
This unit has multiple landowners, cooperating to achieve fuel reduction goals. The landowners of this management unit include:

- Jerry and Mary Ann Boddum (Sonoma County APNs 072-021-016, 097-100-019, 097-100-020, 097-100-021, 097-100-022, 097-100-023)
- Robert Booth and Pamela Powell Trusts (Sonoma County APNs 072-021-042, 072-021-041)
- George Hoeg and Belle Addison (Sonoma County APN 072-021-013, 072-021-015, 072-021-020, 072-021-021)
- Joshua and Julie Veltman Trust (Sonoma County APN 072-021-017, 097-100-005)
- Trenkenschu Trust (Sonoma County APN 072-021-018)
- Edward Lyman Trust (Sonoma County APN 072-021-044)

The slopes drain west from tributaries into Austin Creek, and north and east into Hulbert Creek. The southern slopes drain into the Russian River via tributaries. This management unit is primarily forested and includes a mix of conifers and hardwoods, including redwood, Douglas-fir, oaks, bay, big-leaf maple and madrone.

Past forestry practices, lack of management, and fire suppression have resulted in forest stands that are overstocked with small diameter trees and that contain excess fuel load related to tanoak mortality caused by the Sudden Oak Death pathogen (*Phytophthora ramorum*), and understory species such as tanoak, California bay, Madrone, Coast live oak, California hazelnut, California coffeeberry, poison oak, coyote brush, toyon, common manzanita, evergreen huckleberry, and French broom that are contributing to ladder fuel.

Figure 2.1-1 Guernewood Shaded Fuel Break Management Unit



2.2 PROPOSED TREATMENTS

The proposed project involves two treatment types: wildland-urban interface fuel reduction and shaded fuel breaks. The vegetation treatment activities proposed to implement each of these treatment types are mechanical treatment, manual treatment, prescribed herbivory, prescribed burning (pile and broadcast), and targeted ground application of herbicides. The treatment types and treatment activities are described below.

2.2.1 Treatment Types

Proposed treatment types consist of shaded fuel breaks and wildland-urban interface fuel reduction. Each treatment type is described in more detail below and is consistent with the treatment types described in the CalVTP. Both treatment types would occur in the management unit. Refer to Figure 2.2-1 for the location of each treatment type within the management unit. Table 2.2-1 provides the acres of treatment type in the management unit and Table 2.2-2 provides a summary of treatments.

FUEL BREAKS

In strategic locations, fuel breaks create zones of vegetation removal, often in a linear layout, that reduce wildfire risk and support fire suppression by providing responders with a staging area or access to a remote landscape for fire control actions. They can also provide safe emergency egress during wildfires. Only shaded fuel breaks would be implemented in the treatment areas. In forested areas, the tree canopy would be thinned to reduce the potential for a crown fire to move through the canopy; however, trees greater than 12 inches dbh would remain. The shade of the retained canopy also helps reduce the potential for rapid regrowth of shrubs and sprouting hardwoods. The shaded fuel breaks also provide important control lines for prescribed fire activities.

Shaded fuel breaks would be established along strategic topographic locations (e.g., on ridge tops), adjacent to existing roads and skid trails as shown in Figure 2.2-1. Shaded fuel breaks will occur up to 100 feet on each side of existing ridgeline roads and skid trails, or the main ridgeline if the existing road travels off the ridge. To create shaded fuel breaks, equipment or crews will remove excessive small trees and shrubs to reduce woody ladder fuels, remove excessive standing dead wood, masticate, chip or lop woody debris to less than 18” height, prune trees a minimum of 10 feet above ground, control nonnative trees and shrubs (such as English ivy, French broom, and Himalaya berry), and retain the largest and best trees to provide shade which helps to reduce vegetation regrowth and overall understory occupancy. Trees observed with wildlife nests will be retained.

WILDLAND-URBAN INTERFACE FUEL REDUCTION

Wildland-urban interface fuel reduction treatments would be implemented outside of the 200-foot shaded fuel break treatment corridor (100 feet each side of ridgeline/seasonal road). Treatments would seek to reduce the fuel load and fire danger to adjacent communities in the Wildland Urban Interface (WUI). This project has communities located to the east along the Russian River and including Guernewood and Guerneville. The communities of Monte Cristo and Northwood are located to the southeast of the project area. Vegetation treatments will help to create a calming zone adjacent to the ridgetop fuel break aiding fire-fighting suppression activities during a wildfire.

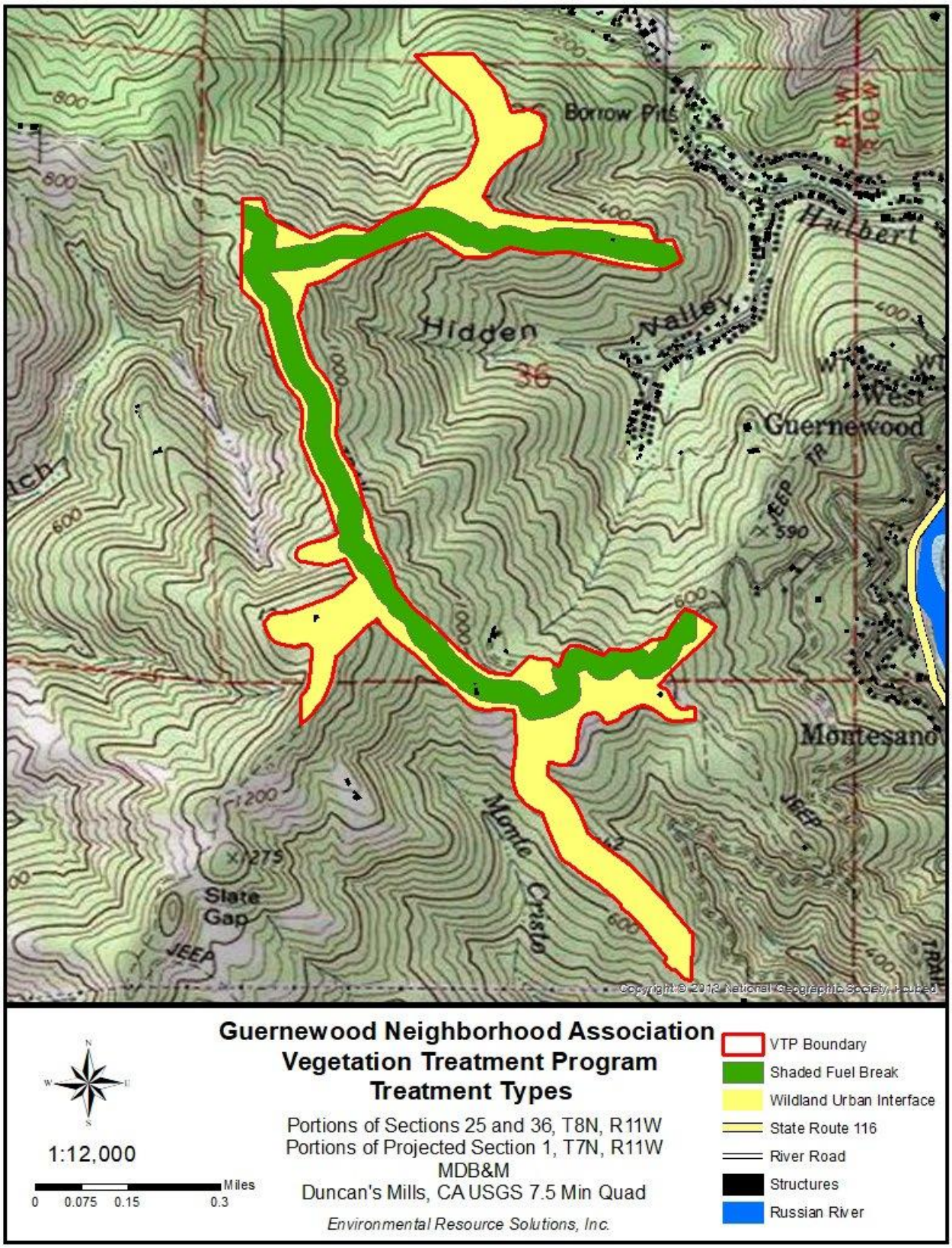
The wildland-urban interface fuel reduction treatment type is proposed in several areas throughout the management unit, as shown on Figure 2.2-1. Wildland-urban interface fuel reduction treatments would focus on thinning small diameter trees from overstocked forest units and/or post-fire resprouts to promote the continued growth of mature trees, a healthy forest structure, and improve wildlife habitat. This treatment type involves removing excessive small trees and shrubs to reduce woody ladder fuels, removing excessive standing dead wood, masticating, chipping or lopping woody debris to less than 18” height, pruning trees a minimum of 10 feet above ground, controlling nonnative trees and shrubs, and retaining the largest and best trees to provide shade which helps to reduce vegetation regrowth and overall understory occupancy. Trees observed with wildlife nests will be flagged and retained.

Table 2.2-1 Proposed Treatment Size by Management Unit

Management Unit	CalVTP Treatment Type	Maximum Treatment Area within CalVTP Treatable Landscape (acres)	Maximum Treatment Area Outside CalVTP Treatable Landscape (acres)	Maximum Total Treatment Area (acres)
Guernewood Neighborhood Association	Shaded Fuel break	50	0	50
	WUI	77	0	77
Total acres (approximately)				127

Source: Data provided by Environmental Resource Solutions, Inc. GIS data, 2023

Figure 2.2-1 Guernewood Shaded Fuel Break Management Unit Treatment Type



2.2.2 Treatment Activities

The proposed vegetation treatment activities are mechanical treatment, manual treatment, prescribed burning, prescribed herbivory, and targeted ground application of herbicides. Each of these treatment activities is described in more detail below and consistent with the treatment activities described in the CalVTP. All treatment activities could occur within the management unit. Table 2.2-1 provides the maximum acres of treatment for the management unit, Table 2.2-2 provides a summary of treatments, and Figure 2.3-1 shows where proposed treatment activities would likely occur in the management unit.

Treatment activities could occur during any time of year, although the nesting bird season would be avoided when feasible for mechanical and manual treatments, and wet periods will be avoided if applying herbicides. Although there is the potential for prescribed burning to occur during nighttime and weekend hours, all treatment activities using equipment would be limited to daytime hours on Monday through Friday.

MECHANICAL VEGETATION TREATMENT

Mechanical treatments would primarily include masticating target vegetation and chipping biomass from mechanical and manual treatment activities. Equipment would include masticators, chippers, and may include tractors/skidders. Up to four crews may operate at the same time throughout the management unit. Typically, treatments would require several days to several weeks to complete. Equipment would be operated on or within 100 feet of roads or skid trails in fuel break treatment areas and on existing roads or skid trails or on flat to moderate slopes (0-35% slope) in wildland-urban interface fuel reduction treatment areas.

Small-diameter trees, downed woody debris, and woody shrubs would be masticated to increase tree spacing and reduce fire fuel loads in targeted areas. The biomass would be disposed of via the process of mastication (which essentially mulches the vegetation). In some areas, prescribed burning may be used to dispose of chipped and masticated materials.

The vegetation treatment specifications are:

- Remove ladder fuels in order to prevent the spread of fire from ground to crown;
- Remove SOD infected/dead trees
- Leave the biggest and best trees that exhibit full crowns, dominant/co-dominant position, and representing best phenotypes;
- Remove 80% of hardwood (tanoak, bay, madrone) trees 10” diameter and smaller;
- Remove 90% of brush;
- Trimmings and slash material to be cut/lopped or chipped to a maximum height of 18” above the ground;
- Prune leave trees a minimum of 10 feet above the ground or ½ of the live crown ratio;
- Prefer to retain redwood trees greater than 4 inches;
- Prefer to retain Douglas-fir 6 inches and larger with 20 foot spacing where feasible;
- Prefer to retain trees over 12 inches;
- Retain trees with active wildlife nests.

MANUAL VEGETATION TREATMENT

To implement manual treatments, crews of approximately 8 to 20+ members would use hand tools and hand-operated power tools, including chainsaws, hand saws, brush cutters, and loppers, to cut, clear, and/or prune trees, herbaceous vegetation, woody shrubs, and small trees to increase space between trees. Typically, treatments would require several days to several months to complete, depending on the treatment size, steepness of terrain, and type and density of vegetation. Trees would be removed, thinned, and pruned and woody shrubs would be cut and cleared.

Cut vegetation would primarily be left on site by lopping and scattering on the landscape, but chipping may occur along roads, areas with favorable topography for a chipper, and within 100 feet of habitable structures. In some areas, removed vegetation would be piled for later pile burning or broadcast burning.

The vegetation treatment specifications are (same as for mechanical treatment):

- Remove ladder fuels in order to prevent the spread of fire from ground to crown;
- Remove SOD infected/dead trees
- Leave the biggest and best trees that exhibit full crowns, dominant/co-dominant position, and representing best phenotypes;
- Remove 80% of hardwood (tanoak, bay, madrone) trees 10" diameter and smaller;
- Remove 90% of brush;
- Trimmings and slash material to be cut/lopped or chipped to an maximum height of 18" above the ground;
- Prune leave trees a minimum of 10 feet above the ground or ½ of the live crown ratio;
- Prefer to retain redwood trees greater than 4 inches;
- Prefer to retain Douglas-fir 6 inches and larger with 20 foot spacing where feasible;
- Prefer to retain trees over 12 inches;
- Retain trees with active wildlife nests.

PRESCRIBED BURNING

Prescribed burning consists of two general types, pile burning and broadcast burning (underburning). Air curtain burning is also discussed in this section as an alternative to open burning.

- **Pile burning:** Biomass from manual and mechanical treatment would be piled primarily using hand crews, or by equipment (e.g., skid steer, tractor, bulldozer or excavator) and burned appropriately. If equipment is used to create piles, typically dozers are equipped with a brush rake to reduce soil displacement and create "clean" piles, or piles are created with an excavator or backhoe to create clean piles. Pile burning would occur in an understory or in areas with little to no live overstory, and during the winter period conditions to reduce fire hazard.

- **Broadcast burning:** Broadcast burning would be used to promote forest health and native flora and reduce biomass and fuel loading in woodland and forest vegetation. Pretreatment of vegetation using mechanical and manual activities or herbicide application would occur in areas proposed for prescribed burning. Prescribed burning would help control nonnative plant species and reduce fine fuels. These treatments would also promote a more natural, sustainable, and wildfire resilient native landscape.

  CalVTP participating landowners, in cooperation with CAL FIRE and local organizations (Prescribed Burn Association), would implement an understory burn to partially remove understory and groundcover vegetation during periods when weather and vegetation conditions allow the desired fire intensity to meet treatment objectives and do not create fire behavior jeopardizing control of the prescribed fire (e.g., relatively high humidity and high fuel moisture content). The goal is to conduct a low intensity burn that burns only targeted ground and litter fuels, creating a mosaic of existing habitat types. Prescribed burning may require the construction of new control lines or enhancement of existing control lines using manual or mechanical treatments, primarily through mastication or using hand tools but use of equipment may be required.

  Prescribed burning would require between 10 and 50 crew members, depending on size and site characteristics of the burn unit. Typically, each burn would last 1 day to 1 week. Equipment could include water trucks, fire engines, and chainsaws. All burning would occur in accordance with regulations regarding the use of prescribed burning. This would include the preparation and implementation of a burn plan that includes a smoke management plan and necessary permits.

- **Air curtain burning**: Biomass from manual and mechanical treatments would be burned inside an aboveground air curtain burner. Either a "BurnBoss" or "Fire Box S220" would be used for the project. The BurnBoss is self-contained and can be towed with a standard heavy-duty pickup truck. During treatments, it would be stationed on level areas previously disturbed or previously burned by prescribed burning that are devoid of vegetation, and in areas where minor ground leveling would not cause impacts to resources. The BurnBoss can burn approximately 10 to 20 cubic yards of forest wood slash per hour. The Fire Box S220 is also self-contained but is a stationary unit. It would also be placed in a previously disturbed area. The Fire Box S220 can burn approximately 18 to 25 cubic yards of forest wood slash per hour and biomass is placed into the unit using an excavator. Once the burning is complete, wood ash and biochar would be retained onsite and distributed as needed within the treatment area. A small US EPA Tier 4 diesel engine powers both types of air curtain burners.

PRESCRIBED HERBIVORY

Prescribed herbivory would be used to reduce fuel loads, typically in shrubland and forest understory. To implement prescribed herbivory, a grazing contractor will typically import livestock (goats, sheep, cattle, horses) to graze on herbaceous and shrub vegetation in favorable areas. Prescribed herbivory may require the installation of temporary fencing where natural barriers are not present, and temporary water facilities and other infrastructure (e.g., tanks, corrals, fences) as well as the deployment of guard animals and/or a shepherd.

Prescribed herbivory, or grazing, would involve transporting a herd of animals to the designated prescribed herbivory sites. Site preparation would involve installation of a portable fence for containment, often an electric fence that is battery charged by a generator or solar panels, and a water trough. The herder would determine the area to be grazed based on site conditions, and would typically range from 1 to 5 acres at one time for goats and sheep, or a much larger area (larger than 5 acres) for other types of livestock, such as cattle or horses.

HERBICIDE APPLICATION

Herbicides are optional and would be used sparingly to control vegetation that threatens the native biodiversity and/or increases wildfire hazards. Post-wildfire invasive plant and noxious weed infestations may be treated to prevent their establishment and growth. Consistent with the definitions applied in the CalVTP, invasive species are those plant species identified as invasive by the California Invasive Plant Council (Cal-IPC) or defined as noxious weeds under California law by the California Department of Food and Agriculture. The optional use of herbicides to treat invasive plant species and to control regrowth of native tree species (e.g., resprouting, multiple-stemmed tanoak, bay laurel, and madrone) may be implemented to promote native biodiversity.

The following herbicides, which are consistent with those considered for use in the CalVTP, may be applied:

- glyphosate and
- other species-specific herbicides analyzed and included in the CalVTP PEIR.

Only ground-level application would occur; no aerial spraying of herbicides would occur. The least impactful method would be used at any given site. Several herbicide application methods are available for use by on-the-ground personnel, including hack-and-squirt, paint-on stumps, and using backpack hand-applicators. For large treatment areas, herbicide treatments would typically use a one to eight-person crew, a 4x4 pickup truck, a passenger vehicle to transport crew, a utility task vehicle (UTV) with a sprayer/reservoir tank, and backpack sprayers. Treatment would involve removing invasive plant species (e.g., French broom) and noxious weeds through herbicide application. Herbicide application would comply with the U.S. Environmental Protection Agency label directions, as well as California Environmental Protection Agency and California Department of Pesticide Regulation label standards. All herbicide application would be performed by certified and licensed pesticide applicators in accordance with all local, state, and federal regulations.

BIOMASS DISPOSAL

The proposed vegetation treatments described above would be disposed of primarily by the following means:

- masticating (mulching) vegetative debris and placing it on the ground concurrently with vegetation removal (approximately 20 percent of biomass), and the biomass remaining after mastication would be no more than 6 inches deep;
- chipping (approximately 10 percent of biomass); materials within 50 feet on either side of a road, and chipped biomass would be broadcast spread over treatment areas and would not exceed 6 inches in depth;
- lopping and scattering within the treatment boundaries (approximately 50 percent) and would be left within 18 inches of the ground to promote decomposition;
- pile burning (approximately 10 percent of biomass), which may be used to dispose of slash, chipped, and masticated materials; or
- broadcast burning (approximately 10 percent of biomass); or
- burning with an air curtain burner.

Invasive plant and noxious weed biomass would be treated onsite to eliminate seeds and propagules or would be disposed of off-site at an appropriate waste collection facility to prevent seed dispersal, reestablishment, or spread of invasive plants and noxious weeds. Invasive plants and noxious weeds would not be chipped and spread or mulched onsite.

Sudden Oak Death infested material may be chipped and spread but shall not be transported from the project site to destinations outside the Board of Forestry identified Zone of Infestation. Project equipment (such as chainsaws, hand saws, brush cutters, loppers, gloves, boots, etc.) that are used on Sudden Oak Death infected material shall be disinfected with Lysol spray or a 10%

bleach solution prior to working on this project, prior to working in different project units, at the completion of the project, and/or prior to working on other lands not included in this CalVTP PSA.

Table 2.2-2 Proposed CalVTP Treatment Summaries

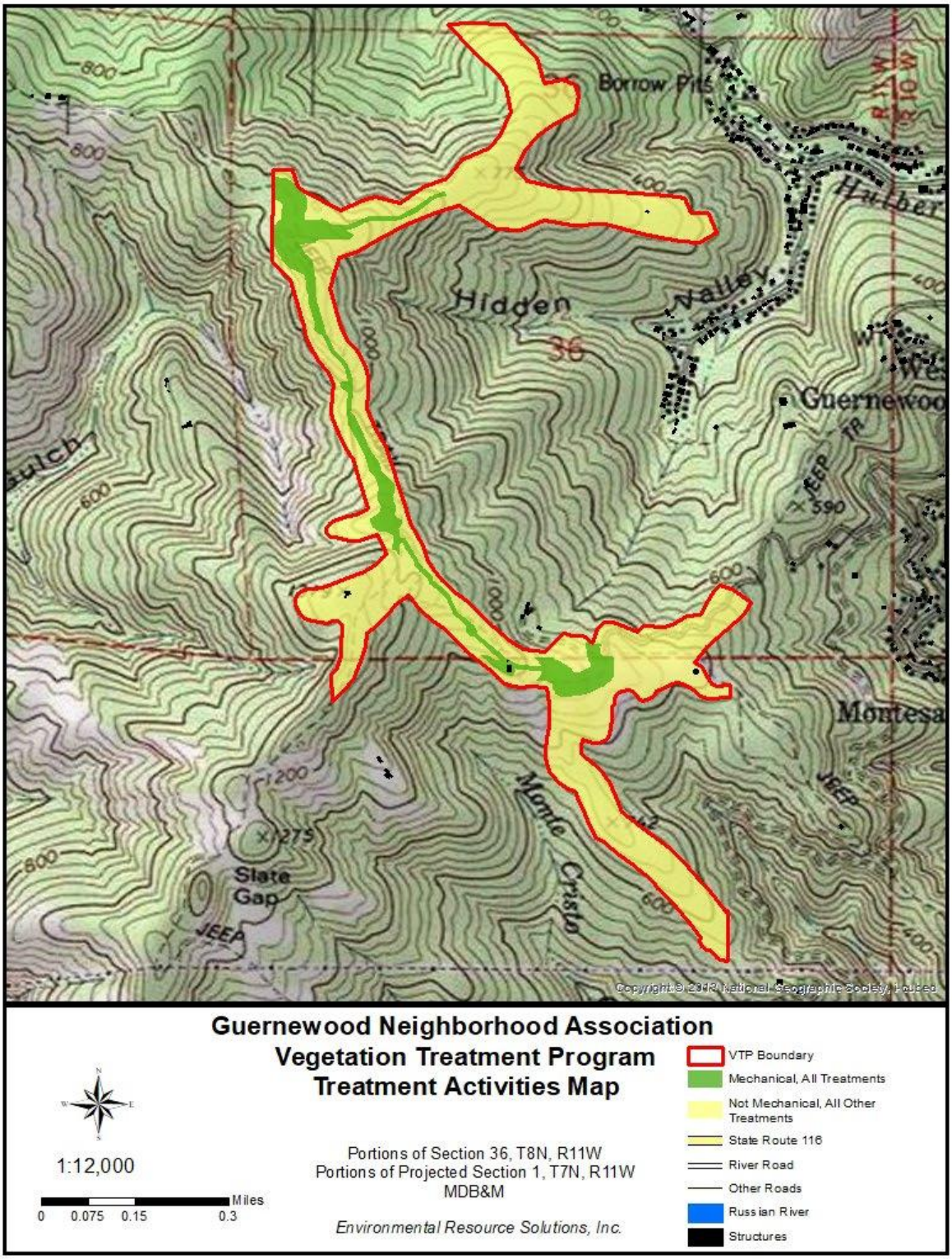
CalVTP Treatment Type	Treatment Description	CalVTP Treatment Activity	Equipment used for Treatments	Typical Duration of Treatments
Shaded Fuel break	200 foot wide corridor (100 foot each side of ridgeline and/or road/skid trails),	Mechanical	Masticators, chippers, tractor, excavator, skidder, dozer, skid steer	1 week to 3 months
		Manual	Chainsaws, loppers, hand saws	1 week to 6 months
		Pile Burning	Water tender, tractor, excavator	1 day to 1 week
		Broadcast Burning	Fire engines, water tender, tractor, skidder, excavator, dozer	1 day to 1 week
		Air Curtain Burner	BurnBoss or Fire Box S220	1day to 1 week
		Prescribed Herbivory	Pickup truck, trailer, fencing, water trough	1 week to 3 months
		Herbicide	Backpack sprayer, UTV with sprayer, pickup truck	Several days to 2 weeks
Wildland-Urban Interface Fuel Reduction	Fuel reduction treatments adjacent to and extending beyond fuel break corridor, remainder of VTP project area.	Mechanical	Masticators, chippers, tractor, excavator, skidder, dozer, skid steer	1 week to 3 months
		Manual	Chainsaws, loppers, hand saws	1 week to 6 months
		Pile Burning	Water tender, tractor, excavator	1 day to 1 week
		Broadcast Burning	Fire engines, water tender, tractor, skidder, excavator, dozer	1 day to 1 week
		Air Curtain Burner	BurnBoss or Fire Box S220	1 day to 1 week
		Prescribed Herbivory	Pickup truck, trailer, fencing, water trough	1 week to 3 months
		Herbicide	Backpack sprayer, UTV with sprayer, pickup truck	Several days to 2 weeks

2.3 RETREATMENT/TREATMENT MAINTENANCE

Retreatment for maintenance of desired vegetation conditions (referred to as “treatment maintenance” in the CalVTP PEIR and referred to as “retreatment/treatment maintenance” or “maintenance” in this PSA/Addendum) in the areas initially treated for the proposed project would be based on real-time monitoring of site conditions. In forested and woodland areas, retreatment is anticipated to occur every 2-5 years. In brush-dominated areas, retreatment is anticipated to occur every 5 years. In areas where initial treatment included removing multiple stems from stump-sprouting vegetation (e.g., madrone, California bay) retreatment would occur every 2-5 years. Retreatment/treatment maintenance methods would involve the same vegetation treatment activities used in the original treatment; and anticipate the use of more hand crews than mechanical equipment in comparison to initial treatments.

Retreatment/treatment maintenance would typically be implemented between approximately August and January, outside of the bird nesting season, if feasible. Periodic retreatment/treatment maintenance will occur as needed, determined by qualified staff who would monitor vegetation growth conditions in the management unit.

Figure 2.3-1 Guernewood Shaded Fuel Break Management Unit Treatment Activities



3 ENVIRONMENTAL CHECKLIST

VEGETATION TREATMENT PROJECT INFORMATION

1.	Project Title:	Guernewood Shaded Fuel Break VTP
2.	CalVTP I.D. Number:	2023-05
3.	Implementing Entity's Name and Address:	Jerry and Mary Ann Boddum 15 Hillcrest Ct Berkeley, CA 94705 Robert Booth and Pamela Powell Trust PO Box 1834 Guerneville, CA 95446 George Hoeg and Belle Addison PO Box 2068 Guerneville, CA 95446 Joshua and Julie Veltman Trust 3 Wildwood Ln Menlo Park, CA 94025 Trenkenschu Trust 5622 Rd. Long Grove, IL 60047 Michael Kasolas Trust 21540 Siri Rd. Guerneville, CA 95446
4.	Contact Person Information and Phone Number:	Harlan Tranmer, RPF# 2850 (707) 566-7510 HTranmer@eResourceSolutions.com
5.	Project Proponent Name and Address:	County of Sonoma 2550 Ventura Ave Santa Rosa, CA 95403
6.	Contact Person Information and Phone Number:	Robert Aguero, Senior Environmental Specialist (707) 565-3718 Robert.Aguero@sonoma-county.org
7.	Project Location:	Sonoma County, Portions of Sections 25, 36, T8N, R11W & Portions of Section 1, T7N, R11W MDB&M Westerly Coordinant 38 29' 47.463" N, 123 2' 12.015" W Central Coordinant 38 29' 23.969" N, 123 1' 57.89" W Easterly Coordinant 38 29' 19.537" N, 123 1' 20.648" W
8.	Total Area to Be Treated (acres):	Up to 127 acres

9. Description of Project:

a. Initial Treatment

Treatments would involve mechanical and manual treatments, prescribed burning (pile burn, broadcast burn and use of an air curtain burner), herbicide application, and prescribed herbivory. See Section 2.2, for additional details.

The County of Sonoma proposes to fund the initial treatment of up to 127 acres of treatable landscape (ref. PEIR Section 2.4, page 2-4) along 1.5 cumulative length miles of ridgeline that lie west and north of the community of Guernewood. The project includes 77 acres of Wildland Urban Interface Fuel Reduction treatments and 50 acres of Shaded Fuel Break (ref PEIR Section 2.5.1, page 2-7) using a combination of mechanical, manual, prescribed fire (pile burn, broadcast burn and use of an air curtain burner), prescribed herbivory, and herbicide use (ref PEIR Section 2.5.2, page 2-18). The VTP project area includes one management unit of 127 contiguous acres.

The long-term objectives for these vegetation treatments are to:

- Create a pre-treated fuel reduction zone as fire prevention for the surrounding communities and to assist fire-fighting efforts to contain wildfire spread;
- Reduce understory fuel loading by removing ladder fuels, dead trees, brush, and pruning;
- Reduce understory tree stocking, while leaving the largest conifer trees that exhibit full crowns, dominant/co-dominant position, and representing best phenotypes;
- Maintain and improve wildlife habitat and forest health;
- Reduce and control invasive non-native species;
- Increase forest resilience to natural disturbances and changes in climate.

The project will occur in multiple phases, with Phase 1 of treatment being approximately 50 acres of Shaded Fuel Break in the GSFB Management Unit being funded by the County of Sonoma's Vegetation Management Grant program. This Phase 1 area includes approximately 100 feet on each side of a ridgeline (total of 200 foot wide fuel break zone), mostly along an existing ridgeline seasonal road. Phase 1 mechanical treatment will occur on 17 acres of ground with suitable slopes for mechanical equipment operation. Phase 1 manual treatment will occur on 33 acres of ground where mechanical equipment cannot safely operate due to slope.

Phase 2 treatments are landowner dependent based on available funding and other management priorities. Phase 2 treatments may include additional initial treatments, either wildland-urban interface fuel reduction or fuel break treatments, or maintenance treatments on Phase 1 areas.

Initial Treatments:

Treatment Types

☒ Wildland-Urban Interface Fuel Reduction

☒ Fuel Break

☐ Ecological Restoration

Treatment Activities

☒ Prescribed Burning (Broadcast), _up to_127_acres

☒ Prescribed Burning (Pile Burning) , _up to_127_acres

☒ Mechanical Treatment, _up to_17_acres

☒ Manual Treatment, _up to_127_acres

☒ Prescribed Herbivory, _up to_127_acres

☒ Herbicide Application, _up to_127_acres

Fuel Type

☐ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

b. Retreatment/Treatment Maintenance

Treatments would involve mechanical and manual treatments, prescribed burning (pile burn, broadcast burn and use of an air curtain burner), prescribed herbivory, and herbicide application. See Section 2.3, for additional details.

Maintenance Treatment:

Treatment Types

☒ Wildland-Urban Interface Fuel Reduction

☒ Fuel Break

☐ Ecological Restoration

Treatment Activities

☒ Prescribed Burning (Broadcast), _up to_127_acres

☒ Prescribed Burning (Pile Burning) , _up to_127_acres

☒ Mechanical Treatment, _up to_17_acres

☒ Manual Treatment, _up to_127_acres

☒ Prescribed Herbivory, _up to_127_acres

☒ Herbicide Application, _up to_127_acres

Fuel Type

☐ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

10. Regional Setting and Surrounding Land Uses:

The project area is located in western Sonoma County, 1.5 miles west of Guerneville, CA, on the northern side of the Russian River, and north of Monte Cristo. The surrounding land uses are dominated by forested landscapes, vineyards, rural subdivisions, few scattered rural residences, and a County operated waste transfer station. The project area surroundings include the communities of Guerneville, Guernewood, Monte Cristo, Northwood, and Villa Grande. Forest lands are mostly unoccupied, however there are several rural residential residences in or near the project area and include landowners: Boddum, Powell/Booth Trust, Hoeg/Addison, Veltman/Veltman Trust and Trenkenschu Trust.

11. Other Public Agencies Whose Approval Is Required: (e.g., permits)

- Pesticide application permit would be obtained from the Sonoma County Agricultural Commissioner.
- Smoke Management Plans would be prepared for the Northern Sonoma County Air Pollution Control District, as required.
- Burn permits would be obtained from CAL FIRE and the Northern Sonoma County Air Pollution Control District, as required.

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

12. Native American Consultation. *The Board of Forestry and Fire Protection completed consultation pursuant to Public Resources Code Section 21080.3.1 during preparation of the PEIR; however, CalVTP SPR CUL-2 includes for a requirement for further tribal coordination during PSA preparation.*

    Pursuant to CalVTP SPR CUL-2, Native American tribal contacts in Sonoma County were contacted on July 26, 2022 using the updated contact list from July 2022 and included:

    - Native American Heritage Commission, notification and sacred lands file search;
    - Patricia Hermosillo, Chairperson, Cloverdale Rancheria of Pomo Indians;
    - Chris Wright, Chairperson and Tom Keegan DEP contact, Dry Creek Rancheria Band of Pomo Indians;
    - Greg Sarris, Chairperson, Federated Indians of Graton Rancheria;
    - Gene Buvelot, Council Member, Federated Indians of Graton Rancheria;
    - Buffy McQuillen, Tribal Historic Preservation Officer, Federated Indians of Graton Rancheria;
    - Marjorie Mejia, Chairperson, Lytton Rancheria;
    - Lisa Miller, Tribal Administrator, Lytton Rancheria;
    - Dianne Albright, Environmental Planner, Lytton Rancheria;
    - Jose Simon III, Chairperson, Middletown Rancheria of Pomo Indians;
    - James Rivera, Tribal Historic Preservation Officer, Middletown Rancheria of Pomo Indians;
    - Michael Rivera Jr, Tribal Cultural Advisor, Middletown Rancheria of Pomo Indians;
    - Mike Shaver, EPA Director, Middletown Rancheria of Pomo Indians;
    - Scott Gabaldon, Chairperson, Mishewal-Wappo Tribe of Alexander Valley;
    - Reno Franklin, Chairman, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
    - Anthony Macias, Tribal Historic Preservation Officer, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
    - Ya-Ka-Ama.

    Responses were received from:

    - Federated Indians of Graton Rancheria, August 2, 2022. Project area is not within Tribe's area of interest and no comments at this time.
    - Kashia Band of Pomo Indians of Stewarts Point Rancheria, August 2, 2022. Project area is within Aboriginal Territory, request site visit.

    The response to a NAHC sacred lands file request, received on August 28, 2022, indicated to contact seven additional Native American contacts that were not included in the NAHC July 2022 contact list for Sonoma County. Letters were sent on January 16, 2023 to the Native American tribal contacts in Sonoma County and the following seven Native American contacts suggested by the NAHC sacred lands file response:

    - Dino Franklin, Chairperson, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
    - Loren Smith, Tribal Historic Preservation Officer, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
    - Benjakem Cromwell, Chairperson, Robinson Rancheria of Pomo Indians;
    - Leona Williams, Chairperson, Pinoleville Pomo Nation;
    - Donald Duncan, Chairperson, Guidiville Indian Rancheria;
    - Erica Carson, Tribal Historic Preservation Officer, Pinoleville Pomo Nation;
    - Sally Peterson, Tribal Historic Preservation Officer, Middletown Rancheria of Pomo Indians;

    Responses were received from:

    - Federated Indians of Graton Rancheria, January 20, 2023, project area not within Tribe's area of interest and no comments at this time.
    - Kashia Band of Pomo Indians of Stewarts Point Rancheria, January 19, 2023, project area is within Aboriginal Territory. Request site visit and any and all pertinent information currently in possession. Additionally reserve the right to comment at a later time.

    No other responses were received as of the date of submission of this PSA.

Information obtained from Native American tribes will be incorporated into a survey report as required by SPR CUL-4.

DETERMINATION

On the basis of this PSA and Addendum to the PEIR 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 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.

Robert C Aguero Digitally signed by Robert C Aguero
DN: cn=Robert C Aguero, o, ou=Permit Sonoma, email=Robert.Aguero@sonoma-county.org, c=US
Date: 2024.10.31 15:47:18 -07'00' 10/31/2024

Signature Date

Robert C Aguero 10/31/2024

Printed Name Title

Permit Sonoma

Agency

4 PROJECT-SPECIFIC ANALYSIS/ADDENDUM

4.1 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	AD-3 AD-4 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 Wildland Urban Interface Fuel Reduction, Ecological Restoration, or Shaded Fuel Break Treatment Types	LTS	Impact AES-2, pp. 3.2-20 – 3.2-25	Yes	AES-2	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 Nonshaded Fuel Break Treatment Type	SU	Impact AES-3, pp. 3.2-25 – 3.2-27	No	None	None	--	--	--

[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 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
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

IMPACT AES-1

Initial and maintenance treatments would include wildland urban interface fuel reduction and shaded fuel break treatment types. Treatment activities include prescribed burning, mechanical treatment, manual treatment, prescribed herbivory, and targeted ground application of herbicides. The potential for these treatment activities to result in short-term degradation of the visual character of a treatment area was examined in the PEIR. Short term visual impacts will be related to staging of equipment, tree and vegetation removal, and visual impacts of smoke from prescribed burning. Visual impacts from project equipment and smoke from prescribed burning will only last for the duration of the treatment activities. The tree canopy structure is not expected to be significantly altered, as fuel reduction treatments will primarily remove understory vegetation and some co-dominant trees, while simultaneously retaining the redwood/Douglas-fir canopy across the project. Aesthetic conditions, or the ability to see the forest from the ridgeline road, are anticipated to improve throughout the shaded fuel break.

The designated state scenic highway nearest to the project is SR 116 (Caltrans 2022). SR 116 is located approximately 1,000 feet south of the southern project boundary, and approximately 1,800 feet east of the project boundary at its closest point to the Guernewood Shaded Fuel Break Management Unit. Visual impacts would be obscured by distance, intervening topography and vegetation. Although the project is not visible from SR 116, smoke from prescribed burning could be visible from public viewpoints and the state scenic highway.

The potential for the project to result in short-term substantial degradation of the visual character of the project area is within the scope of the PEIR because the proposed treatment activities are consistent with those analyzed in the PEIR. SPRs applicable to the proposed treatments are AD-3, AD-4, AES-2, AQ-2, and AQ-3. The implementation of these SPRs will result in a less than significant impact and no mitigation measures are required. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR. SPRs AES-1 and AES-3 are not applicable to the proposed treatments because visual access of treatment areas is limited, and treatment areas that may be seen from public viewpoints would maintain an intact canopy with patches of native trees and shrubs. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT AES-2

Initial and maintenance treatments would include wildland urban interface fuel reduction and shaded fuel break treatment types. Treatment activities include prescribed burning, mechanical treatment, manual treatment, prescribed herbivory, and targeted ground application of herbicides. The potential for these treatment types and activities to result in long-term degradation of the visual character of an area was examined in the PEIR. Public viewpoints could include public recreation trails, adjacent residences, and SR 116. The project area is not visible from SR 116 and no vegetation will be removed immediately adjacent to the highway. There are no public trails in the project area. Project treatments will be planned for aesthetic and visual impacts when located adjacent to existing residences on privately owned land in the project area. The landowners are cooperating to implement this project and understand forest thinning will occur near their residences.

The potential for the project to result in long-term substantial degradation of the visual character of the project area is within the scope of the PEIR because the proposed treatment activities are consistent with those analyzed in the PEIR. SPR applicable to the proposed treatments is AES-2. The implementation of this SPR will result in a less than significant impact and no mitigation measures are required. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR. SPRs AES-1 and AES-3 are not applicable to the proposed treatments because visual access of treatments is limited, and treatment areas that may be seen from public viewpoints would maintain an intact canopy with patches of native trees and shrubs. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT AES-3

This impact does not apply to the proposed project because non-shaded fuel breaks are not proposed.

NEW AESTHETIC AND VISUAL RESOURCE IMPACTS

The proposed treatments are entirely within the CalVTP treatable landscape and consistent with the treatment types and treatment activities covered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.2.1, "Environmental Setting," and Section 3.2.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to aesthetics and visual resources would occur that is not covered in the PEIR.

4.2 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.

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 would include wildland urban interface fuel reduction and shaded fuel break treatment types. Treatment activities include prescribed burning, mechanical treatment, manual treatment, prescribed herbivory, and targeted ground application of herbicides. The potential for these treatment types and treatment activities to result in the loss of forestland or conversion of forestland to non-forest use was examined in the PEIR.

The treatment area includes forested lands and to a limited extent shrub lands. Non-commercial tree and brush removal would occur under the project. The project area is comprised primarily of redwood and Douglas-fir forestlands with a bay and tanoak understory. The dominant conifer components of the stand will be retained and enhanced by removing small hardwoods, overstocked conifer species, and brush in the understory. All treatments that occur in the landscape will be designed and overseen by a Registered Professional Forester. Consistent with the PEIR, the vegetation remaining after treatments would meet the definition of forestland as defined in Public Resources Code Section 12220(g), which defines "forest land" as land that can support 10-percent native tree cover of any species under natural conditions, and no substantial loss of forestland or conversion to non-forest uses would occur. A shaded fuel break will typically retain a minimum of 30% canopy cover. Therefore, the potential for the project to result in the loss or conversion of forestland is within the scope of the PEIR. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

The project will not impact any farmland.

NEW AGRICULTURE AND FORESTRY RESOURCE IMPACTS

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.3.1, "Environmental Setting," and Section 3.3.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to agriculture and forestry resources would occur that is not covered in the PEIR.

4.3 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	SU	Impact AQ-1, pp. 3.4-26 – 3.4-32; Appendix AQ-1	Yes	AD-4 AQ-1 AQ-2 AQ-3 AQ-4 AQ-6	AQ-1	SU	No	Yes
Impact AQ-2: Expose People to Diesel Particulate Matter Emissions and Related Health Risk	LTS	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	Impact AQ-3, pp. 3.4-34 – 3.4-35	No	NA	NA	NA	NA	NA
Impact AQ-4: Expose People to Toxic Air Contaminants Emitted by Prescribed Burns and Related Health Risk	SU	Impact AQ-4, pp. 3.4-35 – 3.4-37	Yes	AD-4 AQ-2 AQ-3 AQ-6	NA	SU	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	SU	Impact AQ-6; pp. 3.4-38	Yes	AD-4 AQ-2 AQ-3 AQ-6	NA	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.

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

The project is located in Sonoma County and is within the jurisdiction of the Northern Sonoma County Air Pollution Control District. Pursuant to SPR AQ-2, a Smoke Management Plan will be prepared and submitted to the air district before implementing a prescribed burning treatment, if required. Pursuant to SPR AQ-3, a Burn Plan will be prepared for broadcast burning, will include fire behavior modeling, and will be implemented by a state-certified burn boss, as required. An Incident Action Plan, which identifies burn dates, burn hours, weather limitations, specific burn prescription, the communication plan, the medical plan, the traffic plan, and other special instructions will also be prepared for all proposed prescribed burning treatments. The Incident Action Plans will also identify the contact personnel to coordinate on-site briefings, posting notifications, and weather monitoring during burning.

IMPACT AQ-1

Use of vehicles, mechanical equipment, and prescribed burning during initial and maintenance treatments would result in emissions of criteria pollutants that could exceed California ambient air quality standard (CAAQS) or national ambient air quality standard (NAAQS) thresholds. The potential for emissions of criteria pollutants to exceed CAAQS or NAAQS thresholds was examined in the PEIR. Emissions of criteria air pollutants related to the proposed treatments are within the scope of the PEIR because the associated equipment and duration of use are consistent with those analyzed in the PEIR. The SPRs applicable to this treatment project are AD-4, AQ-1 through AQ-4, and AQ-6. SPR AQ-5 would not apply because no naturally occurring asbestos is mapped within the treatment area.

Emission reduction techniques included in Mitigation Measure AQ-1 would be infeasible for the project proponent to implement. Project implementation is anticipated to be contracted with other companies to implement the vegetation treatments. It is cost prohibitive to procure or require equipment meeting the latest efficiency standards, including meeting the U.S. Environmental Protection Agency's (EPA) Tier 4 emission standards, using renewable diesel fuel, using electric- and gasoline-powered equipment, and using equipment with Best Available Control Technology. The project proponent will encourage, but not require, use of these emission reduction techniques by contractors. Work crews are anticipated to utilize carpooling, however carpooling may not be feasible to implement during the lingering COVID-19 pandemic and various sub-variants. For these reasons, and as explained in the PEIR, this impact would remain significant and unavoidable.

When feasible, the use of an air curtain burner to process biomass is proposed pursuant to Mitigation Measure GHG-2. Evaluation of criteria air pollutant emissions from these biomass processing technologies conducted by Ascent (2022) indicates that smoke and criteria air pollutant emissions can be substantially reduced, compared to open pile burning. Use of an air curtain burner would substantially reduce reactive organic gas (ROG) and particulate matter (PM) emissions by approximately 96 percent when compared to pile burning. For nitrous oxide (NOX), air curtain burners are estimated to reduce NOX emissions by at least 73 percent (Ascent 2022). Based on available information about emissions from specialized biomass processing technologies, this technology offers the opportunity to substantially reduce local exposure to PM from smoke, a potentially beneficial difference compared to pile burning. Despite the substantial reduction in criteria air pollutant emissions afforded by use of air curtain burners, Impact AQ-1 must still be recognized as potentially significant and unavoidable because of uncertainties in the extent of their use.

IMPACT AQ-2

Use of vehicles and mechanical equipment during initial and maintenance treatments could expose people to diesel particulate matter emissions. The potential to expose people to diesel particulate matter emissions was examined in the PEIR. Diesel particulate matter emissions from the proposed treatments are within the scope of the PEIR because the exposure potential is the same as analyzed in the PEIR, and the types and amount of equipment that would be used, as well as the duration of use, during proposed treatments are consistent with those analyzed in the PEIR.

SPR HAZ-1, SPR NOI-4, and NOI-5 are applicable. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT AQ-3

This impact does not apply to the treatment project because no naturally occurring asbestos, asbestos mines or prospects, or ultramafic rock is mapped in the treatment area (CGS Map Sheet 59, 2011).

IMPACT AQ-4

Prescribed burning during initial and maintenance treatments could expose people to toxic air contaminants, which was examined in the PEIR. The use of air curtain burners is also proposed, pursuant to Mitigation Measure GHG-2, to reduce smoke emissions and associated TACs in comparison to pile burning. TACs resulting from the combustion of biomass are generally organic in nature and are, therefore, a subset of ROG emissions. Based on evaluation conducted by Ascent (2022), use of air curtain burning would reduce ROG emissions by 96 percent when compared to pile burning of equivalent areas. Therefore, the exposure of persons to TACs and related health risks would likely be substantially lower with the use of air curtain burning as compared with pile burning. The duration and parameters of the prescribed burns are within the scope of the activities addressed in the PEIR, therefore, the potential for exposure to toxic air contaminants is also within the scope the PEIR. SPRs applicable to these treatment activities are AD-4, AQ-2, AQ-3, and AQ-6. All feasible measures to prevent and minimize smoke emissions, as well as exposure to smoke, are included in SPRs. No additional mitigation measures are feasible, and this impact would remain significant and unavoidable, as explained in the PEIR.

IMPACT AQ-5

Use of vehicles and mechanical equipment during initial and maintenance treatments could expose people to objectionable odors from diesel exhaust. The potential to expose people to objectionable odors from diesel exhaust was examined in the PEIR. This impact is within the scope of the PEIR because the exposure potential and the proposed activities, as well as the associated equipment and duration of use, are consistent with those analyzed in the PEIR.

SPR HAZ-1, SPR NOI-4, and NOI-5 are applicable. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT AQ-6

Prescribed burning during initial and maintenance treatments could expose people to objectionable odors. The potential to expose people to objectionable odors from prescribed burning was examined in the PEIR. The duration and parameters of the prescribed burn and the exposure potential are consistent with the activities addressed in the PEIR. The use of air curtain burners is proposed pursuant to Mitigation Measure GHG-2 and would reduce smoke emissions and associated odors in comparison to pile burning. When compared to pile burning, air curtain burning would substantially reduce smoke through filtering. Therefore, the resultant potential for exposure to objectionable odors from smoke is also within the scope of impacts covered in the PEIR.

SPRs that are applicable to this treatment project are AD-4, AQ-2, AQ-3, and AQ-6. All feasible measures to prevent and minimize smoke odors, as well as exposure to smoke odors, are included in SPRs. No additional mitigation measures are feasible, and this impact would remain significant and unavoidable, as explained in the PEIR.

NEW AIR QUALITY IMPACTS

The proposed treatments are within the CalVTP treatable landscape and consistent with the treatment types and activities covered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable regulatory and environmental conditions presented in the CalVTP PEIR (refer to Section 3.4.1, “Regulatory Setting,” and Section 3.4.2, “Environmental Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to air quality would occur that is not covered in the PEIR.

4.4 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 CUL-2 CUL-3 CUL-4 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 CUL-2 CUL-3 CUL-4 CUL-5 CUL-6 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.

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

Consistent with SPR CUL-1, a complete records search of the treatment area was performed by the Northwest Information Center (NWIC) on August 23, 2022 (NWIC File No. 22-0151). The records search included the project site and a 1/16th-mile buffer beyond the project boundaries. The results of the records search indicate that no Native American resources have been recorded within the VTP boundary. Given topographical and environmental factors, there was a moderate potential for unrecorded Native American resources. Investigation of historic maps and documents indicate a high potential for unrecorded historic-period resources. On February 16, 2023 the Project Archaeologist searched NWIC for records within 0.50-mile area around the project boundary and 23 cultural resources were known within the 0.5-mile search area. They are discussed in the Archaeological Survey Report.

Consistent with SPR CUL-2, an updated Native American contact list was obtained from the Native American Heritage Commission (NAHC). The NAHC updated list was dated July 1, 2022. On July 26, 2022, letters and emails were mailed to the Sonoma County representatives indicated by NAHC. One response was received on August 2, 2022 from the Kashia Band of Pomo Indians of Stewarts Point. The response indicated that the proposed project is in their aboriginal territory and they requested a site visit. Another response was received on August 2, 2022 from the Federated Indians of Graton Rancheria. This response indicated that the project area was not in the Tribe's area of interest and that they had no comments on the project at this time.

On July 26, 2022, a request was sent to NAHC's for a sacred lands file check. A response was received on August 28, 2022, indicating that the sacred lands file search results were negative. The sacred lands file recommended Native American consultation with tribes, some of which were not included in the July 26, 2022 mailing. On January 16, 2023, Native American contact letters were sent to the additional Native American tribes as recommended by the sacred lands file search, and again to the Sonoma County representatives indicated by the NAHC mailing list. One response was received on January 19, 2023 from the Kashia Band of Pomo Indians of Stewarts Point. The response indicated that the proposed project is in their aboriginal territory and they requested a site visit and information on the project. They also reserved the right to comment at a later time. Another response was received on January 20, 2023 from the Federated Indians of Graton Rancheria. This response indicated that the project area was not in the Tribe's area of interest and that they had no comments on the project at this time.

IMPACT CUL-1

Proposed treatment activities could damage historical resources. Historic features have not been evaluated for eligibility for listing in the California Register of Historical Resources (CRHR), therefore, it is not known whether these sites are considered resources under CEQA. The recommendations of the qualified archaeologist do not include buffers but state that large machinery is limited to existing roads and trails when within the areas where resources were found. The potential for treatment activities to result in disturbance, damage, or destruction of built-environment structures that have not yet been evaluated for historical significance was examined in the PEIR. This impact is within the scope of the PEIR, because treatment activities and the intensity of ground disturbance of the treatments are consistent with those analyzed in the PEIR.

SPRs applicable to this impact are CUL-1, CUL-7, and CUL-8. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT CUL-2

Vegetation treatment would include mechanical treatments using heavy equipment that could disturb the surface of the ground during treatment as vegetation is removed; this may result in damage to known or previously unknown archaeological resources. The potential for these treatment activities to result in inadvertent discovery of unique archaeological resources or subsurface historical resources was examined in the CalVTP PEIR. Treatment activities and extent of ground disturbance of the treatment project are consistent with those analyzed in the CalVTP PEIR.

SPRs applicable to this treatment include CUL-1 through CUL-5 and CUL-8.

A records search, Native American Tribal notifications, pre-field research and archaeology survey will be conducted prior to treatment pursuant to SPR CUL-1 through CUL-4. All identified resources will be avoided according to the provisions of SPR CUL-5. SPRs and Mitigation Measure CUL-2 would require identification and protection of resources, and it is reasonably expected that implementation of these measures would avoid a substantial adverse change in the significance of any unique archaeological resources or subsurface historical resources. Therefore, this impact would be less than significant.

Mitigation Measure CUL-2 would apply to this treatment which indicates that if any prehistoric or historic-era subsurface archaeological features or deposits are discovered during ground-disturbing activities that all ground disturbing activities within 100 feet of the resource will be halted and a qualified archaeologist consulted. This determination is consistent with the CalVTP PEIR and would not constitute a substantially more severe significant impact than what was covered in the CalVTP PEIR.

IMPACT CUL-3

Native American contacts in Sonoma County were contacted on July 26, 2022, and included

- Native American Heritage Commission, notification and sacred lands file search;
- Patricia Hermosillo, Chairperson, Cloverdale Rancheria of Pomo Indians;
- Chris Wright, Chairperson and Tom Keegan DEP contact, Dry Creek Rancheria Band of Pomo Indians;

- Greg Sarris, Chairperson, Federated Indians of Graton Rancheria;
- Gene Buvelot, Council Member, Federated Indians of Graton Rancheria;
- Buffy McQuillen, Tribal Historic Preservation Officer, Federated Indians of Graton Rancheria;
- Marjorie Mejia, Chairperson, Lytton Rancheria;
- Lisa Miller, Tribal Administrator, Lytton Rancheria;
- Dianne Albright, Environmental Planner, Lytton Rancheria;
- Jose Simon III, Chairperson, Middletown Rancheria of Pomo Indians;
- James Rivera, Tribal Historic Preservation Officer, Middletown Rancheria of Pomo Indians;
- Michael Rivera Jr, Tribal Cultural Advisor, Middletown Rancheria of Pomo Indians;
- Mike Shaver, EPA Director, Middletown Rancheria of Pomo Indians;
- Scott Gabaldon, Chairperson, Mishewal-Wappo Tribe of Alexander Valley;
- Reno Franklin, Chairman, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
- Anthony Macias, Tribal Historic Preservation Officer, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
- Ya-Ka-Ama.

Responses were received from:

- Kashia Band of Pomo Indians of Stewarts Point Rancheria, August 2, 2022. Project area is within aboriginal territory and a site visit was requested by the Tribe.
- Federated Indians of Graton Rancheria, August 2, 2022. Project area is not in Tribe's area of interest, no comments on the project at this time.

The response to the NAHC sacred lands file request, received on August 28, 2022, indicated to contact seven additional Native American contacts that were not included on the NAHC July 2022 contact list for Sonoma County. Letters were sent on January 16, 2023 to the following Native American contacts as suggested by the NAHC sacred lands file response:

- Dino Franklin, Chairperson, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
- Loren Smith, Tribal Historic Preservation Officer, Kashia Band of Pomo Indians of Stewarts Point Rancheria;
- Benjakem Cromwell, Chairperson, Robinson Rancheria of Pomo Indians;
- Leona Williams, Chairperson, Pinoleville Pomo Nation;
- Donald Duncan, Chairperson, Guidiville Indian Rancheria;
- Erica Carson, Tribal Historic Preservation Officer, Pinoleville Pomo Nation;
- Sally Peterson, Tribal Historic Preservation Officer, Middletown Rancheria of Pomo Indians;

Responses were received from:

- Kashia Band of Pomo Indians of Stewarts Point Rancheria, January 19, 2023. Project area is within aboriginal territory and a site visit was requested by the Tribe. Tribe also requested information about the project and reserved the right to comment at a later time.
- Federated Indians of Graton Rancheria, January 20, 2023. Project area is not in Tribe's area of interest, no comments on the project at this time.

No other responses were received as of the date of submittal of this PSA.

The potential for the proposed treatment activities to cause a substantial adverse change in the significance of a tribal cultural resource during implementation of vegetation treatment was examined in the PEIR. This impact is within the scope of the PEIR, because the intensity of ground disturbance of the treatment project is consistent with that analyzed in the PEIR. As explained in the PEIR, while tribal cultural resources may be identified within the treatable landscape during development of later treatment projects, implementation of SPRs would avoid any substantial adverse change to any tribal cultural resource.

SPRs applicable to this treatment include SPRs CUL-1 through CUL-6 and CUL-8. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT CUL-4

Vegetation treatment activities would include mechanical treatments using heavy equipment; these treatments may use skid steers, excavators, dozers, and masticators, which could uncover human remains. The NWIC records search did not reveal any burials or sites containing human remains. 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 treatment activities and intensity of ground disturbance are consistent with those analyzed in the PEIR. Additionally, consistent with the PEIR, the project would comply with

California Health and Safety Code Section 7050.5 and PRC Section 5097 in the event of a discovery.

No SPRs are applicable to this impact. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCE IMPACTS

The proposed treatment is consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.5.1, “Environmental Setting,” and Section 3.5.2, “Regulatory Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to cultural resources would occur that is not covered in the PEIR.

4.5 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	LTSM	Impact BIO-1, pp 3.6-131 – 3.6-138	Yes	BIO-1 BIO-2 BIO-6 BIO-7 BIO-9 GEO-1 GEO-3 GEO-4 GEO-5 GEO-7 HYD-4 HYD-5	BIO-1a BIO-1b	LTSM	No	Yes
Impact BIO-2: Substantially Affect Special Status Wildlife Species Either Directly or Through Habitat Modifications	LTSM (all wildlife species except bumble bees) SU (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	BIO-2a BIO-2b 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	LTSM	Impact BIO-3, pp 3.6-186 – 3.6-191	Yes	BIO-1 BIO-2 BIO-3 BIO-4 BIO-6 BIO-9 GEO-1 GEO-3 GEO-4 GEO-5 GEO-7 HAZ-5 HAZ-6 HYD-4 HYD-5	BIO-3a BIO-3b	LTSM	No	Yes

Impact BIO-4: Substantially Affect State or Federally Protected Wetlands	LTSM	Impact BIO-4, pp 3.6-191 – 3.6-192	Yes	BIO-1 BIO-2 BIO-3 BIO-9 GEO-1 GEO-3 GEO-4 GEO-5	BIO-4	LTSM	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?
				GEO-6 GEO-7 HAZ-5 HAZ-6 HYD-1 HYD-4 HYD-5				
Impact BIO-5: Interfere Substantially with Wildlife Movement Corridors or Impede Use of Nurseries	LTSM	Impact BIO-5, pp 3.6-192 – 3.6-196	Yes	BIO-1 BIO-2 BIO-3 HYD-4	NA	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	Yes	BIO-1 BIO-2 BIO-12	NA	LTS	No	Yes
Impact BIO-7: Conflict with Local Policies or Ordinances Protecting Biological Resources	NI	Impact BIO-7, pp 3.6-198 – 3.6-199	Yes	AD-3	NA	NI	No	Yes
Impact BIO-8: Conflict with the Provisions of an Adopted Natural Community Conservation Plan, Habitat Conservation Plan, or Other Approved Habitat Plan	NI	Impact BIO-8, pp 3.6-199 – 3.6-200	No	--	--	--	--	--

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact.

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, A Biological and Special Status Plant and Natural Communities Report was completed by Salix Natural Resource Management Inc. in 2023, a consulting botanist, to review project-specific special status plant and natural communities with potential to occur in the treatment areas. A list of special status plants and natural communities with potential to occur in the treatment area was compiled by completing a review of aerial photographs, the California Natural Diversity Database, the California Native Plant Society Electronic Inventory, A Manual of California Vegetation Online, Preliminary Descriptions of the Terrestrial Natural Communities, USFWS Information for Planning and Consultation, Appendix BIO-3 (Table 9a, Table 9b, Table 10a, Table 10b, and Table 19) in the CalVTP PEIR (Volume II) for special status plants and wildlife that could occur in the Northern California Coast and Northern California Coast Ranges ecoregions, and a field visit.

The special status plant scoping list identified 281 sensitive and special status plant species and 22 species were determined to have a high potential to exist within the VTP assessment area. One special status plant species was discovered in the VTP assessment area. Methuselah's longbeard lichen, Usnea longissima was found in the northern portion of the assessment area. The 22 species with high potential to occur in the project area are identified in Table 4.5-1.

A list of sensitive natural communities with potential to occur within the treatment areas was compiled by completing a CNDDB search of twelve USGS quads surrounding the treatment areas and reviewing Table 3.6-16 (pages 3.6-65 – 3.6-66) in the CalVTP PEIR (Volume II) for sensitive natural communities that could occur in the Northern California Coast and Northern California Coast Ranges ecoregions in the vegetation types mapped in the treatment areas. Eighty-five (85) sensitive natural communities were included in the scoping list, 13 were determined to have high potential to exist within the VTP assessment area, and two were present within the project area, Redwood Forest Alliance and Eastwood Manzanita Shrub Alliance. The two sensitive natural communities are identified in Table 4.5-2. Two additional non-sensitive communities also occur in the VTP assessment area.

Vegetation types within the Guernewood Shaded Fuel Break management unit include Redwood Forest Alliance, Douglas-fir Forest Alliance, Eastwood Manzanita Shrub Alliance and Chamise Shrub Alliance.

A wildlife assessment was completed by Forest Ecosystem Management in 2023, a consulting wildlife biologist report was prepared to review project-specific special status wildlife with potential to occur in the treatment areas. A list of special status wildlife species with potential to occur in the treatment areas was compiled by completing a review of aerial photographs, the California Natural Diversity Database (CNDDB), the CNDDB Special Animal List, the California Wildlife Habitat Relationships System (WHR), the Sonoma County Vegetation Map, the USFWS List of Federal Endangered and Threatened Species, California Bird Species of Special Concern, Spotted Owl Database, USFWS Information for Planning and Consultation, and National Marine Fisheries Service Essential Fish Habitat Mapper, and a field visit.

Forest Ecosystem Management conducted reconnaissance surveys on April 14, 2023 and April 17, 2023 to identify land cover types, document existing conditions and determine if suitable habitat exists for any special status wildlife species, determine if special status wildlife species are present, and determine if additional special status wildlife species surveys are required. The biological reconnaissance survey included examining the habitat within each treatment unit and searching for habitat elements associated with specific species (i.e. plant composition, vegetative structure, aquatic or riparian structures, topography and elevation, special features such as rock outcrops, downed logs, etc.), existing disturbance issues (i.e. roads, houses, powerlines), and the potential for nesting and/or roosting structures (i.e snags, cavity trees, mistletoe, stick structures). The biological report identified 14 listed or sensitive wildlife species with the potential to occur within the project area. These species are identified in Table 4.5-1.

Mechanical and manual treatment activities shall occur between September 16th and January 31st if feasible. If operations occur during the breeding season (February 1st through September 15th):

If mechanical or manual treatment activities are anticipated to occur between February 1st and August 31st; a nesting bird survey shall occur as required by SPR BIO-10 and SPR BIO-12. A qualified surveyor shall conduct the surveys, which shall determine through field inspection whether occupied nests are present within the treatment area. Surveys shall be conducted for nesting raptors and also nesting song birds (purple martins, Vaux's swifts) and potential maternal bat roost trees. Follow Northern spotted-owl survey protocol, to the extent feasible noting variations, in completing a one-year six visits prior to operations As required for safety, the following adjustment may be made: Perform Continuous Walking Surveys: Completed during the day, walk the ridge road playing the electronic caller and pause at prominent points and at regular intervals throughout the area to conduct informal stations that are at least 3 minutes in duration.

The final survey shall be conducted within 14 days prior to beginning operations.

If operations are delayed or there is a break in operations of more than 14 days during the breeding season, then a follow-up nesting bird survey shall be performed to ensure no new nests have been established in the interim.

If active nest/bat roost site is located and there is the potential to affect breeding success, the biologist shall establish and the grantee shall observe an appropriate exclusion zone around the nest (no less than 500 feet no disturbance buffer zone for raptors). This exclusion zone may be modified depending upon the species, nest location, disturbance history, and existing visual buffers, so long as the exclusion zone will avoid disturbance. This no-disturbance buffer zone will be effective until the end of the breeding season or until the qualified biologist determines that all the young have fledged or the nest has failed.

A complete scoping list of all plant and wildlife species with potential to occur in the vicinity of the proposed project was assembled (see Attachment B).

Twenty-four (22) sensitive plant species have a high likelihood to occur in the treatment areas (see Table 4.5-1)

Two (2) Sensitive Natural Communities were identified in the treatment areas (See Table 4.5.-2)

Sixteen (16) listed, protected, or sensitive wildlife species have potential to occur in the treatment areas (see Table 4.5-1).

These species are discussed in detail under Impact BIO-1 (special status plants) and Impact BIO-2 (special status wildlife).

Table 4.5-1 Special Status Plant and Wildlife Species That Occur or May Occur in the Treatment Areas

Species	Listing Status Federal[1]	Listing Status State[1]	CRPR[2]	Habitat	Potential for Occurrence
Amorpha californica var. napensis (Napa false indigo)			1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland. Elevation 50-2000 ft. Blooms Apr-Jul	High
Calamagrostis bolanderi* (Bolander's reed grass)			4.2	Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest. Elevation: 0-455 ft. Blooms May-Aug	High
Ceanothus gloriosus var. exaltatus* (glory brush)			4.3	Chaparral. Elevation: 30-610 ft. Blooms Mar-Jun	High
Erigeron biolettii* (streamside daisy)			3	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest Elevation: 30-1100 ft. Blooms Jun-Oct	High
Erigeron greenei (Greene's narrow- leaved daisy)			1B.2	Chaparral. Elevation: 80-105 ft. Blooms May-Sep	High
Eryngium jepsonii** (Jepson's coyote- thistle)			1B.2	Valley & foothill grassland | Vernal pool. Elevation: 3-305 ft. Blooms Apr-Aug	High
Fritillaria roderickii** (Roderick's fritillary)			1B.1	Coastal bluff scrub | Coastal prairie | Valley & foothill grassland. Elevation: 20-610. Blooms Mar-May	High
Glyceria grandis** (American manna grass)			2B.3	Bog & fen | Marsh & swamp | Meadow & seep | Wetland. Elevation: 60-2045 ft. Blooms Jun-Aug	High
Helianthella castanea** (Diablo helianthella)			1B.2	Broadleaved upland forest | Chaparral | Cismontane woodland | Coastal scrub | Valley & foothill grassland. Elevation: 45-1070 ft. Blooms Mar-Jun	High
Hemizonia congesta ssp. Congesta (congested-headed hayfield tarplant)			1B.2	Valley and foothill grassland. Elevation: 20-560 ft. Blooms Apr-Nov	High
Iris longipetala* (coast iris)			4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps. Elevation: 0-600 ft. Blooms Mar-May	High

Kopsiopsis hookeri (small groundcone)			2B.3	North Coast coniferous forest. Elevation: 90-1435 ft. Blooms Apr-Aug	High
Leptosiphon acicularis* (bristly leptosiphon)			4.2	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland. Elevation: 55-1500 ft. Blooms Apr-Jul	High
Leptosiphon jepsonii (Jepson's leptosiphon)			1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland. Elevation: 55-885 ft. Blooms Mar-May	High
Monardella viridis* (green monardella)			4.3	Broadleafed upland forest, Chaparral, Cismontane woodland. Elevation: 100-1010 ft. Blooms Jun-Sep	High
Perideridia gairdneri ssp. gairdneri* (Gairdner's yampah)			4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools. Elevation: 0-610 ft. Blooms Jun--Oct	High
Piperia candida (white-flowered rein orchid)			1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest. Elevation: 30-1615 ft. Blooms Mar-May	High
Ramalina thrausta** (angel's hair lichen)			2B.1	North Coast coniferous forest. Elevation: 75-430 ft.	High
Tracyina rostrata** (beaked tracyina)			1B.2	Chaparral | Cismontane woodland | Valley & foothill grassland. Elevation: 150-795 ft. Blooms May-Jun	High
Trichostema ruygtii** (Napa bluecurls)			1B.2	Chaparral | Cismontane woodland | Lower montane coniferous forest | Valley & foothill grassland | Vernal pool | Wetland. Elevation: 30-680 ft. Blooms Jun-Oct	High
Trifolium amoenum (two-fork clover)			1B.1	Coastal bluff scrub, Valley and foothill grassland. Elevation: 5-415 ft. Blooms Apr-Jun	High
Trifolium buckwestiorum (Santa Cruz clover)			1B.1	Broadleafed upland forest, Cismontane woodland, Coastal prairie. Elevation: 30-805 ft. Blooms Apr-Oct	High
Usnea longissima (Methuselah's beard lichen)			4.2	Broadleafed upland forest, North Coast coniferous forest. Elevation: 45-1465 ft	Present within project area.

Special Status Wildlife

	Status	Habitat	Potential for Occurrence

Scientific Name (Common Name)	**FEDERAL**	**STATE**		
Taxon: Birds				
Accipiter straitus (Sharp-Shinned Hawk)		WL	Dense forested stands in close proximity to open areas. Nesting usually in dense, pole and small tree stands of conifers; which are cool, moist, well shaded, and close to water. Eats mostly small birds, usually no larger than jays; but also takes small mammals, insects, reptiles, and amphibians. Will hunt at bird feeders, particularly in the winter.	May Occur - Cnddb shows an occurrence within the Duncan Mills Quad; however, SSHA occurrences are probably more probable during the winter months in Sonoma County. Portions of the Project Area is suitable for nesting (along project edges that are within 1/2 mile of Russian River and Mission Creek); however, as the Project is on a ridge top with no year-round water source or riparian areas; more suitable habitat would be found closer to the watercourses during the nesting season.
Ardea alba (Great Egret)		CFS	Groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas are required. Great Egrets are colonial nesters, with often many nests in close proximity; therefore, requiring larger trees near feeding grounds. Feeds in shallow water and along shores of estuaries, lakes, ditches, and slow-moving streams and in irrigated cropland and pastures.	May Occur - Cnddb shows occurrences within the Duncan Mills Quad & WHR lists potential to occur. Great Egrets have been observed near the Russian River in the Guerneville Area and near Jenner. Nesting colonies in Sonoma have been located in trees immediately adjacent to the water. The Project Area is located on the ridge top with no year-round water source. The outer boundaries of the project are the only areas where Great Egrets may be found nesting; however, are most likely still too far from aquatic feeding source (closest site .14 miles from Mission Creek and .3 mile from Russian River); with more suitable habitat closer to the watercourses.

Ardea herodias (Great Blue Heron)		CFS	Perch and roost in secluded tall trees isolated from human activities, near aquatic foraging areas. May also forage in meadows. Colony nester usually near water in large snags or live trees. Tallest trees used near shallow-water feeding areas.	May Occur - Cnddb shows occurrences within the Duncan Mills Quad & WHR lists potential to occur. Great Blue Herons have been observed along the Russian River from Jenner, to Duncan Mills, and Guerneville. The Project Area is located on the ridge top with no year-round water source. The outer boundaries of the project are the only areas where Great Blue Herons may be found nesting; however, are most likely still too far from aquatic feeding source (closest site .14 miles from Mission Creek and .3 mile from Russian River); with more suitable habitat closer to the watercourses.
Chaetura vauxi (Vaux's Swift)		SSC	Forages over most terrains and habitats, often high in the air. Roosts often in flocks. Most Important habitat requirement is appropriate nest-sites in a large, hollow tree. Nests in redwood, Douglas-fir typically built on vertical inner wall of large, hollow tree or snag, especially tall stubs charred by fire.	May Occur - WHR lists potential for occurrences. A few trees were noted within or immediately adjacent to the Project Area that could support nesting Vaux's swifts.
Contopus cooperi (Olive-Sided Flycatcher)	BCC	SSC	Montane conifer forests where tall trees overlook canyons, meadows, lakes or open terrain. High perches. Tall trees for nesting and roosting sites	May Occur - Ipac & WHR lists potential for occurrences. Marginal habitat is present.
*Pandion haliaetus (*Osprey*)*		WL	Rivers, lakes, reservoirs, bays, estuaries and surf zones with large trees to nest. Large trees, snags, and dead-topped trees in open forest habitats near fish bearing waters.	May Occur - Cnddb Duncan Mills & Cazadero Quads and WHR lists potential for occurrences. Osprey have been observed along Russian River to south and east of Project Area. Marginal habitat is present along the edges of the Project Area, although forests may be too thick and more suitable habitat is available closer to the river.
Progne subis (Purple Martin)		SSC	Valley foothills and montane hardwood, montane hardwood/conifer and riparian habitats. Coniferous forests. Often prefer tall isolated tree or snag in open forest to nest in but will use snag/cavity tree, nesting box, under bridge or in culvert.	May Occur - WHR lists potential for occurrences. A few trees were noted within or immediately adjacent to the Project Area that could support nesting Purple Martins.

Strix occidentalis caurina (Northern Spotted Owl)	FT	ST	Requires large blocks of forest with permanent water and suitable nesting sites. Nest in snags or large trees with debris structure or broken tops.	May Occur - Ipac & Cnddb Duncan Mills lists potential for occurrences. The Project Area does have nesting habitat.
Taxon: Mammals				
Arborimus pomo (Sonoma Red-Tree Vole)		SSC	Mature and other stands of Douglas-fir, redwood, or mixed evergreen trees in fog belt. Specializes on needles of Douglas-fir and grand fir. Water is obtained from fog drip on needles.	May Occur - Cnddb Duncan Mills & Cazadero and WHR lists potential for occurrences. Habitat is present throughout the Project Area.
Bassariscus astutus (Ringtail)		FP	Occurs in various riparian habitats, brush stands of most forest and shrub habitats at low to middle elevations. Utilizes hollow trees, logs, snags, cavities in talus/rocky outcrops, and other recesses for cover. Nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests. Usually within .6 miles from permanent water source.	May Occur - WHR lists potential for occurrences. Habitat is present along the edges closer to the Russian River and Mission Creek; however, as Project Area is along the ridge top, habitat is marginal with more suitable habitat closer to the water sources.
Corynorhinus townsendii (Townsend's Big-Eared Bat)		SSC	Prefers mesic habitats, but found in all but subalpine and alpine habitats. Requires caves, mines, tunnels, buildings, or chimney trees. Extremely sensitive to human disturbance.	May Occur - WHR lists potential for occurrences. Some chimney trees and snags were noted within/adjacent to the Project Area.
Lasiurus cinereus (Hoary Bat)	WB:M		May be found at any locations in California. During migration, males found in foothills, deserts, and mountains; and females in lowlands and coastal valleys. Roost in dense foliage of medium to large trees. Preferred sites are hidden from above, with few branches below and have ground cover of low reflectivity. Females bare young while roosting in trees and may leave young in roosting site while foraging.	May Occur - Cnddb Duncan Mills & Cazadero Quads lists potential for occurrences. Habitat is present throughout the Project Area.
[Pekania] Martes pennanti (Fisher)		SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian habitats with a high canopy closure. Cavities in large trees, snags, logs, rock areas, and slash or brush piles provide necessary cover.	May Occur - WHR lists potential for occurrences. Habitat is present throughout the Project Area.

Myotis evotis (Long-Eared Myotis)	WB:M		All brush, woodland, and forest habitats from sea level to 9,000'. Coniferous woodlands and forests are preferred. Forages among trees, over water, and over shrubs. Roosts in buildings, crevices, spaces under bark, and snags. Caves are primarily used as night roosts.	May Occur - WHR lists potential for occurrences. Although caves are lacking for roosts, other roost sites are available throughout the Project Area.
Taxon: Amphibians				
Taricha rivularis (Red-Bellied Newt)		SSC	Broadleaved upland forest. North coast coniferous forests, redwood forests, riparian forests. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km (1/2 mile) to breed, typically in streams with moderate flow and clean, rocky substrate.	May Occur - Cnddb Cazadero Quad & WHR lists the potential of occurrences. Habitat is present, particularly along the northern edge (toward Mission Creek) and eastern/southern edge (toward Russian River).
Taxon: Reptile				
None				
Taxon: Fisheries				
None				
Taxon: Other				
Bombus occidentalis (Western Bumble Bee)		CA	Once common & widespread, now located in high meadows or coastal environments. Nest & hibernation sites in-ground in abandon rodent burrows or similar cavity, or above ground in log cavities or similar cavity, or dense tufts of grass and dead vegetation. Need floral resources and undisturbed nest sites and overwintering areas.	May Occur - Cnddb Duncan Mills Quad lists the potential for occurrences. The Project Area does not have large meadows or open areas full of flowers. Two unknown species of bumble bees were observed within the Project Area. One was on a honeysuckle flower and the second was seen flying around a small opening.

Notes:

*CNPS List Only

**CalVTP List Only

1) Legal Status Definitions:

FE Federally Listed as Endangered (legally protected by ESA)

FT Federally Listed as Threatened (legally protected by ESA)

FD Federally Delisted

SE State Listed as Endangered (legally protected by CESA)

ST State Listed as Threatened (legally protected by CESA)

SR State Listed as Rare (legally protected by NPPA)

C Candidate for Federal or State Listing
SSC Species of special concern (no formal protection other than CEQA consideration)

CDF:S CalFire Sensitive
FP CDF Fully protected
WL CDFW Watch list
BCC USFWS Birds of Conservation Concern
WBWG:M or H Western Bat Working Group

2) California Rare Plant Ranks (CRPR):

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

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

CRPR Threat Ranks:

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

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

CBR Considered but Rejected

Table 4.5-2 Sensitive Natural Communities Documented to Occur in the Treatment Areas

Species	Primary Lifeform	Global Rarity	State Rarity	Potential for Occurrence[2]
Sensitive Natural Communities				
Eastwood Manzanita Shrub Alliance	Shrub	G4	S3	Present within project area
Redwood Forest Alliance	Tree	G3	S3	Present within project area

The Eastwood Manzanita Shrub Alliance is Vegetation Condition Class III.A with High Vegetation Departure 67-83%, Class 5, and a medium fire return interval (30-100+ years).

The Redwood Forest Alliance is Vegetation Condition Class of III.A with High Vegetation Departure 67-83%, Class 5. The fire return interval is short to long (no years specified).

Other natural communities that exist within the project area, but are not classified as sensitive, include:

Douglas-fir Forest Alliance, (G5, S4)
Chamise Shrub Alliance (G5, S5)

Notes:

Legal Status Definitions:

Global Rarity

The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.

G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.

G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.

G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

State Rarity

S1 (critically imperiled)

S2 (imperiled)

S3 (vulnerable)

S4 (No Threat Rank, apparently secure within California)

Older ranks may still contain a decimal "threat" rank of .1, .2, or .3, where:

1 indicates very threatened status

2 indicates moderate threat

3 indicates few or no current known threats

IMPACT BIO-1

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects on special status plant species that may occur in the treatment area. Potential impacts resulting from maintenance activities would be similar to those resulting from initial vegetation treatments, because the same treatment activities would occur. However, treatment frequency and intensity can determine whether effects on certain plant species are beneficial or adverse. Initial treatment that reduces overgrowth, opens the tree canopy to allow more light penetration, or removes invasive competitors that can be beneficial for special status plant populations; however, repeated treatments at too frequent intervals can have adverse effects on those same special status plants.

SPR BIO-7 would apply to all treatment activities, including maintenance treatments; it requires protocol-level surveys for special status plants to be conducted prior to implementation of mechanical, manual, prescribed burning, prescribed herbivory, and herbicide treatments. Pursuant to SPR BIO-7, surveys would not be required for those special status plants not listed under CESA or ESA, if the target special status plant species is an herbaceous annual species, stump-sprouting species, or geophyte species, and the treatment may be carried out during the dormant season for that species or when the species has completed its annual life cycle, provided the treatment would not alter habitat in a way that would make it unsuitable for the special status plants to reestablish following treatment, or destroy seeds, stumps, or roots, rhizomes, bulbs and other underground parts of special status plants.

Where protocol-level surveys are required (per SPR BIO-7) and special status plants are identified during these surveys, Mitigation Measures BIO-1a and BIO-1b would be implemented to avoid loss of identified special status plants. Per Mitigation Measures BIO-1a and BIO-1b, if special status plants are identified during protocol-level surveys, a no-disturbance buffer of at least 20 feet will be established around the area occupied by the species within which mechanical and manual treatments, prescribed burning, prescribed herbivory, and herbicide application would not occur unless a qualified RPF or biologist determines that the species would benefit from treatment in the occupied habitat area. In the case of plants listed pursuant to CESA or ESA, the determination of beneficial effects would need to be made in consultation with the California Department of Fish and Wildlife (CDFW) and/or USFWS. If treatments are determined to be beneficial and would be implemented in areas occupied by special status plants, under the specific conditions described under Mitigation Measures BIO-1a and BIO-1b, additional impact minimization and avoidance measures or design alternatives to reduce impacts would be identified. An evaluation of the appropriate treatment design and frequency to maintain habitat function for special status plants will be carried out by a qualified RPF or botanist. Therefore, habitat function for special status plants would be maintained because treatment activities and maintenance treatments would be designed to ensure that treatments, including follow-up maintenance, maintain habitat function for the special status plant species present.

Botanical survey was conducted throughout the project area in 2023 by Salix Natural Resource Management, Inc.. During these surveys, the project area was visited four times throughout the growing season. All plants observed during site visits were recorded, and a list of plants that were observed is included in the botanical report. One special status plant species was observed (Usnea longissima, Methuselah's longbeard lichen) in the northern portion of the project area growing on a large manzanita shrub. Usnea longissima has a rare plant rank of 4.2. Other potential special status plant species that have a high likelihood to occur within the project area are included in Table 4.5-1. The complete botanical report is provided in Appendix B.1.

Other special status plant species that may occur within the treatment areas are identified in the scoping list in Appendix B. Impacts on these species would be avoided by implementing non- ground-disturbing treatment activities (e.g., manual treatment activities) during the dormant season (i.e., when the plant has no aboveground parts), which would generally occur during the winter. Ground-disturbing treatment activities (e.g., mechanical treatments, construction of control lines for broadcast burning) may result in impacts on these plant species even when dormant and would not be conducted without prior implementation of SPR BIO-7. If non-ground-disturbing treatments cannot be completed in the dormant season and would be implemented during the growing period of these annual and geophyte species, protocol surveys (per SPR BIO-7) and avoidance of any identified plants (per Mitigation Measures BIO-1a and BIO-1b) must be implemented.

As a result of the 2023 botanical survey, Usnea longissimi (a lichen) has been identified to occur within the treatment area. If future botanical surveys for SPR BIO-7 determine the species is still present, implementation of Mitigation Measure BIO-1b would be required to avoid loss of individual plants by establishing a no-disturbance buffer around the area occupied by the species and marking the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). The no-disturbance buffers will be a minimum of 20 feet from special status plants, but the size and shape of the buffer zone may be adjusted if a qualified RPF or botanist, in consultation with CDFW and/or USFWS, determines that a smaller buffer will be sufficient to avoid loss of or damage to special status plants or that a larger buffer is necessary to sufficiently protect plants from the treatment activity.

Project-Specific Implementation:

To protect Usnea longissima, the host plant will be flagged with orange and white SPECIAL TREATMENT AREA flagging. The host shrub will not be removed during project treatments. Any similar lichen found will have it's host protected.

For mechanical and manual treatments – retain all specimens and their hosts. Do not place burn piles near (within 20 feet) of retained plants.

For mechanical treatments – retain all specimens and their hosts. Reduce fuels around plants (at least 20 feet away) with manual treatment prior to mastication. This should ensure a safe buffer from treatment with heavy equipment.

For prescribed burning treatments – reduce fuels around plants (within 20 feet) by manual treatment.

Pursuant to SPR HYD-4, Watercourse and Lake Protection Zones (WLPZs) and Equipment Limitation Zones (ELZs) ranging from 30 to 100 feet adjacent to all aquatic habitat within the treatment areas would be implemented for mechanical, manual, prescribed burning, prescribed herbivory, and herbicide treatments, and would minimize some adverse effects on other species that could occur but were not observed in the 2023 botanical survey. Although WLPZs would avoid and minimize some adverse effects on special status plants typically associated with wet areas, all habitat potentially suitable cannot be avoided and establishing WLPZs and protective buffers may not fully prevent impacts on the species. As a result, SPR BIO-7 was implemented, or will be implemented for future projects.

The potential for treatment activities to result in adverse effects on special status plants was examined in the PEIR. This impact on special status plants is within the scope of the PEIR, because, within the boundary of the project area, habitat characteristics are essentially the same within and outside the treatable landscape (e.g., no resource is affected on land outside the treatable landscape that would not also be similarly affected within the treatable landscape), and the treatment activities and intensity of disturbance are consistent with those analyzed in the PEIR.

Biological SPRs that apply to project are SPRs BIO-1, SPR BIO-2, SPR BIO-6, SPR BIO-7, SPR BIO-9, SPR GEO-1, SPR GEO-3, SPR GEO-4, SPR, GEO-5, SPR GEO-7, SPR HYD-4, and SPR HYD-5. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-2

Initial vegetation treatments and follow-up maintenance treatments could result in direct or indirect adverse effects on special status wildlife species and habitat suitable for these species within a treatment area, as described in the following sections. Potential impacts resulting from maintenance activities would be similar to those resulting from initial vegetation treatments because the same treatment activities would occur.

Special Status Birds

Eight special status bird species have the potential to occur within the treatment area: Sharp-Shinned Hawk, Great Egret, Great Blue Heron, Vaux's Swift, Olive-Sided Flycatcher, Osprey, Purple Martin, and Northern Spotted Owl (Table 4.5-1).

Treatment activities, including mechanical treatments, manual treatments, prescribed burning, prescribed herbivory, and herbicide application conducted during the nesting bird season could result in direct loss of active nests if trees or shrubs containing nests are removed or burned. For nests within vegetation that would not be removed, treatment activities including mechanical treatments, manual treatments, prescribed burning, prescribed herbivory, and herbicide application could result in disturbance to active nests from auditory and visual stimulus (e.g., heavy equipment, chain saws, vehicles, personnel) potentially resulting in abandonment and loss of eggs or chicks. The potential for treatment activities to result in adverse effects on special status birds was examined in the PEIR.

Per SPR BIO-1, if it is determined that adverse effects on habitat suitable for nesting special status birds can be clearly avoided by physically avoiding habitat suitable the species or conducting treatments outside of the season of sensitivity (i.e., nesting bird season), then no mitigation would be required. Adverse effects on nesting special status birds would be avoided for treatments that would occur outside of the nesting bird season (February 1–September 15).

If conducting some treatments outside of the nesting bird season is determined to be infeasible for certain treatments, then SPR BIO-10 would apply, and focused nesting bird surveys would be conducted prior to implementation of treatment activities. If no active bird nests are observed during focused surveys, then additional avoidance measures for these species would not be required. If active special status bird nests are observed during focused surveys, then Mitigation Measures BIO-2a (for Great Blue Heron, Great Egret, Osprey, and Northern Spotted Owl) and BIO- 2b (for Sharp-Shinned Hawk, Vaux's Swift, Olive-Sided Flycatcher and Purple Martin) would be implemented.

Under Mitigation Measures BIO-2a and BIO-2b, a no-disturbance buffer of 1,000 foot radius for Northern Spotted Owl, 660 foot radius for Bald eagle nests, 300 foot radius for Great Blue Heron and Great Egret, 500 ft radius for Osprey, sharp-shinned hawk and all other raptors (as recommended by CDFW 9/12/2023), and at least 100 feet around the nests of other special status birds, and no treatment activities would occur within this buffer until the chicks have fledged as determined by a qualified biologist. Additionally, trees containing Bald eagle nests would not be removed pursuant to the Bald and Golden Eagle Protection Act.

Habitat function for special status birds would be maintained because treatment activities would not result in removal of trees (i.e., conifers, hardwoods) or snags greater than 12 inches dbh, which would be the most likely features to be used by these species due to the cover provided by larger trees. Additionally, treatments within a WLPZ would be limited pursuant to SPR HYD-4 (e.g., no mechanical treatment, retention of at least 75 percent surface cover). Pursuant to Mitigation Measure BIO-2a, this determination for Bald Eagle, Great Blue Heron, Great Egret, Osprey, and Northern Spotted Owl must be made in consultation with CDFW. Therefore, if Mitigation Measure BIO-2a is required for treatment activities, Environmental Resource Solutions, Inc. would contact CDFW to seek technical input on the determination that habitat function would be maintained for Bald Eagle, Great Blue Heron, Great Egret, Osprey, and Northern Spotted. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Sonoma Tree Vole

Habitat potentially suitable for Sonoma tree vole is present in the project area, including Douglas-fir forest. Sonoma tree voles prefer old growth or mixed old growth and mature forest habitat; however, the species can occur in other types of forests. While it is possible that this species could nest in large trees (especially Douglas-fir) on the project site, treatment activities would not result in removal of living trees greater than 12 inches dbh. Adverse effects on Sonoma tree voles are unlikely to occur and mitigation would not be required.

Habitat function for Sonoma tree vole would be maintained because treatment activities and maintenance treatments would not result in removal of living trees greater than 12 inches dbh which would be the most likely features to be used by this species. The potential for treatment activities and maintenance treatments to result in adverse effects on Sonoma tree vole was examined in the PEIR. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Ringtail

Habitat in the project area is marginal, according to Attachment B. The maternity season is April 15 – July 31 according to CDFW recommendations 9/12/2023. Generally, ringtails are found in riparian areas or within shrub/lowland forest habitats close to riparian areas. They will den in rocky outcrops, often within riparian areas or lowland forest habitat. Do not disturb rock piles, particularly on the lower slopes where ringtails would most likely be found. Large-diameter trees and snags are also used as den sites, particularly on the lower slopes or within riparian areas.

Rocky areas or large-diameter trees/snags are not designated for removal or disruption during fuel hazard reduction projects. Impacts are unlikely due to low likelihood to occur and because the species is highly mobile. This species has state fully protected status and no federal status. Impacts on ringtail populations would be less than significant. If a ringtail is observed during operations, operations within ½ mile of that area will stop. The site location will be flagged and mapped, and a qualified wildlife biologist will be notified to determine appropriate mitigation measures. The impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Fisher

Habitat is suitable within the project area, according to Attachment B. The breeding season is February 1st – May 31st. In California, the original range of the fisher included the Northern Coast Range, Klamath Mountains, Southern Cascades, and western slopes of the Sierra Nevada. They have historically (1978 – 2008) been identified in Mendocino, Sonoma, and Lake Counties. The West Coast DPS of fishers is state listed as threatened and a species of concern.

Habitat for fishers is intermediate to large-tree stages of coniferous forests and deciduous riparian habitats with a high canopy closure. Forest structure appears to be more important than tree species for fisher habitat. Important forest structure for fishers includes a diversity of tree sizes, snags, downed trees and limbs, and understory vegetation. Natal dens are often high in cavities in both live and dead trees. Cavities in large trees, snags, logs, rocky areas; or shelters provided by slash or brush piles, and debris structures (mistletoe clumps, raptor and squirrel nests) provide cover for fishers.

Sonoma County is considered an area where fishers are rare or absent within the Range. Impacts are unlikely due to low presence and because the species is highly mobile. Cavities in large trees, snags, or logs provide potential den sites for

fishers. They will also den in rocky outcrops. These structures (rocky areas and large-diameter trees/snags) are not designated for removal or disruption during fuel hazard reduction projects. WLPZ Protection zones protect larger trees with cavities and other potential den sites to be maintained and developed over time. WLPZ may also provide movement corridors.

If a fisher is observed during operations, operations within ½ mile of that area will stop. The site location will be flagged and mapped, and a qualified wildlife biologist will be notified to determine appropriate mitigation measures. The impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Red-Bellied Newt

Habitat is present in the project area. It is found within primarily redwood forests, but also occurs in mixed conifer, valley-foothill woodlands, montane hardwood, and hardwood-conifer habitats. They spend the dry season underground within root channels. The range for this species includes Sonoma County. Red-bellied newts may migrate a mile or more to and from the breeding stream. Migratory movements are stimulated primarily by rain.

Reproduction requires rapid-flowing streams with rocky substrate for breeding, egg-laying, and larval development. Other features of occupied streams include water temperatures ranging between 15 and 26 degrees Celius, a mix of coarse streambed substrates, and intermediate levels of canopy closure.

Migratory movements are usually correlated with the winter rains. Operations will be complete prior to winter or will cease when soils are saturated. Per SPR BIO-4, ground disturbance within riparian habitats and loss or degradation of riparian habitats will be minimized. There are no breeding streams within the project boundary. The impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Special Status Bats

Habitat potentially suitable for four special status bat species -- Townsend's Big-Eared Bat, Hoary Bat, and Long-Eared Myotis -- is present within forested habitat and human-made structures in the treatment areas. Per SPR BIO-1, if it is determined that adverse effects on special status bats can be clearly avoided by conducting treatments outside of the season of sensitivity (i.e., maternity season), then mitigation would not be required. Adverse effects on special status bat maternity roosts would be avoided by conducting initial and maintenance treatments outside of the bat maternity season (March 15 – September 15).

Treatment activities, including mechanical treatments, manual treatments, prescribed burning, prescribed herbivory, and herbicide treatments, conducted within habitat suitable for bats during the bat maternity season (April 1–August 31) could disturb active bat roosts from auditory and visual stimuli (e.g., heavy equipment, chain saws, vehicles, personnel) or smoke (e.g., prescribed burning) potentially resulting in abandonment of the roost and loss of young. Herbicide treatments would be limited to ground-based methods, such as using a backpack sprayer or painting herbicide onto cut stems and would be conducted by crews of one to eight people; thus, these treatments would not be expected to result in substantial disturbance to special status bat roosts. The potential for treatment activities to result in adverse effects on special status bats was examined in the PEIR.

If conducting some mechanical or manual treatments, prescribed burning, prescribed herbivory, or herbicide treatments would occur during the bat maternity season, then SPR BIO-10 would apply, and focused surveys for these species would be conducted within suitable habitat areas prior to initiation of treatments. If special status bat roosts are identified during focused surveys, Mitigation Measure BIO-2b for special status bats would be implemented.

Under Mitigation Measure BIO-2b, a no-disturbance buffer of a minimum of 100 feet would be established around active Townsend's Big-Eared Bat, Hoary Bat, or Long-Eared Myotis roosts and mechanical treatments, manual treatments, prescribed herbivory, and herbicide treatments would not occur within this buffer. If special status bat roosts are identified in a treatment area where prescribed burning is planned, prescribed burning activities would be implemented outside of the bat breeding season, which is April 1–August 31.

Habitat function for special status bats would be maintained because treatment activities and maintenance treatments would not result in significant removal of living trees greater than 12 inches dbh which would be the most likely features to be used by this species due to the cover provided by larger trees. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Western Bumble Bee

Habitat in the project area is marginal, according to Attachment B. The grassland within the project area is not flower-rich. Per SPR Bio-2g, mechanical and manual treatments will not be implemented in the entire habitat area in a given year. Habitat will be divided into units with some units untreated to provide refuge for bumble bees. Prescribed burning within the grassland will occur from October through February to avoid the bumble bee flight season. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Conclusion

The potential for treatment activities to result in adverse effects on special status wildlife was examined in the PEIR. This proposed project's impact on special status wildlife is within the scope of the PEIR, because within the boundary of the project area habitat characteristics are essentially the same within and outside the treatable landscape and the treatment activities and intensity of disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR.

Biological resource SPRs that apply to project impacts under Impact BIO-2 are SPR BIO-1, SPR BIO-2, SPR BIO-9, SPR BIO-10, SPR GEO-1, and SPR HYD-4. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-3

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects on sensitive habitats, including designated sensitive natural communities. Potential impacts resulting from maintenance activities would be similar to those resulting from initial vegetation treatments because the same treatment activities are proposed; however, retreatment at too great a frequency could result in additional adverse effects. The potential for treatment activities, including maintenance treatments to result in adverse effects on sensitive habitats was examined in the PEIR.

SPR BIO-3 requires a qualified biologist to identify potential sensitive natural communities using the most current edition of *A Manual of California Vegetation*. The vegetation classification was verified using aerial imagery analysis and field verification. The following sensitive natural communities are present in the treatment areas: Redwood Forest Alliance and Eastwood Manzanita Shrub Alliance (Table 4.5-2), and the full botanical survey report in Appendix B.1.

Riparian habitat is present adjacent to streams in the treatment areas. Under SPR HYD-4, WLPZs ranging from 50 to 100 feet would be established adjacent to all Class II streams and buffers sufficient to prevent the degradation of downstream beneficial uses of water as determined on a site-specific basis adjacent to all Class III streams, for manual, mechanical, prescribed burning, prescribed herbivory, and herbicide treatments, which would limit the extent of treatment activities within riparian habitat. As required under SPR BIO-4, treatments in riparian habitats would retain at least 75 percent of the overstory and 50 percent of the understory canopy of native riparian vegetation and would largely be limited to removal of uncharacteristic fuel loads (e.g., dead or dying vegetation, invasive plants). Removal of large, native riparian hardwood trees (e.g., willow, ash, maple, oak, alder, sycamore, cottonwood) will be minimized, as hardwoods greater than 10 inches are not prescribed for removal. Within the riparian habitat, live, healthy, native trees that are considered large for that type of tree and large relative to other trees in that location will be retained. If trees in the riparian habitat are generally smaller than 10 inches, the retention size parameter will be adjusted on a site specific basis to ensure retention of the largest trees. Additionally, prior to any treatments in riparian habitat, Environmental Resource Solutions, Inc. would notify CDFW pursuant to California Fish and Game Code 1602, when required, as explained in SPR BIO-4.

The sensitive natural communities within the treatment area are classified as rarity rank S3 (Redwood Forest Alliance and Eastwood Manzanita Shrub Alliance). In these forest and woodland sensitive natural communities, only shaded fuel breaks will be installed, and they will not be installed in more than 20 percent of the sensitive natural community in the area. If treatment activities within identified sensitive natural communities or oak woodlands cannot be avoided, then Mitigation Measure BIO-3a would apply in these areas. Under Mitigation Measure BIO-3a, a qualified RPF or biologist would determine the natural fire regime, condition class, and fire return interval for each sensitive natural community and oak woodland type. Initial and maintenance treatment activities in sensitive natural communities and oak woodlands would be designed to restore the natural fire regime and return vegetation composition and structure to their natural condition to maintain or improve habitat function. If habitat function of sensitive natural communities or oak woodlands would not be maintained through implementation of Mitigation Measure BIO-3a, then Mitigation Measure BIO-3b would apply, and unavoidable losses of these resources would be compensated through restoration or preservation of these vegetation types within or outside of the treatment areas.

The potential for treatment activities to result in adverse effects on sensitive habitats, as described above, was examined in the PEIR. This impact on sensitive habitats is within the scope of the PEIR and the treatment activities and intensity of

disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. Biological resource SPRs that apply to project impacts under Impact BIO-3 are SPR BIO-1, SPR BIO-2, SPR BIO-3, SPR BIO-4, SPR BIO-6, SPR BIO-9, SPR GEO-1, SPR GEO-3, SPR GEO-4, SPR GEO-5, SPR GEO-7, SPR HAZ-5, SPR HAZ-6, SPR HYD-4, and SPR HYD-5. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-4

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects on state or federally protected wetlands. Potential impacts resulting from maintenance activities would be similar to those resulting from initial vegetation treatments because the same treatment activities are proposed. The potential for treatment activities to result in adverse effects on state or federally protected wetlands was examined in the PEIR.

Based on review and survey of project-specific biological resources (SPR BIO-1), the treatment area does not contain perennial or ephemeral streams that would be protected under federal and/or state government jurisdiction. The project area was designed to avoid streams and riparian areas. Swales within the project area drain toward the Russian River, Austin Creek, and Hulbert Creek.

Under SPR HYD-4, WLPZs ranging from 50 to 100 feet would be established adjacent to all Class II streams within the treatment areas, and WLPZs of sufficient size to avoid degradation of downstream beneficial uses of water would be established adjacent to all Class III streams within the treatment areas for manual, mechanical, prescribed burning, prescribed herbivory, and herbicide treatments.

The locations of seasonal wetlands, springs, and seeps on the project site are generally known; however, these features have not been mapped or demarcated. Mitigation Measure BIO-4 would apply, and a qualified RPF or biologist would delineate the boundaries of these features, establish an appropriate buffer (with a minimum of 25 feet) around seasonal wetlands, springs, and seeps, and mark the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway).

Broadcast burning may be implemented in all treatment areas and may occur within areas that contain seasonal freshwater emergent wetlands, springs, seeps, or stream habitat. Mitigation Measure BIO-4 would apply in treatment areas that contain state or federally protected wetlands where broadcast burning would occur. Under Mitigation Measure BIO-4, the boundary of jurisdictional features would be delineated, and broadcast burning may be implemented in wetland habitats if a qualified RPF or biologist determines that the wetland habitat does not support special status plants (i.e., through implementation of SPR BIO-7) or wildlife species (i.e., through implementation of SPR BIO-10), that wetland habitat function would be maintained, and that the broadcast burn is within the normal fire return interval for the wetland vegetation types present. Additionally, no fire ignition (and associated use of accelerants) will occur within wetland habitat or within WLPZs surrounding wetland habitats.

The potential for treatment activities to result in adverse effects on state or federally protected wetlands was examined in the PEIR. This impact on wetlands is within the scope of the PEIR and the treatment activities and intensity of disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. Biological resource SPRs that apply to project impacts under Impact BIO-4 are SPR BIO-1, SPR BIO-2, SPR BIO-3, SPR BIO-9, SPR GEO-1, SPR GEO-3, SPR GEO-4, SPR GEO- 5, SPR GEO-6, SPR GEO-7, SPR HAZ-5, SPR HAZ-6, SPR HYD-1, SPR HYD-4, and SPR HYD-5. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-5

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects on wildlife movement corridors and nurseries because habitat suitable for wildlife is present in treatment areas. Potential impacts resulting from maintenance activities would be similar to those resulting from initial vegetation treatments because the same treatment activities are proposed. The potential for treatment activities to result in adverse effects on wildlife movement corridors and nurseries was examined in the PEIR.

Based on review and survey of project-specific biological resources (SPR BIO-1), 87 acres of the project area fall within the Coast Range-Marin Coast critical habitat linkage (Conservation Lands Network 2021). The treatment area contains natural habitat and may be used as wildlife movement corridors, especially ridges and riparian corridors. Due to the nature of the proposed treatment activities, implementation of these treatment activities would not result in a substantial change in the existing conditions that facilitate wildlife movement through treatment areas. The width of the linkage polygon at its narrowest point along the project area remains over one mile, and there are cross-sections at other points along this habitat

corridor that are narrower than that. The Coast Range-Marin Coast critical habitat linkage is 169,784 acres, and the 87 acre project represents approximately .05% of that number. CDFW's Terrestrial Connectivity dataset was also used to analyze potential impact. The project boundary falls in two polygons, one being ranked 5, indicating it is a core part of the landscape block and the landscape is "highly intact." The other hexagon being ranked 4, which means that the project area is in an area with high value for terrestrial connectivity. Given the project goal of creating a fuel break along the ridge and the heavy accumulation of fuels in the project area, it is not unreasonable to consider the long-term benefits to the corridor in making it more fire resilient. Treatments would seek to protect and restore native ecological function by thinning small diameter trees, removing excessive standing dead wood, and controlling nonnative trees and shrubs. These treatments would promote the establishment of mature trees and a healthy forest structure resulting in improved habitat for wildlife that would function better for wildlife movement post-treatment. Additionally, no known wildlife nursery sites or indications of nursery sites, such as deer fawning habitat or potential rookery trees with whitewash, were identified within any treatment areas during implementation of SPR BIO-1.

The potential for treatment activities to result in adverse effects on wildlife movement corridors and nurseries was examined in the PEIR. This impact is within the scope of the PEIR and the treatment activities and extent of expected disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. Habitat function within treatment areas would be maintained because treatment activities, including maintenance treatments, would not result in significant removal of living trees (i.e., conifers, hardwoods) greater than 12 inches dbh which will maintain connectivity of a mature forest. Additionally, WLPZs ranging from 50 to 100 feet would be implemented adjacent to all Class II streams, and buffers will be established on Class III streams in treatment areas, which could function as wildlife movement corridors, pursuant to SPR HYD-4. Biological resource SPRs that apply to project impacts under Impact BIO-5 are SPR BIO-1, SPR BIO-2, SPR BIO-3, and SPR HYD-4. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-6

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects resulting in reduction of habitat or abundance of common wildlife, including nesting birds, because habitat suitable for these species is present throughout treatment areas. Treatment activities, including mechanical treatments, manual treatments, prescribed burning, prescribed herbivory, and herbicide application, conducted during the nesting bird season (February 1– August 31) could result in direct loss of active nests or disturbance to active nests from auditory and visual stimulus (e.g., heavy equipment, chain saws, vehicles, personnel) potentially resulting in abandonment and loss of eggs or chicks. The potential for treatment activities, including maintenance treatments, to result in adverse effects on these resources was examined in the PEIR.

SPR BIO-12 would apply, and for treatments implemented during the nesting bird season, a survey for common nesting birds will be conducted within the treatment area by a qualified RPF or biologist prior to treatment activities. If no active bird nests are observed during focused surveys, then additional avoidance measures would not be required. If active nests of common birds or raptors are observed during focused surveys, disturbance to the nests will be avoided by establishing an appropriate buffer around the nests, modifying treatments to avoid disturbance to the nests, or deferring treatment until the nests are no longer active as determined by a qualified RPF or biologist.

The potential for treatment activities to result in adverse effects on these resources was examined in the PEIR. The potential for adverse effects on common wildlife, including nesting birds, is within the scope of the PEIR and the treatment activities and extent of expected disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. Biological resource SPRs that apply to project impacts under Impact BIO-6 are SPR BIO-1, SPR BIO-2, and SPR BIO-12. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-7

The potential for treatment activities to result in conflicts with local policies or ordinances was examined in the PEIR. Applicable local ordinances relevant to biological resources are the Sonoma County Tree Protection Ordinance, and the Sonoma County Heritage or Landmark Tree Ordinance (Sonoma County 1986; Sonoma County 1989). The Sonoma County Tree Protection Ordinance applies to development projects in the unincorporated County and requires submission of a site plan with the development permit depicting all protected trees (i.e., trees greater than 9 inches dbh) that would be removed (Sonoma County 1989). The project is not a development project and would not be required to submit a development permit. The Sonoma County Heritage and Landmark Tree Ordinance requires a tree permit for removal of a designated heritage or landmark tree (i.e., a tree or grove of trees so designated by the Sonoma County Board of Supervisors due to historical interest, significance, or outstanding characteristics in terms of size, age, rarity, shape, or location) in the unincorporated County (Sonoma County 1986). It is unlikely that any trees that would be removed during implementation of treatment activities would

qualify as a Heritage or Landmark Tree. Further, this ordinance grants exemptions for removal of trees when such removal is authorized by CAL FIRE or where a tree is in a hazardous, dangerous, or unhealthy condition so as to endanger life, property, or other trees (Sonoma County 1989). There would be no conflict with local ordinances as a result of implementation of treatment activities.

The potential for the proposed treatments to conflict with local policies is within the scope of the PEIR because vegetation treatment locations, types, and activities are consistent with those analyzed in the PEIR. In addition, all projects implemented under the CalVTP that are subject to local policies or ordinances would be required to comply with them, per SPR AD-3. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT BIO-8

This impact does not apply to the proposed project because the treatment areas are not within the plan area of any adopted habitat conservation plan or natural community conservation plan. Therefore, this impact does not apply to the proposed project.

NEW BIOLOGICAL RESOURCE IMPACTS

The proposed treatments are within the treatable landscape, treatment types and treatment activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.7.1, “Environmental Setting,” and Section 3.7.2, “Regulatory Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to biological resources would occur that is not covered in the PEIR.

4.6 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	AQ-3 AQ-4 GEO-1 GEO-2 GEO-3 GEO-4 GEO-5 GEO-6 GEO-7 GEO-8	NA	LTS	No	Yes
Impact GEO-2: Increase Risk of Landslide	LTS	Impact GEO-2, pp. 3.7-29 – 3.7-30	Yes	AQ-3 GEO-1 GEO-3 GEO-4 GEO-7 GEO-8	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact.

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

The project area is located in central-western Sonoma County, approximately 10 miles east of the Pacific Ocean and is part of the Coast Range geomorphic province. Soil associations in the project area include:

- Hugo very gravelly loam, 50-75% slopes;
- Hugo-Hely complex, 50 – 75% slopes;
- Laughlin Loam, 30-50% slopes

Generally, soils within the project areas are well drained, have rapid runoff, and high erosion hazard rating. Parent material is residuum weathered from sedimentary rock. The project is anchored to a linear ridgetop and includes gently sloping to steeply sloping loam soils.

IMPACT GEO-1

Vegetation treatments would include manual and mechanical treatments, prescribed burning, prescribed herbivory, and ground-based herbicide application which could result in varying levels of soil disturbance and have the potential to increase rates of erosion and loss of topsoil. The potential for these treatment activities to cause substantial erosion or loss of topsoil was examined in the CalVTP PEIR. Mechanical treatments using heavy machinery such as a masticator or tracked chipper are the most likely treatment to cause soil disturbance that could lead to substantial erosion or loss of topsoil, especially in areas containing steep slopes. Equipment used to create or maintain piles for burning, impacts to soil from animals, or reduced vegetation cover from use of herbicides may also increase the risk of soil disturbance. Prescribed burning can increase the risk of hydrophobicity (repellency) which can increase erosion. This impact is within the scope of the CalVTP PEIR because the use of and type of equipment proposed, extent of vegetation removal, and intensity of prescribed burning, prescribed herbivory, and herbicides are consistent with those analyzed in the Cal VTP PEIR.

SPRs applicable to this treatment project are GEO-1 through GEO-8, AQ-3, and AQ-4. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the CalVTP PEIR.

IMPACT GEO-2

Vegetation treatments would include manual and mechanical treatments, prescribed burning, prescribed herbivory, and ground-based herbicide application which could decrease the stability of slopes and increase the risk of landslides. There appear to be unstable areas near the edge of the treatment area, as evidenced by lidar hillshade maps. There is no recent movement on these features that is visible from the project edge. Scarps or ground cracks are not visible from the project edge. Mature trees are fairly vertical. No operations will be conducted on active or recently active unstable areas. Given the variable topography, risk of landslide activity remains. The potential for treatment activities to increase landslide risk was examined in the PEIR. This impact is within the scope of the PEIR because the equipment proposed for use, the extent of vegetation removal, intensity of prescribed burning, prescribed herbivory and herbicides are consistent with those analyzed in the PEIR.

SPRs applicable to the proposed project are GEO-1, GEO-3, GEO-4, GEO-7, GEO-8, and AQ-3. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW GEOLOGY, SOILS, PALEONTOLOGY, AND MINERAL RESOURCE IMPACTS

The proposed treatments are within the treatable landscape, treatment types and treatment activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.7.1, “Environmental Setting,” and Section 3.7.2, “Regulatory Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to geology, soils, paleontology, or mineral resources would occur that is not covered in the PEIR.

4.7 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	NA	NA	LTS	No	Yes
Impact GHG-2: Generate GHG Emissions through Treatment Activities	SU	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.

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

Consistent with the goals of the proposed fuel treatments to decrease the occurrence of high-severity wildfires and increase the potential rates of carbon sequestration, implementation of the CalVTP could result in a cumulative net carbon benefit over the long term. However, there is uncertainty in predicting future wildfire occurrence, emissions, and carbon sequestration rates, which are highly variable depending on many factors. Use of vehicles, mechanical equipment, and prescribed burning during initial and maintenance treatments would result in greenhouse gas (GHG) emissions. Consistency of treatments under the CalVTP with applicable plans, policies, and regulations aimed at reducing GHG emissions was examined in the PEIR. Consistent with the PEIR, although GHG emissions would occur from equipment and vehicles used to implement treatments, the purpose of the proposed project is to reduce wildfire risk, which could reduce GHG emissions and increase carbon sequestration over the long term. This impact is within the scope of the PEIR because the proposed activities, as well as the associated equipment, duration of use, and resultant GHG emissions, are consistent with those analyzed in the PEIR.

SPR GHG-1 is not applicable to the proposed project because this project is not a registered offset project under the Board's Assembly Bill 1504 Carbon Inventory Process. As such, the requirement to inform reporting under Assembly Bill 1504 does not apply. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT GHG-2

Consistent with the goals of the proposed fuel treatments to decrease the occurrence of high-severity wildfires and increase the potential rates of carbon sequestration, implementation of the CalVTP could result in a cumulative net carbon benefit over the long term. However, there is uncertainty in predicting future wildfire occurrence, emissions, and carbon sequestration rates, which are highly variable depending on many factors. Use of vehicles, mechanical equipment, and prescribed burning during initial and maintenance treatments would result in GHG emissions. The use of air curtain burners is proposed. The essential function of this technology is to reduce smoke, and resultant GHG emissions compared to pile burning by consuming biomass quickly and efficiently. According to a 2020 study of biomass, air curtain burners emit 54 percent less CO2 emissions compared to pile burning (Puettman et. al. 2020 as cited in Ascent 2022). The potential for treatments under the CalVTP to generate GHG emissions was examined in the PEIR. This impact is within the scope of the PEIR because the proposed activities, as well as the associated equipment and duration of use, and the intent of the treatments to reduce wildfire risk and GHG emissions related to wildfire are consistent with those analyzed in the PEIR. Mitigation Measure GHG-2 would be implemented and would reduce GHG emissions associated with the prescribed burning. However, emissions generated by the treatments would still contribute to the annual emissions generated by the CalVTP, and this impact would remain significant and unavoidable, consistent with, and for the same reasons described in, the PEIR. SPR AQ-3 is also applicable to this treatment and will contain the description of feasible GHG reduction techniques implemented per Mitigation Measure GHG-2. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW IMPACTS RELATED TO GHG EMISSIONS

The proposed treatments are within the treatable landscape and are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable regulatory and environmental conditions presented in the CalVTP PEIR (refer to Section 3.8.1, “Regulatory Setting,” and Section 3.8.2, “Environmental Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to GHG emissions would occur that is not covered in the PEIR.

4.8 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.

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

Use of vehicles and mechanical equipment during initial treatment and treatment maintenance activities would result in the consumption of energy through the use of fossil fuels. The use of fossil fuels for equipment and vehicles was examined in the PEIR. The consumption of energy during implementation of the treatment project is within the scope of the PEIR because the types of activities, as well as the associated equipment and duration of proposed use, are consistent with those analyzed in the PEIR.

No SPRs are applicable to this impact. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than covered in the PEIR.

NEW ENERGY RESOURCE IMPACTS

The proposed treatments are within the treatable landscape and are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable regulatory and environmental conditions presented in the CalVTP PEIR (refer to Section 3.9.1, "Regulatory Setting," and Section 3.9.2, "Environmental Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to energy resource would occur that is not covered in the PEIR.

4.9 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	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	LTSM	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.

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

Initial and maintenance treatments may include mechanical treatments, manual treatments, prescribed burning, prescribed herbivory, and herbicide application. These treatment activities would require the use of fuels and related accelerants, which are hazardous materials. The potential for treatment activities to cause a significant health hazard from the use of hazardous materials was examined in the PEIR. This impact is within the scope of the PEIR because the types of treatments and associated equipment and types of hazardous materials that would be used are consistent with those analyzed in the PEIR.

SPR HAZ-1 is applicable to this treatment. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT HAZ-2

Initial and maintenance treatments may include herbicide application to target plant species using ground-based methods, such as using a UTV, backpack sprayer, or painting herbicide onto cut stems or stumps. No aerial spraying of herbicides would occur. The potential for treatment activities to cause a significant health hazard from the use of herbicides was examined in the PEIR. This impact is within the scope of the PEIR because the types of herbicides (e.g., glyphosate) and application methods that would be used, which are limited to ground-based applications, are consistent with those analyzed in the PEIR. In addition, herbicides would be applied by licensed applicators in compliance with all laws, regulations, and herbicide label instructions, consistent with herbicide use described in the PEIR.

SPRs HAZ-5 through HAZ-9 are applicable to this treatment. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT HAZ-3

Initial and maintenance treatments may cause burning/smoke and/or soil disturbance, which could expose workers, the public, or the environment to hazardous materials if a contaminated site is present within the project area. The potential for workers participating in treatment activities to encounter contamination that could expose them, the public, or the environment to hazardous materials was examined in the PEIR. This impact was identified as potentially significant in the PEIR because hazardous materials sites could be present within treatment sites throughout the large geographic extent of the treatable landscape, and the feasibility of implementing mitigation for exposure of people or the environment to hazards resulting from soil disturbance or burning in a hazardous materials site was uncertain.

As directed by Mitigation Measure HAZ-3, database searches for hazardous materials sites within the project area have been conducted. No hazardous material sites were reported for the project area, see Attachment C. Therefore, after the implementation of Mitigation Measure HAZ-3, it was determined that no hazardous materials sites would be disturbed by treatments and this impact would be less than significant.

No SPRs are applicable to this impact, and no additional mitigation is required. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW HAZARDOUS MATERIALS, PUBLIC HEALTH AND SAFETY IMPACTS

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.10.1, “Environmental Setting,” and Section 3.10.2, “Regulatory Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to hazardous materials, public health, or safety would occur.

4.10 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 BIO-4 GEO-4 GEO-6 AQ-3	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-1 HYD-3 HYD-4 GEO-4	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-5 BIO-4 HAZ-5 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?
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-4 GEO-5	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact.

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

The project area is within the Russian River Watershed. Hydrologic features in the project vicinity include the Russian River, Austin Creek, and Hulbert Creek.

Several of the impacts below (i.e., HYD-1 through 4) evaluate compliance with water quality standards or waste discharge requirements. All include implementation of SPR HYD-1, which requires compliance with such water quality regulations. The State Water Resources Control Board is requiring all projects utilizing the CalVTP PEIR to follow the requirements of their Vegetation Treatment General Order, which would meet the requirements of SPR HYD-1. Users of the CalVTP PSA process are automatically enrolled in the General Order and are required to implement all applicable SPRs and mitigation measures from the PEIR. In addition, the General Order requires project proponents to comply with any applicable Basin Plan prohibitions.

IMPACT HYD-1

Initial and maintenance treatments may include prescribed burning. Ash and debris from treatment areas could runoff into adjacent drainages and streams. Although most treatment areas have been designed to avoid streams and watercourses, WLPZs ranging from 50 to 100 feet depending upon slope will be implemented for Class II streams, and ELZ's ranging from 30 to 50 feet depending upon slope will be implemented for Class III streams, that are within treatment areas pursuant to SPR HYD-4. The potential for prescribed burning activities to cause runoff and violate water quality regulations or degrade water quality was examined in the PEIR. This impact is within the scope of the PEIR because the use of low-intensity prescribed burns and associated impacts to water quality are consistent with those analyzed in the PEIR.

SPRs applicable to this treatment are HYD-1, HYD-4, BIO-4, GEO-4, GEO-6, and AQ-3. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT HYD-2

Initial and maintenance treatments would include mechanical and manual treatments. Although most treatment areas have been designed to avoid streams and watercourses, WLPZs ranging from 50 to 100 feet depending upon slope will be implemented for Class II streams, and ELZ's ranging from 30 to 50 feet depending upon slope will be implemented for Class III streams

that are within treatment areas pursuant to SPR HYD-4. The potential for mechanical and manual treatment activities to violate water quality regulations or degrade water quality was examined in the PEIR. This impact is within the scope of the PEIR because the use of heavy equipment and hand-held tools to remove vegetation and associated impacts to water quality are consistent with those analyzed in the PEIR.

SPRs applicable to this treatment are 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, and HAZ-5. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT HYD-3

Initial and maintenance treatments may include prescribed herbivory. Grazing animals will often congregate near water sources and in riparian areas and have potential effects to drainages and streams. Although treatment areas have been designed to avoid streams and watercourses, WLPZs ranging from 50 to 100 feet depending upon slope will be implemented for Class II streams, and ELZ's ranging from 30 to 50 feet depending upon slope will be implemented for Class III streams, that are within treatment areas pursuant to SPR HYD-4. The potential for prescribed herbivory activities to violate water quality regulations or degrade water quality was examined in the PEIR. This impact is within the scope of the PEIR and associated impacts to water quality are consistent with those analyzed in the PEIR.

SPRs applicable to this treatment are HYD-1, HYD-3, HYD-4, GEO-4. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT HYD-4

Initial and maintenance treatments would include the use of herbicides to manage invasive plant species and resprouting native tree species. Herbicide application would be limited to ground-based methods, such as using targeted spray from a backpack or reservoir carried by a UTV, or painting herbicide onto cut stems or stumps. All herbicide application would comply with EPA and California Department of Pesticide Regulation label standards. The potential for the use of herbicides to violate water quality regulations or degrade water quality was examined in the PEIR. This impact is within the scope of the PEIR because the use of herbicides to remove vegetation and associated impacts to water quality are consistent with those analyzed in the PEIR.

SPRs applicable to this treatment are HYD-1, HYD-5, BIO-4, HAZ-5, and HAZ-7. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT HYD-5

Initial and maintenance treatments could cause ground disturbance and erosion, which could directly or indirectly modify existing drainage patterns. The potential for treatment activities to substantially alter the existing drainage pattern of a project site was examined in the PEIR. This impact to site drainage is within the scope of the PEIR because the types of treatments and treatment intensity are consistent with those analyzed in the PEIR.

SPRs applicable to this treatment are HYD-4, HYD-6, GEO-1, GEO-2, GEO-4, and GEO-5. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW HYDROLOGY AND WATER QUALITY IMPACTS

The proposed treatment is consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.11.1, "Environmental Setting," and Section 3.11.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to hydrology and water quality would occur.

4.11 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	Yes	AD-3	NA	LTS	No	Yes
Impact LU-2: Induce Substantial Unplanned Population Growth	LTS	Impact LU-2, pp. 3.12-14 – 3.12-15	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact.

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

The project area is entirely within the Resources and Rural Development (RRD), zoning district per the Sonoma County General Plan (County of Sonoma 2020).

IMPACT LU-1

SPR AD-3 requires the project comply with applicable Sonoma County plans, policies, and ordinances, such as those pertaining to noise, biological resources, and water resources. This impact is within the scope of the PEIR because proposed treatment types and activities are consistent with those examined in the PEIR.

No conflict would occur because the project proponent would adhere to SPR AD-3. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than covered in the PEIR.

IMPACT LU-2

The potential for initial treatments and maintenance treatments to result in substantial population growth as a result of increases in demand for employees was examined in the PEIR. Mechanical treatment activities typically utilize crews of 2 to 4 members. Manual treatment activities may be conducted by crews of 8 to 20 members either working together or as smaller crew units. Prescribed burning treatment activities would require between 10 and 50 crew members, depending on size of the burn unit. Herbicide treatments would typically use a one- to eight-person crew. Crew sizes would be consistent with those analyzed in the PEIR. Impacts associated with short-term increases in the demand for workers during implementation of the treatment project are within the scope of the PEIR because the number of workers required for implementation of the treatments is consistent with the crew sizes analyzed in the PEIR for the types of treatments proposed.

No SPRs apply to this impact. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than covered in the PEIR.

NEW LAND USE AND PLANNING, POPULATION AND HOUSING IMPACTS

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.3.1, "Environmental Setting," and Section 3.3.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to land use and planning, population and housing impacts would occur.

4.12 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-3 NOI-4 NOI-5 NOI-6	NA	LTS	No	Yes
Impact NOI-2: Result in a Substantial Short-Term Increase in Truck-Generated Single-Event Noise Levels 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.

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

Initial and maintenance treatments would require heavy, noise-generating equipment This equipment would include chainsaws, polesaws, masticators, all terrain vehicles, and other support equipment.. The potential for a substantial short-term increase in ambient noise levels from use of heavy equipment was examined in the PEIR. This impact is within the scope of the PEIR because the number and types of equipment proposed, and the duration of equipment use, are consistent with those analyzed in the PEIR. The proposed treatments would not require the use of helicopters, which was the loudest type of equipment evaluated in the PEIR. While there is the potential for some prescribed burning to occur during nighttime and weekend hours, all treatment activities using equipment would be limited to daytime hours (7am to 7pm) Monday through Friday, which would avoid the potential to cause sleep disturbance to residents during the more noise- sensitive evening and nighttime hours.

Sensitive receptors adjacent to the project area are rural residences. Some of the rural residences occur on participating project parcels. Treatments would be limited to the project area, which contain very few sensitive receptors (i.e. residential land uses). Treatment activities will not be located in one location for a long duration, as crews move along the length of the ridgeline throughout the project to implement the treatment, resulting in noise generating activities not lasting long in one location.

The County General Plan has policies relating to noise generated from operational activities, however, it does not specifically address temporary noise from construction-related activities. The County's "Guidelines for the Preparation of Noise Analysis" (February 2019), provides guidance how to address temporary construction noise. The Guidelines discuss the use of BMP's to address noise from construction activities that occur for less than one year, such as this project. In order to reduce temporary construction-related noise, the following BMP's will be implemented as part of the project:

- Limiting hours of construction to avoid the early morning and evening hours (such as 7 am to 7 pm weekdays and 7 am to 5 pm weekends)
- Limiting work to non-motorized equipment on Sundays and holidays
- Siting construction staging areas as far as practical from nearby sensitive receptors
- Require street legal mufflers on all construction equipment

SPRs applicable to this treatment are AD-3, NOI-1, NOI-2, NOI-3, NOI-4, NOI-5, and NOI-6. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT NOI-2

Initial and maintenance treatments would involve large trucks hauling heavy equipment, crews, or livestock to the project area. These haul truck trips would be dispersed on area roadways providing access to the project area, including SR 116, River Road, Old Monte Rio Road, Duncan Road, and Siri Road. Vehicle traffic on area highways is not expected to generate a noticeable increase in traffic-related noise. Haul truck trips on the local roadways would pass by residential receptors and the event of each truck passing by could increase the Single-Event Noise Levels (SENL). The potential for a substantial short-term increase in Single-Event Noise Levels was examined in the PEIR. This impact is within the scope of the PEIR because the number and types of equipment proposed are consistent with those analyzed in the PEIR. The haul trips associated with the treatment would occur during daytime hours, which would avoid the potential to cause sleep disturbance to residents during the more noise-sensitive evening and nighttime hours.

SPR NOI-1 is applicable to this impact. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW NOISE IMPACTS

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.13.1, "Environmental Setting," and Section 3.13.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to noise impacts would occur.

4.13 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	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	SU	Impact UTIL-2, pp. 3.16-10 – 3.16-12	No	NA	NA	NA	NA	NA
Impact UTIL-3: Comply with Federal, State, and Local Management and Reduction Goals, Statutes, and Regulations Related to Solid Waste	LTS	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.

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

Initial and maintenance treatments would include prescribed burning, which may require an on-site water supply if the burn goes out of prescription. If needed, water would be supplied from the town of Guerneville or approved groundwater sources owned by the implementing entities, and transported via water trucks, fire trucks, or water trailers. The potential increased demand for water was examined in the PEIR. This impact is within the scope of the activities and impacts addressed in the PEIR because the size of the area proposed for prescribed burn treatments, amount of water required for prescribed burning, and water source type are consistent with those analyzed in the PEIR.

No SPRs are applicable to this impact. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT UTIL-2

Initial and maintenance treatments would generate biomass as a result of vegetation removal within the treatment areas. Biomass generated by mechanical and manual treatments would be disposed of with pile burning or mulching or lopping and scattering biomass in areas where material cannot safely be burned.

Invasive plant and noxious weed biomass will be treated onsite (e.g., prescribed or pile burning), when possible, to eliminate seed and propagules. Invasive plants and noxious weeds will not be chipped and spread or mulched onsite. If invasive plant biomass cannot be treated onsite, there is the potential for a small amount to be disposed of offsite at an appropriate waste collection facility. This impact was identified as potentially significant and unavoidable in the PEIR because biomass hauled off-site could exceed the capacity of existing infrastructure for handling biomass. For the proposed treatment project, invasive plant waste is proposed to be piled and burned on site or burned in an air curtain burner, therefore the amount of biomass generated is not expected to exceed the capacity of existing infrastructure. SPR UTIL-1 would be applicable to the proposed treatments if biomass is hauled off-site. Implementation of this SPR would maintain impacts at less than significant, and mitigation is not required.

IMPACT UTIL-3

As discussed above, initial and maintenance treatments would generate biomass as a result of vegetation removal within the treatment areas. Biomass generated by mechanical and manual treatments would be disposed of with pile burning, burning in an air curtain burner, mulching or lopping and scattering in areas where material cannot safely be burned.

Invasive plant and noxious weed biomass will also be treated onsite, when possible. If invasive plant biomass cannot be treated onsite, there is the potential for a small amount to be disposed of offsite at an appropriate waste collection facility. If offsite disposal is required, the project will comply with all federal, state, and local management and reduction goals, statutes, and regulations related to solid waste. Compliance with reduction goals, statutes, and regulations related to solid waste was examined in the PEIR. This impact is within the scope of the activities and impacts addressed in the PEIR because the type and amount of biomass that may need to be hauled off-site are consistent with those analyzed in the PEIR.

SPR UTIL-1 would be applicable to the proposed treatments if biomass is hauled off-site. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW IMPACTS ON PUBLIC SERVICES, UTILITIES AND SERVICE SYSTEMS

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. The project proponent has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.16.1, “Environmental Setting,” and Section 3.16.2, “Regulatory Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the CalVTP PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to public services, utilities and service systems would occur.

4.14 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	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact.

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

The proposed treatment would occur entirely within private property and not within public recreation areas. Privately owned properties intersecting the treatment area may be used for recreational activities by members of the Guernewood Neighborhood Association. Recreational impacts would primarily be related to dispersed recreation occurring on Guernewood Shaded Fuel Break properties. Recreation activities include primarily hiking and cycling activity. The potential for vegetation treatment activities to disrupt recreation activities was examined in the PEIR. The potential for the proposed treatment project to impact recreation is within the scope of the PEIR.

NEW RECREATION IMPACTS

The proposed project is consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.14.1, "Environmental Setting," and Section 3.14.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to recreation would occur that is not covered in the PEIR.

4.15 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	Impact TRAN-1, pp. 3.15-9 – 3.15-10	No	NA	NA	NA	No	Yes
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-2 TRAN-1	NA	LTS	No	Yes
Impact TRAN-3: Result in a Net Increase in VMT for the Proposed CalVTP	SU	Impact TRAN-3, pp. 3.15-11 – 3.15-13	Yes	NA	AQ-1	SU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact.

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

The trips associated with the project will not conflict with a County plan to address Vehicle Miles Travelled or road closures.

IMPACT TRAN-2

Initial and maintenance treatments would not require the construction or alteration of any roadways, however, the proposed treatments would include prescribed burning, and would produce smoke that could potentially affect visibility along nearby roadways causing a transportation hazard. The potential for smoke to affect visibility along roadways during implementation of the treatment project was examined in the PEIR. This impact is within the scope of the activities and impacts addressed in the PEIR because the burn duration is consistent with that analyzed in the PEIR.

SPRs applicable to this treatment are AD-3, HYD-2, and TRAN-1. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT TRAN-3

Due to an intended decrease in the occurrence and severity of wildfires following achievement of the proposed treatment acreage targets under the CalVTP, implementation of the CalVTP could result in a net reduction in VMT in the long term because wildfire response travel could be reduced, resulting in a less-than-significant impact. However, because of the increase in treatment acreage under the CalVTP, VMT associated with treatment activities would increase in comparison to the existing condition.

Initial and maintenance treatments could temporarily increase vehicle miles traveled (VMT) above baseline conditions because the treatment areas are in remote locations and would require vehicle trips to access the treatment areas. This impact was identified as potentially significant and unavoidable in the PEIR because implementation of the CalVTP would result in a net increase in VMT. However, as noted under Impact TRAN-3 in the PEIR, individual vegetation treatment projects under the CalVTP are reasonably expected to generate fewer than 110 trips per day, which would cause a less-than-significant transportation impact for specific later activities, as described in the *Technical Advisory on Evaluating Transportation Impacts*, published by the Governor's Office of Planning and Research (OPR 2018). Initial treatments are expected to require up to 50 crew members, which would not exceed 110 trips per day. Most of the emission reduction techniques included in Mitigation Measure AQ-1 would be infeasible for the project proponent to implement, however the project proponent will encourage, but not require, use of these emission reduction techniques by contractors. Carpooling of crews is typically feasible to implement for most of the workers, and crews often carpool in groups of 4 to 8 in crew trucks or crew vans, however carpooling may not always be feasible. For these reasons, and as explained in the PEIR, this impact would remain significant and unavoidable. Temporary increases in VMT are within the scope of the activities and impacts addressed in the PEIR because the number and duration of increased vehicle trips is consistent with that analyzed in the PEIR. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW IMPACTS TO TRANSPORTATION

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatments and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.15.1, "Environmental Setting," and Section 3.15.2, "Regulatory Setting," in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to transportation would occur that is not covered in the PEIR.

4.16 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	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 Postfire Flooding or Landslides	LTS	Impact WIL-2, pp. 3.17-15 – 3.17-16	Yes	AQ-3 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.

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

Vegetation treatment activities proposed would include mechanical, manual, prescribed burn, prescribed herbivory, and herbicide application treatments. Vegetation treatment involving motorized equipment could pose a risk of accidental ignition. Temporary increases in risk associated with uncontrolled fire from prescribed burnings could also occur. As discussed in Section 3.17.1, "Environmental Setting," in Volume II of the Final PEIR, under "Prescribed Burn Planning and Implementation," implementing a prescribed burn requires extensive planning, including the preparation of Burn Plans, Smoke Management Plans, site-specific weather forecasting, public notifications, safety considerations, and ultimately favorable weather conditions so a burn can occur on a given day. Prior to implementing a prescribed burn, fire containment lines would be established by clearing vegetation surrounding the designated burn area to help prevent the accidental escape of fire. Water containers and safety equipment would be staged on site as necessary.

The potential increase in exposure to wildfire during implementation of treatments was examined in the PEIR. Increased wildfire risk associated with the use of heavy equipment in vegetated areas and with prescribed burns is within the scope of the PEIR because the types of equipment, treatment duration, and the types of prescribed burn methods proposed as part of the project are consistent with those analyzed in the PEIR.

SPRs HAZ-2, HAZ-3, and HAZ-4, pertaining to preparation of burn plans in accordance with CAL FIRE requirements, equipment safety requirements, carrying fire extinguishers, and prohibiting smoking in vegetated areas, apply to the proposed treatments. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

IMPACT WIL-2

Vegetation treatment activities proposed would include mechanical, manual, prescribed burn, prescribed herbivory, and herbicide application treatments which could exacerbate fire risk or expose people or structures to risks related to post-fire flooding or landslides. There are steep slopes in some areas of the treatment units. The potential for post-fire landslides and flooding was evaluated in the PEIR. The potential exposure of people or structures to post-fire landslides and flooding are within the scope of the activities and impacts covered in the PEIR because the equipment types and duration, and methods of prescribed burn implementation are consistent with those analyzed in the PEIR.

SPRs applicable to this impact are AQ-3 GEO-3, GEO-4, GEO-5, and GEO-8. Although most mechanical treatment would occur from existing roads and skid trails, or on flat to moderate slopes, SPR GEO-8 would apply if mechanical activities occur in a treatment area that contains steep slopes. Because the treatments are intended to reduce wildfire risk, they could also decrease post wildfire landslide and flooding risk in areas that could otherwise burn in a high-severity wildfire without treatment. This impact of the proposed project is consistent with the PEIR and would not constitute a substantially more severe significant impact than what was covered in the PEIR.

NEW IMPACTS ON WILDFIRE

The proposed treatments are consistent with the treatment types and activities considered in the CalVTP PEIR. Sonoma County has considered the site-specific characteristics of the proposed treatment project and determined they are consistent with the applicable environmental and regulatory conditions presented in the CalVTP PEIR (refer to Section 3.17.1, “Environmental Setting,” and Section 3.17.2, “Regulatory Setting,” in Volume II of the Final PEIR). Sonoma County has also determined that the circumstances under which the proposed treatment project would be undertaken are consistent with those considered in the PEIR. No changed circumstances would give rise to new significant impacts not addressed in the PEIR. Therefore, no new impact related to wildfire would occur that is not covered in the PEIR.

5 LIST OF PREPARERS

County of Sonoma (CEQA Project Proponent and Responsible Agency)

Robert Aguero .....Senior Environmental Specialist

Sonoma County Agriculture and Open Space District (Grant Funding Entity)

Kim Batchelder……Vegetation Management Coordinator

Environmental Resource Solutions, Inc. (Implementing Entity)

Mitchell Haydon .....Registered Professional Forester

Harlan Tranmer……..…… Registered Professional Forester

Karl Franci ..... Supervised Designee

Rodrigo Vargas..... Supervised Designee

Patrick Ziegler ..... Supervised Designee

Kelli Mathia ..... Chief Financial Officer, Administration

6 REFERENCES

Alley, Bowen, & Co. 1880. History of Sonoma County. Alley, Bowen, & Co. Publishers, San Francisco, California.

Ascent Environmental. 2022 (December). Evaluation of Air Quality and Climate Change Impacts from Specialized Biomass Processing Technologies under the California Vegetation Treatment Program. Prepared for Board of Forestry and Fire Protection.

Baldwin, B.G., Goldman, D.H., Keil, D.J., Patterson, R., Rosatti, T.J., Wilken, D.H. 2012. The Jepson Manual Vascular Plants of California. University of California Press, Berkeley, CA. California Department of Fish and Game.

Ballard, Hannah. 1997. Ethnicity and Chronology at Metini, Fort Ross State Park. In The Archaeology of Russian Colonialism in the North and Tropical Pacific, edited by Peter R. Mills and Antoinette Martinez, pp. 116-140. Kroeber Anthropological Society Papers 81. Kroeber Anthropological Society, Berkeley, California.

Barrett, Samuel A. 1908. The Ethnogeography of the Pomo and Neighboring Indians. University of California Publications in American Archaeology and Ethnology 6(1):1-332. Berkeley.

Barrett, Samuel A. 1952. Material Aspects of Pomo Culture, Parts I and II. Bulletin of Public Museum of the City of Milwaukee Vol. 20.

Basgall, Mark E. 1993. Chronological Sequences in the Southern North Coast Ranges, California. In There Grows a Green Tree: Papers in Honor of David A. Fredrickson, edited by Greg White, Pat Mikkelsen, William R. Hildebrandt, and Mark E. Basgall, pp. 167-195. Center for Archaeological Research at Davis Publication No. 11. University of California, Davis.

Bean, L. J. and D. Theodoratus. 1978. Western Pomo and Northeastern Pomo. In Handbook of North American Indians, Vo. 8, California, edited by R. F. Heizer, pp. 278-305. Smithsonian Institution, Washington, D.C.

Beck, Warren A. and Ynez D. Hasse. 1974. Historical Atlas of California. University of Oklahoma Press, Oklahoma.

Blair, Heather. 2019. California Vegetation Treatment Program: Final Program Environmental Impact Report, State Clearinghouse # 2019012052. California Board of Forestry and Fire Protection, Sacramento, California.

California Department of Conservation. 2015. California Geological Survey. State of California. Website: https://www.conservation.ca.gov/cgs, Accessed July 2022.

California Department of Fish and Game (CDFG). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. The Resource Agency, Sacramento, CA.

California Department of Fish and Wildlife. 2014. California Interagency Wildlife Task Group. CWHR Version 9.0 personal computer program. Sacramento, CA. Last updated 2018.

California Department of Fish and Wildlife, 2022. California Natural Diversity Database. Biogeographic Data Branch. Electronic records search.

California Department of Fish and Wildlife. August 18, 2021. California Sensitive Natural Communities List Biogeographic Data Branch. Accessed at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline

California Department of Fish and Wildlife. 2022. California Natural Diversity Database (CNDDB). California Department of Fish and Wildlife, Biogeographic Data Branch. RareFind Version 5. Most recently accessed March 2022.

California Department of Fish and Wildlife. 2022. Spotted Owl Viewer. Biogeographic Data Branch.

California Department of Fish and Wildlife. 2022. Vegetation Classification and Mapping Program. Sacramento, CA.

California Department of Fish and Wildlife. February 28, 2023. ACE online map viewer. Accessed at https://www.wildlife.ca.gov/Data/Analysis/ACE

California Department of Toxic Substances Control. 2023. EnviroStor. Available: www.envirostor.dtsc.ca.gov. Accessed February 27, 2023.

California Department of Transportation (Caltrans). Historical Significance – Local Agency Bridges. Structure Maintenance and Investigations. Sacramento, California. Website: https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical- bridges-tunnels, Accessed July 2022.

California Department of Transportation. 2004 (December). California Bat Mitigation Techniques, Solutions, and Effectiveness. Prepared by H. T. Harvey & Associates, Sacramento, CA.

California Office of Historic Preservation (OHP). 2012. Directory of Properties in the Historic Property Data File for Sonoma County, California Office of Historic Preservation. Sacramento, California.

California Office of Historic Preservation (OHP). 2019. California Historical Resources by County. California Office of Historic Preservation. Sacramento, California. Website: http://ohp.parks.ca.gov/ListedResources, Accessed July 2022.

CalFire. 2008. Important Information for Timber Operations Proposed within the Range of the Northern Spotted Owl. California Department of Forestry & Fire Protection. February 2008.

California Native Plant Society (CNPS). 2014. Inventory of Rare and Endangered Plants, 7th Edition. Accessed online at http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi

California Office of Historic Preservation (OHP). 2020. Built Environment Resource Directory (BERD) for Contra Costa County. California Office of Historic Preservation. Sacramento, California.

CalPhoto Database accessed at http://elib.cs.berkeley.edu/photos/flora/

Conservation Lands Network. 2022. Online explorer tool version 2.0. Available: https://www.bayarealands.org/explorer-tool/. Accessed October 26, 2022.

Federated Indians of Graton Rancheria. 2022. Coast Miwok and Southern Pomo: Timeline. Website, https://gratonrancheria.com/culture/history/. Accessed October 2022.

Fredrickson, David A. 1973. Early Cultures of the North Coast Ranges. California. Unpublished PhD dissertation, on file at the Department of Anthropology, University of California, Davis.

Fredrickson, David A. 1974. Cultural Diversity in Early Central California: A view from the North Coast Ranges. Journal of California Anthropology 1(1)41-53.

Fredrickson, David A. 1989. Prehistory of the Laguna: An Overview. Unpublished report on file at the Northwest Information Center, Rohnert Park, California.

Gifford, E.W., with A. L. Kroeber. 1939. Cultural Element Distributions, IV: Pomo. Berkeley: University of California Publications in American Archaeology and Ethnology 23.

Google Earth. 2022. Russian River Area. Accessed June 2022.

Golla, Victor. 2011. California Indian Languages. University of California Press, Berkeley and Los Angeles, California.

Groza, R.G. 2002. An AMS Chronology for Central California Olivella Shell Beads. Master's thesis, Department of Anthropology, California State University, San Francisco.

Gudde, Edwin G. 1998. California place names: The Origin and Etymology of Current Geographical Names. William Bright (ed.) University of California Press, Berkeley.

Historical Significance – State Agency Bridges. Structure Maintenance and Investigations. Sacramento, California. Website: https://dot.ca.gov/programs/environmental- analysis/cultural-studies/california-historical-bridges-tunnels, Accessed July 2022.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Sacramento, CA: California Department of Fish and Game.

Jepson Flora Project (eds.). 2022. Jepson eFlora. Online at: http://ucjeps.berkeley.edu/eflora/ most recently accessed June 2022.

Jones, David (editor). 2007. Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record. English Heritage Publishing, Swindon, United Kingdom.

Jones, Terry L., and John F. Hayes. 1989. Archaeological Data Recovery at CA-Son-120, Sonoma County, California. Environmental Research Branch, California Department of Transportation, Oakland. Unpublished report on file at the Northwest Information Center, Rohnert Park, California.

Jones, Terry L., and John F. Hayes. 1993. Problems and Prospects in Sonoma County Archaeology. In There Grows a Green Tree: Papers in Honor of David A. Fredrickson, edited by Greg White, Pat Mikkelsen, William R. Hildebrandt, and Mark E. Basgall, pp. 197-216. Center for Archaeological Research at Davis Publication No. 11. University of California, Davis.

Landfire. Us_220 Vegetation Condition Class and Vegetation Departure. https://www.landfire.gov/. Accessed July 2023.

Lebaron, Gaye. 2010. The Lasting Impact of Mercury Mining. The Press Democrat. Dated July 11th, 2010. Website, http://www.pressdemocrat.com/news/2235702-181/the-lasting-impact-of- mercury?sba=AAS, accessed October 2022.

Lightfoot Kent, G. 2005. Indians, Missionaries and Merchants The Legacy of Colonial Encounters on the California Frontiers. University of California Press, Berkeley, California.

Lightfoot, Kent G., Thomas A. Wake and Ann M. Schiff. 1991. The Archaeology and Ethnohistory of Fort Ross, California vol. 1. In Contributions of the University of California Archaeological Research Facility 49. Archaeological Research Facility, University of California at Berkeley, California.

Meyer, Jack, and Jefferey S. Rosenthal. 1997. Archaeological and Geoarchaeological Investigations at Eight Prehistoric Sites in the Los Vaqueros Reservoir Area, Contra Costa County, California. Anthropological Studies Center, Sonoma State University, Rohnert Park, California. Manuscript available at the NWIC, Rohnert Park, California.

LaJeunesse, R.M., and J.M. Pryor. 1996. Skyrocket Appendices. Report on file, Department of Anthropology, California State University, Fresno.

Meyer, Jack. 2003. An Overview of Geoarchaeological Research Issues for the Point Reyes National Seas Shore–Golden Gate National Recreation Area. Anthropological Studies Center, Sonoma State University. Rohnert Park, California.

Meyer, Jack, and Jefferey S. Rosenthal. 2007. A Geoarchaeological Overview for the Nine Bay Area Counties of Caltrans District 4. Far Western Anthropological Research Group, Inc., Davis, California. Submitted to the California Department of Transportation, District 4, Oakland.

McClendon, S. and Michael J. Lowy. 1978. Western Pomo and Northeastern Pomo. In California, edited by R. F. Heizer, pp. 306-323. Handbook of North American Indians, Volume 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

McLendon, S., and Oswalt R.L. 1978. Pomo: Introduction. Handbook of North American Indians California Volume 8. Robert F. Heizer, Editor, pp. 274–288. Washington, D.C.: Smithsonian Institution.

Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Carter, and David A. Fredrickson. 2007. Chapter 8. Punctuated Culture Change in the San Francisco Bay Area. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 99–124. Alta Mira Press, Lanham, Maryland.

Moratto, Michael J. 1984. California Archaeology. Academic Press, Orlando, Florida.

Mikulik, Charles. 2023. Preliminary Study: Archaeological Survey Report Guernewood Neighborhood Association Shaded Fuel Break Vegetation Management Project, Sonoma County, California. FirstCarbon Solutions.

Morrison, Heather. 2023. Botanical and Special Status Plant and Natural Communities Report. Salix Natural Resource Management, Inc. July 10, 2022.

National Marine Fisheries Service (NMFS). Essential Fish Habitat Mapper. Accessed: June 2022.

National Park Service. 2014. File geodatabase of unrestricted National Register of Historic Places properties. IRMA Portal: US Department of the Interior. Website: https://irma.nps.gov/DataStore/Reference/Profile/2210280. Accessed July 2022.

National Register of Historic Places (NRHP). United States Department of the Interior. Website: https://www.nps.gov/subjects/nationalregister/index.htm, Accessed July 2022.

National Register of Historic Places (NRHP). Web based map with address search. Website: https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9- a99909164466. Accessed July 2022.

NETRonline. Aerial Imagery. Temple, Arizona. Website: https://www.historicaerials.com/. Accessed July 2022.

USDA NRCS. “Custom Soil Resource Report.” https://websoilsurvey.nrcs.usda.gov/app/. Accessed March 2023.

Peterson, Roger T. 2010. Peterson Field Guide to Birds of Western North America. Fourth Edition. Houghton Mifflin Hardcourt. Boston, MA

Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls. Endorsed by the U.S. Fish & Wildlife Service. February 2, 2011 and Revised January 9, 2012.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans. 2009. A Manual of California Vegetation. Second edition. California Native Plant Society Press, Sacramento, CA.

Sharnoff, Stephen, 2014. A Field Guide to California Lichens. Yale University Press

Sharnoff, S., Brodo, I. and Duran Sharnoff, S. 2001. Lichens of North America. Yale University Press

Sholers, Teresa and Golec, Clare, 2007. Rare Plants of the Redwood Forest and Forest Management Effects. U.S.D.A. Forest

Service General Technical Report. PSW-GTR-194

Shuford, W.D. and T. Gardali. Eds. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western field Ornithologists, Camarillo, CA and California Department of Fish and Game. Sacramento, CA.

Smirnoff, Leslie E. 2009. A Cultural Resources Inventory and Management Plan for Sonoma Land Trust's Little Black Mountain Property. Unpublished Master's thesis, Department of Anthropology, Sonoma State University, Rohnert Park, California.

Soil Survey Staff. 2022. Web Soil Survey. Natural Resources Conservation Service, United States Department of Agriculture. Website: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed July 2022.

Sonoma County. 1986. Sonoma County Heritage or Landmark Tree Ordinance. Available: https://sonomacounty.ca.gov/PRMD/Regulations/Comprehensive-Tree-Ordinance/.

Sonoma County. 1989. Sonoma County Tree Protection Ordinance. Available: https://sonomacounty.ca.gov/PRMD/Regulations/Comprehensive-Tree-Ordinance/.

Sonoma County – Breeding Bird Atlas. Detailed maps and accounts for our nesting birds. Project of Madrone Audubon Society. Betty Burridge, Editor.

Sonoma County General Plan. 2020. County Zoning Codes. Permitsonoma.org Accessed July 2023.

State of California Natural Resources Agency. Special Animals List, July 2022. Department of Fish and Wildlife, Biogeographic Data Branch (CNDDB).

Stein, Julie K. 2001. Archaeological Sediments in Cultural Environments. In Sediments in Archaeological Context. Edited by Julie K Stein and William R Farrand. The University of Utah Press, Salt Lake City, Utah.

Stewart, Suzanne. 1993. Upper Archaic Diversity in the Warm Springs Locality Sonoma County, California. Unpublished Master's thesis, Department of Anthropology, Sonoma State University, Rohnert Park, California.

Town, Pamela. 2023. Wildlife Assessment Guernewood Neighborhood Association Shaded Fuel Break Vegetation Management Project. Forest Ecosystem Management. June 21, 2023.

Rapp, George (Rip), and Christopher L. Hill. 2006. Geoarchaeology: The Earth Science Approach to Archaeological Interpretation (Third edition). Yale University Press, New Haven, Connecticut and London.

Russian River Historic Society. 2022. Area History. https://www.russianriverhistory.org/about- rrhs/area-history/Accessed October 2022.

University of California, Davis Soil Resource Lab. SoilWeb. Natural Resources Conservation Service, United States Department of Agriculture and University of California, Agriculture and Natural Resources. Website: https://casoilresource.lawr.ucdavis.edu/gmap/. Accessed July 2022.

U.S. Fish and Wildlife Service (USFWS). 2022. List of Federal Endangered and Threatened Species that Occur in Sonoma County, California and IPaC: Information for Planning and Consultation. Available at: https://ecos.fws.gov/ipac/ Accessed: March 2022.

Van Gosen, B.S., and Clinkenbeard, J.P., 2011, Reported historic asbestos mines, historic asbestos prospects, and other natural occurrences of asbestos in California: U.S. Geological Survey Open-File Report 2011-1188, 22 p., available at http://pubs.usgs.gov/of/2011/1188/.

Waters, Michael R. 1992. Principles of Geoarchaeology: A North American Perspective. The University of Arizona Press, Tucson, Arizona.

Western Bat Working Group (WBWG). 2022. Species Accounts and listing status.

Wickstrom, Brian P., and David A. Fredrickson. 1989. Archaeological Investigations at CA-SON-20, Santa Rosa, Sonoma County, California. Unpublished report on file at the Northwest Information Center, Rohnert Park, California, under S-002870.

Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer, and M. White, eds. 1988 – 1990. California's Wildlife. Vol. I – III. California Department of Fish & Game, Sacramento, CA.