PROJECT-SPECIFIC ANALYSIS AND ADDENDUM TO THE CalVTP PROGRAM EIR

East Bay Hills Vegetation Treatment Project

CalVTP Project I.D. Number 2022-24

Prepared for:

East Bay Regional Park District

June 2023

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TABLE OF CONTENTS

Tables

Figures

LIST OF ABBREVIATIONS

AC	Anthony Chabot
BAAQMD	Bay Area Air Quality Management District
Board	California Board of Forestry and Fire Protection
CAAQS	California ambient air quality standard
CAL FIRE	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
CLN	Conservation Lands Network
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRHR	California Register of Historical Resources
CWHR	California Wildlife Habitat Relationships
dbh	diameter at breast height
EBRPD	East Bay Regional Park District
EPA	US Environmental Protection Agency
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FRAP	Fire Resources Assessment Program
GHG	greenhouse gas
HCP	habitat conservation plans
I-	Interstate
IPaC	Information for Planning and Consultation
IPM	Integrated Pest Management
LRA	Local Responsibility Area
$MTCO_2e$/acre	metric tons of carbon dioxide-equivalent per acre
NAAQS	national ambient air quality standard
NAHC	Native American Heritage Commission
NCCP	natural community conservation plans
NOA	naturally occurring asbestos
NO_X	nitrogen oxides
NRHP	National Register of Historic Places

NWIC	Northwest Information Center
PEIR	Program Environmental Impact Report
PG&E	Pacific Gas & Electric
PM	particulate matter
	PRC [Public Resources Code
PRC	Public Resources Code
proposed project	East Bay Hills Vegetation Treatment Project
PSA	Project-Specific Analysis
PSA/Addendum	PSA and an Addendum to the PEIR
ROG	reactive organic gas
SPR	standard project requirements
SR	State Route
SRA	State Responsibility Area
TAC	toxic air contaminants
Park District	East Bay Regional Park District
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
UTV	utility task vehicle
VMT	vehicle miles traveled
WLPZ	Watercourse and Lake Protection Zones

1 INTRODUCTION

1.1 PROJECT OVERVIEW AND DOCUMENT PURPOSE

The California Board of Forestry and Fire Protection (Board) certified the Program Environmental Impact Report (PEIR) for the California Vegetation Treatment Program (CalVTP) in December 2019. The PEIR evaluates the potential environmental effects of implementing vegetation treatments throughout much of the State Responsibility Area (SRA) and portions of the Local Responsibility Area (LRA) in California. This document is a Project-Specific Analysis (PSA) and Addendum to the PEIR (PSA/Addendum). The PSA process was designed during PEIR preparation for use by many state, special district, and local agencies to help increase the pace and scale of vegetation treatment by employing California Environmental Quality Act (CEQA) streamlining tools, i.e., a within-the-scope finding based on the PSA. An Addendum to the PEIR is another CEQA streamlining tool designed to address those project components that are not within the scope of the PEIR. This PSA/Addendum comprises the joint implementation of these CEQA streamlining tools in a single document.

1.1.1 Proposed Project

Indigenous Californians were actively managing the Bay Area landscape, long before the arrival of Euro-Americans. Native Californians managed their environment through weeding, pruning, controlled burning, and in some cases, even sowing and irrigation. They employed periodic, low intensity burns to maintain a mosaic of different habitats at different stages of ecological succession. This type of landscape management, which has been referred to as ''pyrodiversity'' resulted in a rich patchwork of habitats. Current scholarship has finally started to recognize that Native Californian land management was active and resulted in highly productive environments. Burning and other practices encouraged a wide variety of plant resources such as nuts, seeds, grasses, fruits, roots, and tubers (Panich 2020).

East Bay Regional Park District (the Park District) proposes to implement vegetation treatments on up to 2,280 acres of land (East Bay Hills Vegetation Treatment Project, project, or proposed project) in Contra Costa and Alameda Counties in the East Bay Hills (Figure 1-1). The proposed treatment types (i.e., fuel breaks, wildland urban interface [WUI] fuel reduction, ecological restoration) and the treatment activities (i.e., manual treatments, mechanical treatments, prescribed burning, herbicide application, prescribed herbivory) are consistent with those evaluated in the CalVTP PEIR. Maintenance treatments would involve the same vegetation treatment types and activities used in the initial treatments.

1.1.2 Agency Role

For the purposes of the CalVTP PEIR and this PSA/Addendum, 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 Park District to comply with CEQA for the implementation of vegetation treatments that require a discretionary action by a state or local agency. The Park District is the project proponent and CEQA lead agency.

1.1.3 Purpose of This PSA/Addendum

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 CalVTP. 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).

An Addendum to an EIR is appropriate where a previously certified EIR has been prepared and some changes or revisions to the project are proposed, or the circumstances surrounding the project have changed, but none of the changes or revisions would result in new or substantially more severe significant environmental impacts, consistent with CEQA Section 21166 and CEQA Guidelines Sections 15162, 15163, 15164, and 15168. In this case, there are no changed circumstances, but the proposed revision or change in the project, compared to the PEIR, is the inclusion of areas outside of and adjacent to the CalVTP treatable landscape (see "Project Area Outside the CalVTP Treatable Landscape" below).

The PSA checklist (refer to Chapter 4, "Project-Specific Analysis/Addendum") includes the criteria to support an Addendum to the CalVTP PEIR for the project revision identified below. The checklist evaluates each resource in terms of whether the later treatment project, including the "changed condition" of additional geographic area, would result in significant impacts that would be substantially more severe than those covered in the PEIR or would result in any new impacts that were not covered in the PEIR. If a new impact arises, the checklist analysis would provide substantial evidence about whether it would be a significant or potentially significant impact. If the new impact would not be significant, it could be addressed in the addendum to the PEIR.

This document serves as both a PSA and an Addendum to the CalVTP PEIR for the Park District review and analysis under CEQA regarding the proposed East Bay Hills Vegetation Treatment Project within and outside the treatable landscape covered by the PEIR. It provides environmental information supported by substantial evidence to the Park District in its consideration of approving grant funding allocations and implementation of the work by the Park District and its contractor(s). The project-specific mitigation monitoring and reporting program (MMRP), which identifies the CalVTP 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.

PROJECT AREA OUTSIDE THE CalVTP TREATABLE LANDSCAPE

Among the criteria for determining if a treatment project is within the scope of the CalVTP PEIR is whether it is in the CalVTP treatable landscape (i.e., the geographic extent of analysis covered in the PEIR). While most of the project area would be inside, portions of the project area would extend outside of the treatable landscape described in the CalVTP PEIR. In total, these areas outside the treatable landscape encompass approximately 128 acres, out of the 2,280-acre project area; these areas are dispersed throughout the project area (refer to Chapter 2, "Treatment Description").

The CalVTP treatable landscape was created by the California Department of Forestry and Fire Protection (CAL FIRE) Fire Resources Assessment Program (FRAP) with the purpose of delineating a geographic scope for analysis pursuant to CEQA. It was created using spatial data to identify areas containing vegetative conditions suitable for treatment within SRA and LRA. These areas contained a treatable fuel type (i.e., tree, brush, grass). Then, it was determined which CalVTP treatment type (i.e., WUI fuel reduction, fuel breaks, and ecological restoration) could likely (but not exclusively) be implemented in the area. These treatment type areas were determined as follows:

- WUI Treatment Areas: The WUI fuel reduction treatments were identified in CAL FIRE-designated WUI zones within the SRA.
- Fuel Break Treatment Areas: The fuel break treatment type is the only treatment that was identified in both SRA and LRA. The fuel break treatment areas were identified along ridgelines in the SRA and LRA. Fuel breaks were also identified along roadways in the SRA and LRA outside of their historic fire regime (i.e., Condition Class 2 or 3) and within areas already identified as WUI fuel reduction treatments. A 150-foot buffer was added to each side of ridgelines and roadways.

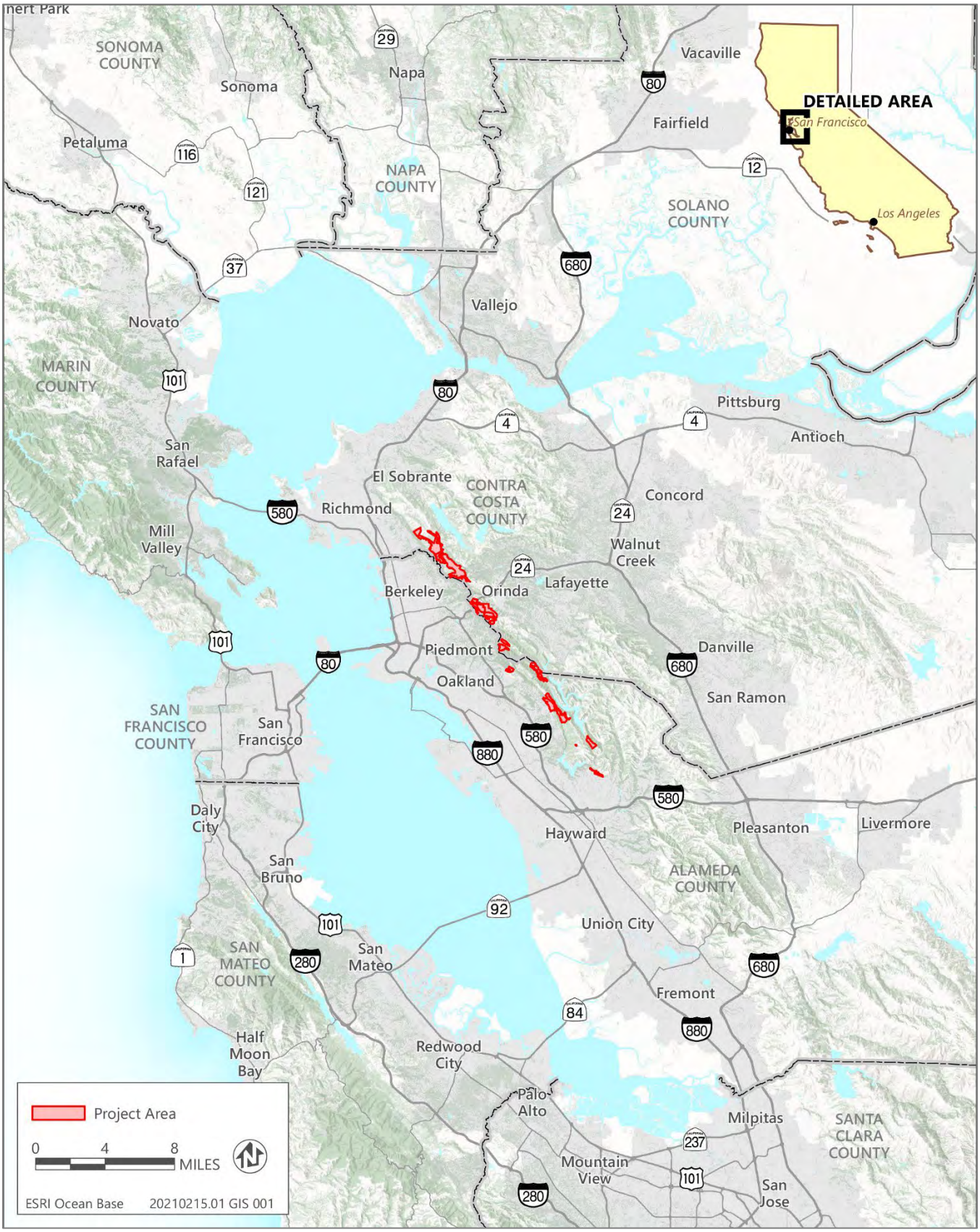
- Ecological Restoration Treatment Areas: The ecological restoration treatment areas were identified by selecting areas that were outside of their historic fire regime (i.e., Condition Class 2 or 3) in the SRA, then excluding from this any area identified as WUI.

The resulting treatable landscape is the approximately 20.3 million acres that are the mapped intersection of the three treatment types and three suitable treatable fuel types. For additional information, refer to Appendix PD-1, "Description of Treatable Landscape Modeling," in Volume II of the CalVTP Final PEIR.

Some portions of the project area extend outside of the treatable landscape in the CalVTP PEIR because of mapping anomalies or because they fell outside the criteria for mapping the fuel types or treatment types described above. The treatable landscape is digitally mapped as discrete pixels, and this method resulted in some treatable landscape areas that are shown on maps to be disjointed, rectangular, and scattered. Some areas that fall outside of the treatable landscape may be artifacts of the digital buffers that were applied around geographic and topographic features and to demarcate jurisdictional boundaries (i.e., SRA and LRA). In other locations, a more contiguous area of SRA or LRA may be outside of the treatable landscape because it falls outside the criteria for mapping the fuel types or treatment types.

For example, a portion of the treatment area in Sibley Western Hills (Figure 2-1) contains a small patch of land outside of the treatable landscape. This area was not included in the treatable landscape because it is a sparsely vegetated area classified as an "urban" vegetation type and therefore, not classified as a treatable fuel type (i.e., not classified as tree, shrub, or grass). Another example is the French Trail treatment area (Figure 2-1), which is surrounded by patches of treatable landscape and adjacent to treatable landscape. This area falls outside of the treatable landscape because it is in the LRA and did not meet the criteria for being categorized as a fuel break (i.e., the only treatment type that includes portions of the LRA). Due to these modeling criteria and mapping process, some of the areas may fall outside the treatable landscape even though they contain essentially the same landscape conditions as the areas designated as treatable landscape. But for these mapping anomalies or the fuel type, jurisdiction, or treatment type classification they fell into, these areas are otherwise substantially similar to adjacent areas included within the treatable landscape.

To determine if the areas of the proposed project outside of the CalVTP treatable landscape have essentially the same, or at least substantially similar, landscape conditions as the adjacent areas within the treatable landscape, additional review was conducted, including a reconnaissance survey to assess habitat, vegetation conditions, and potential for sensitive resources; and review of landcover data, habitat mapping, and aerial imagery. If landscape conditions are essentially the same or substantially similar, the environmental analysis in the PEIR would be applicable to these areas outside of the CalVTP treatable landscape. The following PSA and Addendum evaluates each resource in terms of whether the proposed project, including the areas outside of the treatable landscape, would result in significant impacts that would be substantially more severe than those covered in the PEIR or would result in any new impacts that were not covered in the PEIR.



Sources: Data received from the Park District in 2022.

Figure 1-1 Regional Location

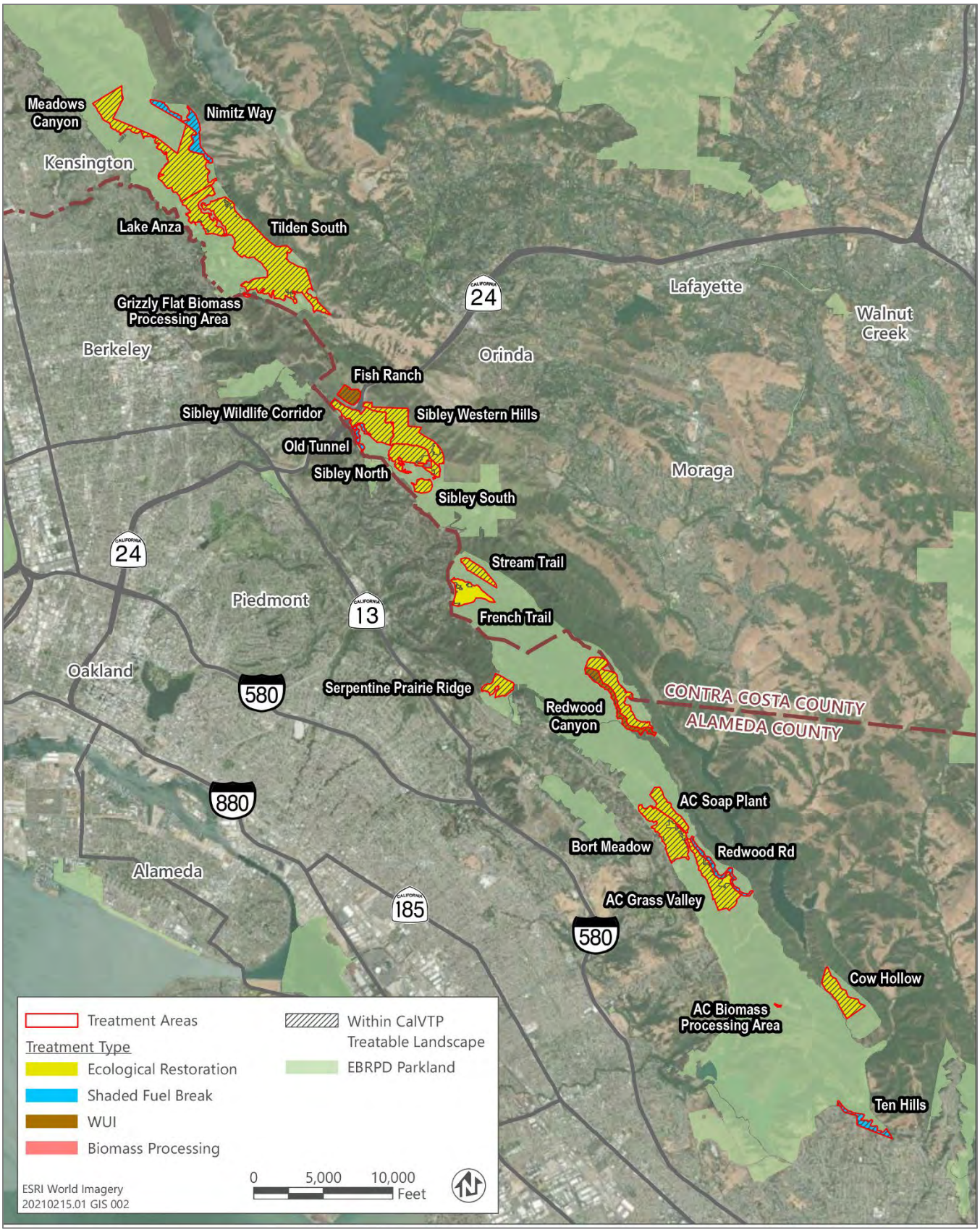
2 TREATMENT DESCRIPTION

The East Bay Hills Vegetation Treatment Project (proposed project) consists of vegetation treatments within the Park District-managed lands in the East Bay Hills (Figure 1-1, Figure 2-1). The treatments span from areas in Charles Lee Tilden Regional Park (Tilden Regional Park) in the north to areas of Lake Chabot Regional Park in the south (Figure 2-1). The CalVTP treatment types that would be implemented are fuel breaks, WUI fuel reduction, and ecological restoration. The proposed treatment activities that would be used to implement the project include manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. The proposed CalVTP treatments are shown in Figure 2-1 and summarized in Table 2-1, below, and in Attachment B, which provides additional detail on vegetation treatment objectives by treatment area and vegetation type.

Table 2-1 Proposed CalVTP Treatment Areas

Treatment Area	CalVTP Treatment Type	Treatment Area Size (acres)
Meadows Canyon	Ecological Restoration	355
Nimitz Way	Shaded Fuel Break	73
Lake Anza	Ecological Restoration	97
Tilden South	Ecological Restoration	465
Fish Ranch	WUI Fuel Reduction	32
Sibley Wildlife Corridor	Ecological Restoration	133
Sibley Western Hills	Ecological Restoration	163
Old Tunnel	Shaded Fuel Break	15
Sibley North	Ecological Restoration	101
Sibley South	Ecological Restoration	25
Stream Trail	Ecological Restoration	37
French Trail	Ecological Restoration	72
Serpentine Prairie Ridge	Ecological Restoration	48
Redwood Canyon	Ecological Restoration	118
Redwood Canyon WUI	WUI Fuel Reduction	57
Anthony Chabot (AC) Soap Plant	Ecological Restoration	59
Bort Meadow	Ecological Restoration	142
Redwood Road	Shaded Fuel Break	36
AC Grass Valley	Ecological Restoration	129
Cow Hollow	Ecological Restoration	87
Ten Hills	Shaded Fuel Break	34
Total Acres by Treatment Type		
	WUI Fuel Reduction	89
	Shaded Fuel Breaks	158
	Ecological Restoration	2,031
Total Treatment Area		**2,280**

Source: Data provided by the Park District in 2022. Treatment areas presented from north to south.



Source: Data received from the Park District in 2022; adapted by Ascent in 2022.

Figure 2-1 Project Area

2.1 PROPOSED TREATMENTS

The treatment types and activities and vegetation treatment areas proposed for implementation are described below.

2.1.1 Treatment Types

Proposed treatment types consist of fuel breaks, WUI fuel reduction, and ecological restoration. Each treatment type is described in more detail below and is consistent with the treatment types described in the CalVTP PEIR. Refer to Figure 2-1 for the location of each treatment type. Table 2-1 and Table 2-2 (refer to Section 2.1.2, "Treatment Activities") provide a summary of the treatments, and Attachment B provides additional detail on vegetation treatment objectives by treatment area and vegetation type.

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. Shaded fuel breaks are the only type of fuel break proposed by the project; nonshaded fuel breaks would not be implemented. To create shaded fuel breaks, the tree canopy would be thinned to reduce horizontal and vertical fuel continuity to prevent fire from being carried through the vegetation or up into aerial fuels (i.e., crown fires). The shade of the retained canopy would help to reduce rapid regrowth of shrubs and sprouting hardwoods. The shaded fuel breaks would also provide important control lines for prescribed fire activities. Any of the CalVTP treatment activities could be used to implement the shaded fuel breaks; however, manual and mechanical treatment activities would be the primary method of initial treatment. Fuel breaks would be implemented in the Nimitz Way, Old Tunnel, Redwood Road, and Ten Hills treatment areas (Figure 2-1). These fuel breaks would be located on ridgetops adjacent to emergency access routes or residences.

Nimitz Way Trail and Old Tunnel Road Fuel Breaks

The Nimitz Way Trail and Old Tunnel Road fuel breaks would be established and maintained (Figure 2-1). The Nimitz Way Trail fuel break would be established adjacent to the Nimitz Way Trail, a paved hiking and biking trail in the northern part of the treatment area within Tilden Regional Park. The Old Tunnel shaded fuel break is located in Sibley Regional Park adjacent to an existing road, starting at the Old Tunnel Road staging area and looping toward the boundary of private property along Grizzly Peak Boulevard in Oakland.

Dead and dying trees and shrubs that create significant ladder fuel hazards would be removed throughout the fuel break. Limbs directly over the roadway or trails would be pruned for vehicle passage to create a roadway with 15-foot vertical clearance. Within 20 feet of the edge of the established road or trail, understory trees and shrubs that contribute significantly to fire intensity would be removed to reduce surface and ladder fuels and create safe places for firefighters to stage equipment, fight wildfire, and safely evacuate members of the public. Live eucalyptus, conifers (e.g., nonnative species such as Monterey pine [*Pinus Radiata]*), and *Prunus* (i.e., plum, cherry, and other escaped cultivated *Prunus* varieties) stems up to 24 inches diameter at breast height (dbh), and other native species up to 12 inches dbh may be felled. Live native trees which are not eucalyptus, conifer, or *Prunus* species greater than 12 inches dbh may be limbed up to 8–10 feet. The completed treatment would leave a sparsely treed area without ladder fuels where native and/or mature trees would be spaced 25–35 feet apart or residual crown vegetation would be spaced 10–15 feet apart. In areas of oak woodlands, the treatment would focus on removing encroaching conifers, eucalyptus, and California bay (*Umbellularia californica*) trees to encourage protection of native oak woodland. The fuel breaks would extend 40 feet from the edges of the established road or trail; the area 20–40 feet from the edge would blend into the surrounding vegetation structure by creating a fire-resistant mosaic of grassland, shrub islands, and small stands of limbed-up trees.

Redwood Road and Ten Hills Trail Fuel Breaks

The Redwood Road and Ten Hills Trail fuel breaks would be established and maintained (Figure 2-1). The Redwood Road Fuel Break is in Anthony Chabot Regional Park along Redwood Road from Bort Meadow Staging Area south to the southern end of the Soaring Hawk Trail, in unincorporated Alameda County, close to the City of Oakland. The Ten Hills Trail fuel break is located adjacent to a trail along the southern boundary of Lake Chabot Regional Park from Redwood Road to Hillsborough Drive in Castro Valley.

Dead and dying trees and shrubs that create significant ladder fuel hazards would be removed throughout the fuel break. Limbs directly over the roadway or trail would be pruned for vehicle passage to create a roadway with 15-foot vertical clearance. Within 20 feet of the edge of the established trail or road, understory trees and shrubs that contribute significantly to fire intensity would be removed to reduce surface and ladder fuels and create safe places for firefighters to stage equipment and fight wildfire. Live eucalyptus, conifers, and Prunus (i.e., plum, cherry, and other escaped cultivated Prunus varieties) stems up to 24 inches dbh, and other native species up to 12 inches dbh may be felled. Live native trees which are not eucalyptus, conifer, or Prunus species greater than 12 inches dbh may be limbed up to 8–10 feet. The completed treatment would leave an open-canopied area without ladder fuels where native and/or mature trees would be spaced 25–35 feet apart or residual crown vegetation would be spaced 10–15 feet apart. In areas of oak or maple woodlands, the treatment would focus on removing encroaching conifers, eucalyptus, and California bay trees to encourage protection of native vegetation. The fuel breaks would extend 40 feet from the edges of the established road or trail; the area 20–40 feet from the edge would blend into the surrounding vegetation structure by creating a fire-resistant mosaic of grassland, shrub islands, and small stands of limbed-up trees.

WILDLAND-URBAN INTERFACE FUEL REDUCTION

The WUI fuel reduction treatment type would be implemented in CAL FIRE-designated WUI areas, which is the zone of transition between wilderness or parkland areas and land developed by human activity. WUI fuel reduction would be implemented in the Fish Ranch and Redwood Canyon treatment areas (Figure 2-1). WUI fuel reduction treatment areas within the proposed project area include locations near paved roadways, developed and disturbed areas (e.g., freeway offramps and onramps), commercial properties, and residential structures. WUI fuel reduction treatments would be designed to reduce fuel loads to slow or prevent the spread of fire between wildlands and structures, and vice versa. WUI fuel reduction would directly benefit communities and assets at risk, serving as a zone to slow or stop wildfires before they reach those communities or assets. WUI fuel reduction treatments would remove declining, dense understory vegetation; ladder fuels; and nonnative and/or invasive trees and stems up to 24 inches dbh to promote a healthier residual stand following treatments. Dead and declining trees, or structurally unsound trees of any diameter, may be removed. Individual hazard trees should be assessed by park staff and treated appropriately through the Park District's hazardous tree program. Where feasible, treatment would retain at least two standing snags per acre with a preference for the largest snags that exhibit the form and decay characteristics favored by wildlife. Habitat quality would be enhanced through WUI fuel reduction where existing habitat has been degraded due to invasive species encroachment or the accumulation of fuels.

ECOLOGICAL RESTORATION

The ecological restoration treatment type is proposed within 15 treatment areas totaling 2,031 acres, as shown in Table 2-1 and Figure 2-1. Ecological restoration treatments would seek to protect and restore native ecological functions, using a combination of management practices to improve native habitats, recreate healthy forest and woodland conditions, and create a natural landscape more resilient to wildfires. Ecological restoration treatments would be designed to improve overall forest, woodland, shrubland, and grassland health and provide watershed benefits by supporting native habitat structure that is resilient to future natural disturbances and climate change. A healthy, functioning natural landscape would help reduce the impacts of climate change by increasing the rate of carbon sequestration and storage and reducing the risk of carbon stock loss due to catastrophic wildfire. Forest health improvement through ecological restoration would protect aquatic resources, improve hydrologic function of affected watersheds, and provide important habitat for native wildlife.

In forested areas, ecological restoration treatments would focus on thinning smaller diameter trees (e.g., eucalyptus or Monterey pine under 12 inches dbh and multi-stem eucalyptus, with a target spacing of 20–35 feet for retained trees) from overstocked forest units, as well as removing resprouts during maintenance treatments (see Section 2.2 "Treatment Maintenance") to promote the continued growth of mature trees and a healthy forest structure, and reduce vertical and horizontal fuel continuity (e.g., reduce dead material in the understory and canopy, prune lower branches of retained trees). In oak-bay woodlands, trees not known to be components of oak woodlands up to 8 inches dbh may be removed and one-third of the trees less than 8 inches dbh would be retained to allow a range of size categories. In oak woodland ecological restoration areas, bay trees may be removed to eliminate vectors for transmission of the Sudden Oak Death pathogen (*Phytophthora ramorum*). In ecological restoration treatment areas, where feasible, treatment would retain at least two standing snags per acre with a preference for the largest snags that exhibit the form and decay characteristics favored by wildlife. Additionally, woody debris would be retained, where feasible, in strategic locations to maintain forest floor complexity while reducing fuel connectivity. When masticating, operators would minimize disturbance to down wood where feasible, only moving large pieces of woody debris (e.g., greater than 12 inches diameter) when necessary to reduce fire behavior or gain access to larger portions of treatment areas, with a per acre retention target of 1–4 downed logs per acre. Forest understory vegetation would be maintained in ecological restoration areas consistent with the understory descriptions in the Manual of California Vegetation (Sawyer et al. 2009).

Areas of shrubland would be restored to historic vegetation composition and structure by reducing shrub density consistent with CalVTP PEIR specifications, to enhance habitat values and function for native species, creating a mosaic of shrubs and grassland. Coastal scrub and maritime chaparral habitat would be enhanced where habitat potentially suitable for or supporting sensitive species is present. In general, vegetation treatment would be conducted in shrublands to retain approximately 30 percent to 50 percent of shrub cover in islands through mosaic thinning or patch retention thinning.

The CalVTP PEIR and California Code (PRC [Public Resources Code] Section 4483) prohibit type conversion of coastal sage scrub and chaparral vegetation types. CalVTP PEIR SPR BIO-5 requires minimum retention of 35 percent relative cover of existing shrubs and associated native vegetation and reduction of no more than 20 percent from baseline density in coastal sage scrub and chaparral habitats. See Impact BIO-3 in Section 4.5, "Biological Resources" below for additional discussion of SPR BIO-5. Pursuant to SPR BIO-5, a different percent relative cover can be retained if the project proponent demonstrates with substantial evidence that alternative treatment design measures would result in effects on the habitat function of coastal sage scrub and chaparral that are equal to or more favorable than those expected to result from the original retention standards. For treatments within coastal sage scrub or chaparral vegetation types, SPR BIO-5 would be implemented, and type conversion of these vegetation types would not occur. The retention standards in SPR BIO-5 would not be required for other shrub-dominated habitats, such as coyote brush (*Baccharis pilularis*) scrub.

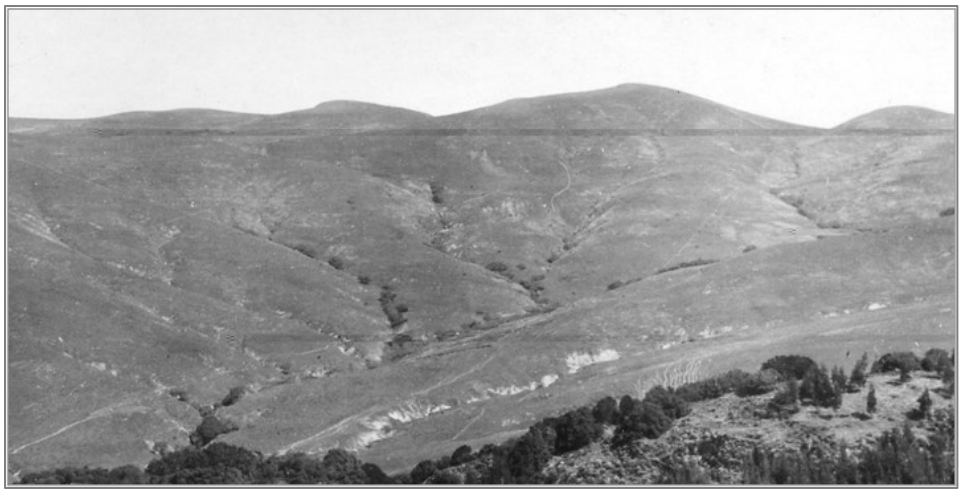
Grassland habitat in several treatment areas is in an altered condition and is experiencing loss of function due in part to a lack of historic disturbance regimes (e.g., grazing, burning). Shrubs, such as coyote brush and French broom (*Genista monspessulana*), are encroaching into grassland habitat and these grasslands are in the process of converting from grassland to shrubland. Under California Native American land management practices, these areas likely supported vegetation consistent with coastal prairie (Holland 1986) or perennial grassland (California Wildlife Habitat Relationships [CWHR] System) types. In more recent history, these areas were annual grassland maintained by disturbance such as wildfire and grazing. The lack of fire and grazing in the grasslands is allowing nonnative conifers, other trees, and pioneering shrubs (e.g., coyote brush and French broom) to establish in historic grassland locations. Succession towards a shrub and tree dominated community is a known threat to grasslands throughout California. This succession is directly observable in the trees next to mature forest and shrub patches expanding into the grasslands and not associated with other coastal scrub species. A review of aerial photos of the site (see Figure 2-2 through Figure 2-4 below), beginning in the 1930s, shows open grasslands being invaded by shrubs and trees since wildfire has been excluded and livestock grazing discontinued.

In these areas that have traditionally been grassland and changed to an altered condition, the goal of treatment would be grassland restoration. After treatments, treatment areas would be assessed for percent cover of grassland

increase over time, and species composition monitoring may be conducted to understand which plants are occupying the restored sites.

Tilden South Treatment Area

Most parts of the East Bay Hills, including the area of Tilden Regional Park, were historically maintained as open grasslands with a mosaic of shrubs and trees, first by California indigenous (or Native) peoples, then by the Spanish colonists, and then by the ranching landowners of the area using fire and grazing. Edwards (2002) stated that, "The open grassland that dominated Tilden before grazing exclusion in 1934 has been thoroughly replaced by coyote brush in a large area northward and westward from Inspiration Point." Fire suppression and large-scale planting of nonnative trees also contributed to this dramatic change in habitat conditions (Figure 2-2). Currently, nonnative, overstocked stands of species such as eucalyptus and nonnative conifers (e.g., Monterey pine) form a closed canopy, sheltering understory shrubs, tall grasses, and a large amount of accumulated vegetation debris. These conditions would likely result in wildfires of a much greater intensity than would otherwise occur under conditions with more regular disturbances (e.g., periodic burning, grazing). Treatment under the proposed project would remove the nonnative trees and reduce shrub cover to allow for a greater amount of annual grassland, and would restore shrubland composition to traditional conditions, while retaining vegetation composition and structure required for sensitive species, sensitive natural communities, and coastal sage scrub and chaparral communities, as required by the CalVTP PEIR.



Source: Photograph provided by the Park District in 2022.

Wildcat Ridge, Tilden Regional Park, 1930

Source: Photograph provided by the Park District in 2022.

Tilden South Treatment Area, Looking at Lower Big Springs Trail, 1975

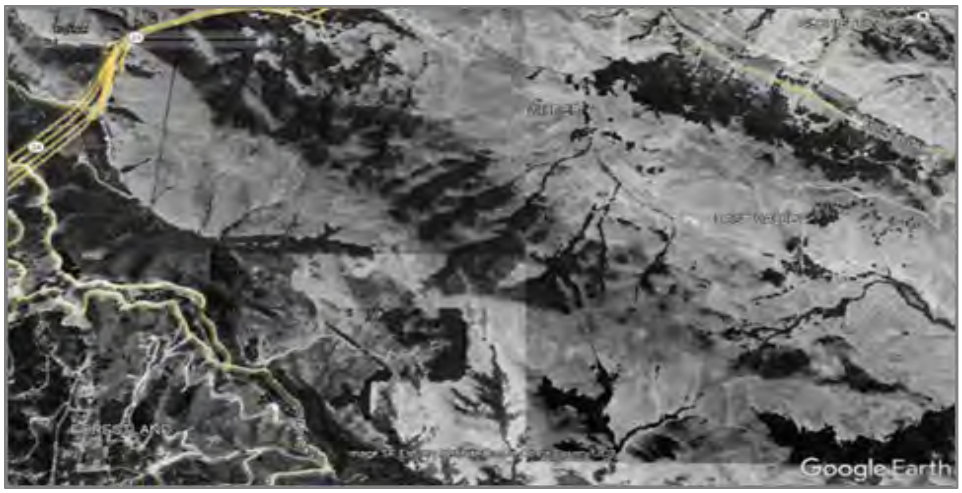
Source: Photograph provided by the Park District in 2022.

Tilden South Treatment Area, Looking at Lower Big Springs Trail, 2022

Figure 2-2 Representative Photographs of the Tilden South Treatment Area

Sibley Western Hills Treatment Area

Like the Tilden South treatment area, the Sibley Western Hills Treatment Area was historically grazed and burned for the past two centuries. More recently, post-1930s land uses that affected vegetation cover included planting of nonnative trees and shrubs, particularly eucalyptus and Monterey pine, as well as fire suppression, road construction and relocation, water tank siting, logging, fuel break construction, right-of-way clearance, and quarrying operations; all of which effectively allowed encroachment of shrubs into areas historically characterized by perennial grasslands. Today, coyote brush, poison oak (*Toxicodendron diversilobum*), and other shrubs have become established in the disturbed grassland areas, reducing grassland cover (Figure 2-3). Additionally, oak and California bay woodlands are expanding in and out of the drainages in the Sibley Western Hills Treatment Area, further reducing open grassland areas. As a result of these vegetation changes, fuel type and fuel loading have changed into a less manageable state from a fire protection perspective, with more contiguous fuels and fewer and smaller openings. All treatment activities (refer to Section 2.1.2, "Treatment Activities") may be used for fuel management. Prescribed herbivory would be implemented to help maintain initial treatments and current grasslands, and prescribed burning activities would be implemented to enhance grassland areas by encouraging germination and recruitment of native perennial grassland species.



Source: Photograph provided by the Park District in 2022.

Sibley Western Hills Treatment Area and Vicinity, 1938

Source: Photograph provided by the Park District in 2022.

Sibley Western Hills Treatment Area and Vicinity, 2020

Source: Photograph provided by the Park District in 2022.

Sibley Quarry, Looking Southeast from Grizzly Peak Boulevard, 1973

Figure 2-3 Representative Photographs of the Sibley Western Hills Treatment Area

AC Soap Plant, Bort Meadow, and AC Grass Valley Treatment Areas

The Anthony Chabot (AC) Soap Plant, Bort Meadow, and AC Grass Valley treatment areas were historically grazed and burned. Native herbaceous communities throughout the region have been converted to annual grasslands due to factors such as drought cycles, historic heavy grazing use, and later removal of grazing. Grazing stopped in the 1950s, after which encroachment of shrub species, primarily coyote brush, into the grasslands began (Figure 2-4). Shrub encroachment has led to shading of native grasses and forbs and establishment of nonnative species, which has rendered the land less manageable from a wildfire protection perspective, with more contiguous fuels and fewer and smaller openings. Around the year 2000, grazing was reintroduced to the treatment areas where cattle grazing historically occurred; however, the grazing contract ended in 2019. All treatment activities (refer to Section 2.1.2, "Treatment Activities") may be used for fuel management. Prescribed herbivory would be implemented in these areas to help maintain initial treatments and existing grasslands, and prescribed burning activities would be implemented to enhance grassland areas by encouraging germination and recruitment of native perennial grassland species.

Source: Photograph provided by the Park District in 2022.

AC Grass Valley Treatment Area, 1938

Source: Photograph provided by the Park District in 2022.

AC Grass Valley Treatment Area, 2012

Figure 2-4 Representative Photos of the AC Grass Valley Treatment Area

2.1.2 Treatment Activities

The proposed vegetation treatment activities are manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. Each treatment activity may be used independently or in combination with any of the other treatment activities throughout all treatment areas. Although all activities could be used anywhere within the project area (2,280 acres), it is extremely unlikely that all treatment activities would be used on all 2,280 acres, because only one or two activities would typically be needed in a given area for adequate treatment. The estimated total acreage for every treatment activity of up to 2,280 acres (see Section 3, "Environmental Checklist," below) is therefore an overestimate. This all-treatment-activities approach allows flexibility for treatments to be located in response to real-time, on-the-ground conditions during implementation while including potential impacts in the entire project area in the PSA/Addendum. In practical application, the treatment design and the required SPRs and mitigation measures (Attachment A) would limit the area where each treatment activity would be implemented. For example, SPR GEO-6 requires that burn piles do not occupy more than 15 percent of the total treatment area. Other requirements such as SPR BIO-4, BIO-5, GEO-7, and HYD-4 and Mitigation Measure BIO-2a and BIO-3a limit treatment activities inside Watercourse and Lake Protection Zones (WLPZ) and sensitive habitats and on steep slopes.

Treatments are anticipated to begin in 2023. Treatments would be limited to daylight hours, with the exception of prescribed burning activities and prescribed herbivory, which would occur around the clock during the days implemented. Additionally, some specialized biomass processing technologies may occur around the clock during periods when weather and air quality conditions allow. Treatments may occur year-round with adherence to CalVTP PEIR SPRs and mitigation measures, which may include limited operating periods. All treatment activities using noise-generating equipment would typically be limited to 7:00 am to 7:00 pm on Monday through Friday and 8:00 am and 5:00 pm on Saturdays and Sundays. Treatment activities are described in more detail below and summarized in Table 2-2. The proposed treatments are consistent with the treatment activities covered in the CalVTP PEIR.

Attachment B, which includes Table B-1 and Table B-2, provides additional detail on vegetation treatment objectives and provides descriptions of the vegetation types used in this PSA. Table B-1 and Table B-2 provide treatment objectives by treatment area and by vegetation type, respectively; list the current and desired vegetation communities within each proposed treatment area; and describe each vegetation type. This information would be used to assist in detailing the general prescriptions to be implemented in the treatment areas to achieve the Park District's objectives for initial treatments and maintenance treatments.

Table 2-2 Proposed CalVTP Treatment Activities

Treatment Activity	Equipment Used for Treatments	Typical Duration of a Treatment
Manual Vegetation Treatment (cutting, clearing, piling, planting)	Hand tools, chainsaws, line trimmers, loppers, hand saws, brush cutters	1 day to 6 months
Mechanical Vegetation Treatment (cutting, mastication, chipping)	Mowers, chippers, tractor/skidder, feller-buncher, masticators	1 day to 6 months
Prescribed Burning -Broadcast Burning	Fire apparatus (e.g., engines, 4x4 pickup trucks), water truck, UTV, chainsaws, hand-held ignition devices, hand tools	1 day to 1 week
Prescribed Burning - Pile burning	Fire apparatus, water truck, UTV, chainsaws, hand-held ignition devices, hand tools	1 day to 1 week
Specialized Biomass Processing Technologies	Carbonator, air curtain burner, or gasifier and forwarders, log loaders, or log trucks	1 day to 6 months
Herbicide Application (stump application, targeted spray)	Backpack sprayers, UTV with sprayer/reservoir tank	1 day to several weeks
Prescribed Herbivory	Goats, sheep, fencing, herding animals (i.e., dogs)	1 day to 7 days

Note: Equipment used is a representative example of the types of equipment that may be used. Not all equipment is required for all cases.

ATV = All-terrain vehicle; UTV = Utility task vehicle

Source: Information provided by the Park District in 2022.

MANUAL VEGETATION TREATMENT

To implement manual treatments, crews of approximately 8–20 members would use hand tools and hand-operated power tools, including chainsaws, hand saws, weed whippers, brush cutters, and/or loppers to cut, clear, and/or prune trees, grasses, herbaceous vegetation, ladder fuels, and woody shrubs and increase space between trees. Up to four crews could be working simultaneously across the project area. Typically, manual treatments would require several days to several months to complete, depending on the treatment size, steepness of terrain, and type and density of vegetation.

In annual grassland habitat areas, manual vegetation treatment would consist of weed-whipping to reduce fuels, using a mulching style cut. This treatment would be used for small areas due to cost and effort. Manual vegetation treatment may be the preferred treatment method in some areas because it would minimize soil disturbance and target specified plants. For example, manual treatment may be effective for selective pruning and development of desired spacing in scrub habitats, but may not be cost-effective over large treatment areas. Manual treatment may be the only viable treatment near pallid manzanita (*Arctostaphylos pallida*) or other special-status plant species.

In forested habitats, including nonnative coniferous forest, eucalyptus forest, oak-bay woodland forest, redwood forest, and riparian woodland, manual treatments are generally effective for removing litter and shrubs from below trees, cutting and removing lower branches and dead limbs, treating basal sprouts, and conducting other treatment actions prior to prescribed burning to remove debris. These treatment methods may be used to selectively thin stands by removing smaller trees in well-established stands, and thin stands of hazardous trees (i.e., dead trees or flammable species) on sites too steep for mechanical equipment use or at sites with other special considerations. Routes planned for removing cut trees would be planned to minimize potential adverse impacts.

MECHANICAL VEGETATION TREATMENT

Mechanical vegetation treatments would primarily include mowing, tree removal using feller-bunchers, mechanical yarding, mechanical cutting and masticating/mulching, and chipping or mulching biomass from treatment activities. Crews of approximately 5–20 members would implement treatments using equipment including mowers, feller-bunchers, tractors/skidders, chippers, and masticators. Up to four crews may operate simultaneously across the project area. Typically, mechanical treatments would require several days to several months to complete.

Mechanical vegetation treatment would be used for larger areas and fields (where prescribed herbivory is not implemented) with less than 40 percent grade and limited obstacles (e.g., stumps, large rocks), depending on soil type and equipment type. Disking/tilling would be avoided because it promotes invasive plant propagation and soil erosion. Felling operations and routes planned for removing cut trees would be planned to minimize any potential adverse impacts on soils and retained vegetation.

Mechanical vegetation treatment would not be used to remove entire plants or disturb root balls in chaparral and coastal scrub habitats. Mechanical treatments would not generally be used in oak-bay woodland or redwood forest areas because the numerous tree trunks make placement and maneuverability of equipment difficult, but mechanical treatments may be used to selectively clear encroaching shrubs at the margins of native forests or remove material generated by manual treatment. Mechanical treatments would not generally be used for vegetation treatment in riparian woodlands because the dense nature of riparian woodlands could inhibit equipment movement and effectiveness, and mechanical treatments carry a higher risk of erosion, runoff pollution, and other adverse impacts on riparian areas.

PRESCRIBED BURNING

Prescribed burning is the intentional application of fire to vegetation under specified conditions of fuels, weather, and other variables. Two types of prescribed burning would be used under the proposed project, pile burning and broadcast burning (also known as under burning), as described below in more detail.

Prescribed burning would be conducted by trained fire management personnel only. Prescribed burning would require between approximately 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 would include water trucks, fire apparatus, 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. EBPRD has an active prescribed burning program where it conducts burns using its personnel and equipment with support and cooperation from other fire protection agencies.

Timing is an important factor in the use of this treatment method because of variability in weather conditions as well as wildlife and botanical considerations. Additionally, timing plays an important role in the response of vegetation to burning. Fuel moisture content and weather conditions must be determined to assess if the targeted area falls within the burn prescription and would safely meet the burn objectives. Burning is permitted only on days determined to be permissible by the Bay Area Air Quality Management District (BAAQMD). There are typically more permissive burn days available in the spring and early summer when atmospheric conditions conducive to smoke dilution and dispersion are more common.

Broadcast Burning

Broadcast burning would be used to burn understory vegetation to promote forest health and native flora and reduce biomass and fuel loading in grassland, woodland, and/or forest vegetation. Pretreatment of vegetation using mechanical/manual activities to remove biomass or herbicide application may occur in areas proposed for understory burning. Broadcast burning would not occur during periods of high fire danger but largely during the spring, fall, or winter seasons when relative humidity and fuel moisture only allow low intensity fire to have a beneficial effect and consume desired percentages of surface fuels with little risk of uncontrolled spread. Broadcast burning may require the construction of new control lines or enhancement of existing control lines using manual treatments, primarily through mowing or hand tools. Wherever possible, existing roads and trails, wet-lines (soaking strips of grass with water and igniting the adjacent dry grass), or changes in vegetation type would be used for containment. Understory burning is often alternated in a cycle with other methods.

Broadcast burning in the summer or early fall is known to favor native plants. Broadcast burning may also be conducted in foggy periods using fine grassy fuels to carry the fire; however, results are dependent on fuel moisture and composition. Sowing native plant seed into the ash or during the following fall season may be implemented to further advance restoration of native species.

Because of the high fuel loads in maritime chaparral and coastal scrub habitats, and the relative proximity of houses and other structures, broadcast burning in scrub habitats would require potentially large-scale fire surrogate treatments to prepare for burns. Burning chaparral after nearby/adjacent grass has grown to at least 2 inches in height would help ease concern about fire control as the adjacent green grassland is not likely to ignite.

Broadcast burning can be effective for removing litter build-up and understory shrubs in forested habitats. However, broadcast burns may require pretreatment through other methods (e.g., manual treatment, mechanical treatment) to prepare forested areas prior to burning to ensure the safe use of this technique and to prevent crowning. In nonnative coniferous forest and eucalyptus forest, intermixed oaks and bays and other desirable species would be protected from unacceptable crown damage during broadcast burns in mature forests. Low intensity broadcast burns are effective for removing litter build-up in forested areas. Monterey pine litter is generally easy to burn, and fire is unlikely to spread quickly when surrounding grasses are green. Burning in eucalyptus stands produces more seedlings and sprouting, however, and is therefore not a desirable treatment method where the intent is to restore the vegetation over time to an oak-bay woodland or grassland.

Broadcast burning is not likely to be implemented in riparian woodlands due to their high moisture content and relative inability to burn efficiently. Prescribed broadcast burns may back into riparian areas to largely self-extinguish in the wetter fuels, where feasible, to obviate cutting a control fire line to contain the broadcast burn.

Pile Burning[1]

Biomass from manual and mechanical treatments would be piled using equipment (e.g., skid steer, tractor, excavator) or hand crews gathering and piling material by hand to be burned appropriately. Typically, equipment with a brush rake may be used to reduce soil displacement and create "clean" piles. Pile burning would occur in cleared understory or in areas with little to no live overstory, including areas that have experienced previous wildfire. Burn piles would not occupy more than 15 percent of the total treatment area, as required by SPR GEO-6 of the CalVTP PEIR. Burn sites would be located at least 100 feet outside of riparian habitat.

Pile burning following careful manual treatments may be implemented in maritime chaparral and coastal scrub and could enhance propagation of pallid manzanita and other desirable obligate seeders. If pile burning is used in shrub habitat, fire may be allowed to creep between piles in previously treated areas so that low-intensity fire may further promote native plant regeneration. Generally, pile burning would be used to remove dead limbs or other materials once gathered through manual treatment or mechanical treatment methods.

In place of pile burning in some areas, the Park District would use specialized biomass processing technologies[2] (e.g., air curtain burner, carbonator, gasifier) for biomass disposal to sequester carbon for soil amendments, reduce the production of smoke particles, and reduce greenhouse gas emissions released into the atmosphere to the extent feasible. Refer to Section 2.1.3, "Biomass Processing," Section 4.3, "Air Quality," Section 4.7, "Greenhouse Gas Emissions," and Section 4.12 "Noise," for additional information related to these technologies.

HERBICIDE APPLICATION

Herbicides would be used pursuant to the direction of the Park District's Integrated Pest Management (IPM) Specialist using existing pest control recommendations to control vegetation that threatens the native biodiversity and/or increases wildfire hazards. Incipient invasive plant and noxious weed infestations may be treated to prevent their establishment. Consistent with the definitions applied in the CalVTP PEIR, invasive species means 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 occasional use of herbicides to treat invasive plant species (e.g., stinkwort [*Dittrichia graveolens*]), targeted native plants (e.g., coyote brush encroaching into areas historically characterized by grasslands), and to control regrowth of undesirable tree species (e.g., recruiting invasive trees or resprouting California bay in oak woodlands) may be implemented to promote native biodiversity and protect existing native trees that are vulnerable to Sudden Oak Death.

Herbicides with the following active ingredients that may be applied consist of those listed below, which were considered for use in the CalVTP PEIR:

- Clopyralid (monoethanolamine salt);
- Glyphosate (isopropylamine salt, potassium salt, dimethylamine salt, and diammonium salt);
- Imazapyr (isopropylamine salt);
- Indaziflam; and
- Triclopyr (butoxyethyl ester, triethylamine salt, and choline salt[3]).

[1] Pile burning is a mechanism to consume biomass; the impact analysis in the CalVTP PEIR considers pile burning under prescribed burning to account for similar impacts as broadcast burning, which is also considered under prescribed burning. Similarly, mastication and chipping are biomass processing methods that are have similar impacts to and are considered under mechanical treatments.

[2] Biomass processing technologies have been designed to consume biomass quickly and efficiently with a substantial reduction in smoke compared to pile burning (refer to additional information in Section 4.3, "Air Quality" and Section 4.7, "Greenhouse Gas Emissions"). Mitigation Measure GHG-2 in the CalVTP PEIR requires project proponents to implement feasible methods, including the use of air curtain burners, carbonators, and gasifiers, to reduce the greenhouse gas (GHG) emissions from pile burning.

[3] The herbicide assessment in the CalVTP included an initial evaluation (PEIR Appendix HAZ-2), and an updated evaluation with updated information studies and reports since the initial evaluation was peer-reviewed (PEIR Appendix HAZ-1). This information included the United States Environmental Protection Agency (EPA) 2016 publication, *Triclopyr Human Health Risk Assessment for Petition to Amend Tolerance*

Only ground-level application would occur using paint-on application, backpack and power sprayers on foot, or downward-pointed spray tubes mounted on small utility task vehicle (UTV); no aerial spraying of herbicides would occur. The following herbicide application techniques would primarily be implemented for the proposed project:

- Cut Stump Application. To maximize the efficacy of treatment, the tree would be cut leaving a stump not more than 4 inches in height above soil surface and the cut surface of the stump would be treated with an herbicide within minutes of the cut. The herbicide would be hand painted or sprayed onto the exposed cambium (zone of living transport tissue) layer of the tree. The herbicide is translocated to the roots and disrupts the transportation of nutrients and water, causing the plant to die.
- Basal Bark Application. This treatment consists of spraying the herbicide via a handheld sprayer at very low pressure to the lower 12 to 15 inches of the resprout. This application method permits the operator to selectively treat resprouts without injury to adjacent vegetation and is particularly effective on resprouts less than 6 inches in diameter.
- Foliar Application. This treatment consists of applying selective or non-selective post-emergent herbicides directly to the leaves or stems of plants to be absorbed and carried throughout the plant to affect control. The herbicide is translocated to the roots and disrupts the transportation of nutrients and water, causing the plant to die. This method is widely used to control annual and perennial herbs and woody shrubs.

Direct manual application of herbicide may be used to control invasive and/or nonnative species and to eliminate seedlings or resprouts after cutting, such as for eucalyptus or other nonnative species seedlings. In eucalyptus forest, cut-stump herbicide application would be conducted immediately following tree removal. Follow-up herbicide treatments may be needed to address resprouting following tree removal. Monitoring of plant response and implementing additional maintenance treatments (see Section 2.2 "Treatment Maintenance") are critical to prevent stump sprouting. Herbicide treatment effectiveness is dependent on the type of herbicide and application practices utilized. Chemical treatment methods would be largely avoided in riparian woodland areas to reduce potential adverse environmental impacts that may result from their use; only chemicals registered by the state for use in aquatic environments would be considered for spot application in these areas.

Herbicide treatments may include the following staff and equipment: 1–10 person crews, a UTV with a sprayer/reservoir tank, and backpack sprayers. Herbicide application may occur independently or simultaneously with other treatment activities. Herbicide application would comply with the US Environmental Protection Agency (EPA) label directions, as well as California Environmental Protection Agency and California Department of Pesticide Regulation label standards. Glyphosate, triclopyr, and imazapyr are subject to the California Red-Legged Frog Injunction (Center for Biological Diversity v. US EPA, 2006, Case No. 02-1580-JSW), and therefore, specific application requirements apply in areas subject to the injunction. All herbicide applications would be performed by certified and licensed pesticide applicators in accordance with all local, state, and federal regulations. The least impactful method would be used at any given site.

PRESCRIBED HERBIVORY

Prescribed herbivory (also known as "targeted grazing") is the use of domestic livestock, in this case sheep and goats, to accomplish specific and measurable vegetation management objectives. Objectives may include removing herbaceous biomass (e.g., fine fuel loads) and woody biomass; reducing populations of specific plant species; slowing the re-establishment of shrubs on ungrazed, burned, or mechanically thinned sites; and improving plant community structure for wildlife habitat values. Sheep or goats would be used for prescribed herbivory, depending on the target treatment area and goals. Animal type used would be dependent on the site conditions, vegetation community being

Expressions to Include Triclopyr Choline Salt, and Petition to Remove Grazing Restrictions for Dairy Cattle. The updated assessment in Appendix HAZ-1 found that six of the herbicides proposed for use under the CalVTP, including triclopyr, have new or updated information; however, the updated information does not alter the characterization of toxicity or effects provided in Appendix HAZ-2. Thus, the review of updated information contained in the human health assessment for choline salt formulation of triclopyr did not change the evaluation contained in Appendix HAZ-2 for triclopyr. The analysis of effects from triclopyr in the CalVTP PEIR is based on Appendix HAZ-2, and therefore the analysis in the PEIR is applicable to the choline salt formulation.

targeted, and dietary preferences of the grazing animal. All prescribed herbivory conducted under the proposed project would be within seasonally appropriate periods based on vegetation type and objectives (refer to Attachment B for additional detail), and excluded from certain areas, to protect sensitive species, like pallid manzanita (*Arctostaphylos pallida*).

Cattle grazing is an existing activity and conversation tool that is ongoing within some of the treatment areas for natural resources purposes, such as maintaining grasslands, enhancing wildlife habitat, and reducing fine fuel loads. Cattle grazing is not included in the proposed project because cattle grazing is already occurring on some of these properties, and the practice would not be expanded or changed from the existing condition.

A herder, fencing, mineral block, and/or a watering site may be required to keep the grazing animals within the desired area; typically, professional herders or portable electric fencing would be used during prescribed herbivory treatments. Herds may be moved as often as every 1 to 7 days and one to two workers would be required on average to implement this treatment activity. Control of livestock movement and prevention of the impacts of overgrazing is critical for the successful use of this treatment method. Monitoring would be conducted by qualified personnel (e.g., a licensed Certified Rangeland Manager or designee) to determine when utilization and fuel load objectives are attained so that grazing animals are removed in a timely manner.

Prescribed herbivory is nonselective and therefore is not recommended for sensitive habitat areas or areas potentially containing special-status plant species or cultural resources areas. Prescribed herbivory is not considered effective for use in eucalyptus forest to control eucalyptus establishment and resprouts, but is effective at reducing flashy fuels and brush intrusion within mature eucalyptus stands. Any prescribed herbivory in forested habitat that targets understory materials would include protection measures for selected native understory vegetation to prevent girdling, trampling, and browsing on special-status species. Forest understory vegetation would be maintained in ecological restoration areas consistent with the understory descriptions in the Manual of California Vegetation (Sawyer et al. 2009). Prescribed herbivory would generally not be implemented in riparian woodlands or redwood forests and may only be used along the margins of these areas. Prescribed herbivory would be confined to the dry season only, and exclusion zones consistent with CalVTP PEIR specifications (e.g., SPR HYD-3 and Mitigation Measure BIO-4) around aquatic habitats would be created to minimize potential impacts on these areas from prescribed herbivory activities.

Sheep

Sheep eat both forbs and grasses, will graze steeper slopes, and will eat shrubs. Their herding instinct allows prescribed herbivory without the installation and maintenance of fences but requires that a shepherd and trained, professional dogs are present. Sheep grazing requires that drinking water sources be present, which would be provided through hauled water tanks or on-site developed livestock water sources (troughs). A combination of sheep and goats can be a viable option when a mixture of grass, noxious weeds, and shrubs are present in the area to be treated.

Goats

Goats prefer to browse on woody vegetation (e.g., tree leaves, twigs, vines, shrubs) and will eat materials up to 6 feet above the ground. This grazing pattern creates a desirable vertical separation between the canopy and ground cover but is best used in areas with low numbers of plants intended for retention, because goats will indiscriminately damage most plants. Goat grazing is also preferable in areas of steeper terrain, where other grazing animals are less suited for the topographic conditions and are therefore less effective in grazing to achieve the desired vegetation management results.

Portable electric fences would be used to help control the herd and the outcome of their grazing. Measures may also be taken to prevent girdling of small trees that can result from the goats browsing on tree bark. Herd movement has the advantage of breaking off dead material in a stand as well as punching a humus layer into the soil (if the ground is somewhat moist) and thereby removing available fuel.

2.1.3 Biomass Processing

Biomass created by the proposed project would be processed and disposed of by several means. Vegetative biomass would be retained on-site where permissible, processed using prescribed burning or biomass processing technologies on-site, or hauled off-site to a biomass processing area or facility. Biomass processing of vegetation treated through manual or mechanical activities would be implemented by habitat type following the general recommendations in Table 2-3.

Table 2-3 Biomass Processing Activities Based on Habitat Type

Habitat Type	Manual Treatment	Mechanical Treatment
Annual grassland	All biomass material would be left on-site	All biomass material would be left on-site
Coastal scrub, chaparral, and coyote brush scrub	Removed material would be disposed off-site or by pile burning to reduce fuel loading. Approximately 75 percent of the biomass would be chipped, mulched, masticated, or lopped and scattered on-site, and approximately 25 percent of biomass would be piled and burned or hauled off-site for processing.	All biomass material would be left on-site
Eucalyptus forest	Approximately 60 percent of the biomass would be chipped, mulched, masticated, or lopped and scattered on-site, and approximately 40 percent of biomass would be piled and burned or hauled off-site for processing.	Approximately 30 percent of the biomass would be chipped, mulched, masticated, or lopped and scattered on-site, and approximately 70 percent of biomass would be processed on-site by biomass processing technologies or hauled off-site for processing.
Nonnative coniferous forest		Approximately 50 percent of the biomass would be chipped, mulched, masticated, or lopped and scattered on-site, and approximately 50 percent of biomass would be processed on-site by biomass processing technologies or hauled off-site for processing.
Oak-bay woodland and redwood forest	Biomass would be left on-site unless treatment is occurring in stands where composition also includes eucalyptus or nonnative conifer and retained biomass capacity is already reached for the project area. In this instance, biomass would be processed off-site or pile burned.	Biomass would be left on-site unless treatment is occurring in stands where composition also includes eucalyptus or nonnative conifer and retained biomass capacity is already reached for the project area. In this instance, biomass would be processed off-site or pile burned.
Riparian woodland	If the treatment occurs within a riparian area, all biomass would be removed and processed outside the riparian woodland vegetation type or hauled off-site.	Mechanical treatment is not recommended in riparian woodland and would not generally be implemented, except potentially along the margin. Biomass would be removed and processed outside the riparian woodland vegetation type or hauled off-site.

ON-SITE

Biomass would be processed within the treatment areas (i.e., on-site) by the following means:

- Vegetation retained onsite: Vegetative debris would be masticated (mulched), lopped and scattered, or chipped, and placed on the ground concurrently with vegetation removal.
- Prescribed burning: In some areas, prescribed burning may be used to dispose of slash, chipped, and masticated materials.
- Specialized biomass processing technologies: See details below.
- Biochar and ash: Specialized biomass processing technologies may result in biochar or ash, which would be scattered on-site as a soil amendment.

Biomass would be retained on-site according to the following parameters:

- Invasive plants and noxious weeds would generally be cut based on species-specific phenology and timing to avoid spreading seed and propagules. Given their invasive nature, biomass from invasive plants and noxious weeds may be processed on-site in the same location to prevent spread of seed bank or propagules to other areas.
- Two to eight larger diameter trees per acre (generally greater than 10 inches dbh and greater than 20 feet in length) that are removed through manual treatment or mechanical treatment would be delimbed and retained onsite for habitat improvement, erosion control, and trail delineation, where feasible while still meeting treatment goals; down logs retained onsite would be positioned so that they are substantially in contact with the forest floor throughout their length.
- No biomass would be retained in fuel break treatment areas. In all other areas, wood chips or mulch generated onsite would be no more than 4 to 6 inches in depth, and would not be spread in areas where grassland vegetation types were dominant or the objective of treatment. Chips would not cover more than 20 percent of any given treatment area.
- Retained biomass would not be placed in watercourses.

OFF-SITE

Biomass would be transported from the treatment areas and processed off-site by the following means, using forwarders, log loaders, or log trucks:

- Remove biomass from invasive plants and noxious weeds may be disposed of off-site to an appropriate waste collection facility.
- Removing chips off-site: Some residual biomass from project treatments in excess of what can be retained on-site would be hauled off-site to a biomass processing facility without charge to the recipient. If chip is generated from a commercial species, that will be separated from other generated chip and hauled to a biomass facility/ies without charge to the recipient.
- Specialized biomass processing technologies: Some biomass would be transported to off-site central biomass processing areas, such as the Grizzly Flat and Anthony Chabot biomass processing areas (Figure 2-1). See details below.

Specialized Biomass Processing Technologies

Biomass from some manual treatment, mechanical treatment, and herbicide applications may be disposed of through specialized processing technologies. Air curtain burners, carbonators, and gasifiers are types of technologies that would be used for biomass processing, as feasible and available, pursuant to Mitigation Measure GHG-2 from the CalVTP PEIR, which requires incorporation of feasible methods or technologies to reduce greenhouse gas emissions. These facilities use technology that reduces emissions below what would be produced by pile burning equivalent amounts of biomass. As contemplated in Mitigation Measure GHG-2, the science and technology surrounding methods to reduce greenhouse gases and sequester carbon are evolving and are likely to change through the life of the proposed project. Technological advances in biomass processing and use will continue to occur. Therefore, additional biomass processing methods or technologies could be used for the proposed project in the future if they are equally or more effective in reducing criteria pollutants and/or greenhouse gases.

Equipment needed for these technologies are typically in self-contained facilities that could be placed on- or off-site, depending on their size and location. They would range in size from a small kiln to a small building. These technologies convert biomass into various products, including carbon ash and biochar. Ash and biochar may be scattered onto the soil once cooled or taken off-site for use elsewhere. Biochar would be used as an amendment to soil, where it can store carbon for long periods of time.

Specialized biomass processing technologies may be staged on existing roads, landings, other disturbed areas, or at a central biomass processing area. Some technologies are small and mobile and would be moved to treatment areas

and other technologies are larger and would be staged in one place for a longer period. Biomass from nearby treatment areas may be transported to a central location (see "Central Biomass Processing Areas" below). All equipment would be used in locations that meet the qualifications for their safe use.

Central Biomass Processing Areas

Two potential central biomass processing areas that may be used are the Anthony Chabot Biomass Processing Area (1.1 acres) and Grizzly Flat Biomass Processing Area (1.8 acres) (Figure 2-1). For example, the Anthony Chabot Biomass Processing Area could burn biomass from multiple treatment areas (e.g., Redwood Canyon, AC Soap Plant, Bort Meadow, and AC Grass Valley).

The Grizzly Flat or Anthony Chabot biomass processing areas are previously disturbed sites and are already paved or graveled. There would be no grading required. Activities that may occur on the processing sites include storage for biomass, space for trucks, storage for ash and biochar, as well as the processing of biomass. The processing procedures would include loading the biomass into the processor with an excavator, burning/processing it, and emptying out the ash and biochar. After emptying the ash and biochar, the materials would either be used on the Park District properties or distributed to local partners for use (e.g., for agriculture, grazing, and horticulture). Distribution to local partners would be limited to regional locations. Because ash has much less use in the region than biochar, it would most likely travel less distance. The biochar and ash would not be landfilled.

Log trucks would be used as the main transport to initially haul-in the biomass. The biochar product could be hauled-off with any vehicle, as it can be hauled the same as any soil product, by the pound or by the ton. The average distance from the more northern treatment areas to the Grizzly Flat Biomass Processing Area varies from 1.4 to 5.4 miles, and the average distance from the more southern treatment areas to Anthony Chabot Biomass Processing Area is between 0.7 to 5.7 miles. In the future, other disturbed locations within similar distances to the treatment areas may be designated as central biomass processing areas.

Biomass Processing Technologies

Direct Combustion – Air Curtain Burners

Air curtain burners use direct combustion to process biomass. Combustion is an exothermic (heat-producing) reaction between oxygen and the hydrocarbon in biomass. The biomass is converted into heat, water, carbon ash, and CO_2. They are operated by depositing biomass in the firebox, an open top metal container, within which the biomass is set alight. The air curtain filter (i.e., fast-moving curtain of air) is drawn over the firebox while a blower circulates the air and smoke within the firebox, subjecting it to repeated cycles of burning in the flames. The blower creates a high temperature vortex inside the chamber to accelerate biomass combustion, more completely combust the material, and keep most pollutants from escaping the firebox into the atmosphere. The air curtain at the top of the firebox acts as a filter to reduce any particulate matter (PM) emissions from the resulting exhaust.

Air curtain burners would be set up on existing roads, landings, other disturbed areas, or at the Grizzly Flat or Anthony Chabot biomass processing areas (Figure 2-1). Air curtain burners would be used in locations that meet the qualifications for their safe use. An example of a small air curtain burner that may be used is the BurnBoss T24. This is a small unit that can be towed with a standard heavy-duty pickup truck. The overall size is less than 20 feet in length, 8 feet in width, and 6 feet in height. A small US EPA Tier 4 diesel engine powers the air curtain fan. The BurnBoss T24 consumes 5-10 cubic yards of biomass per hour and up to a third of a gallon of diesel fuel per hour. Larger air curtain burners may be used as well.

Pyrolysis/Carbonization

Pyrolysis (or carbonization) can be performed in a variety of ways, from simple oxygen-depriving designs, such as an Oregon kiln, which can process up to several cubic yards at time, to modular and portable carbonation units, to more complex large-scale pyrolysis chamber systems in a fixed location that can process up hundreds of tons of biomass per day (these would not be used as a component of the proposed project). Pyrolysis involves the conversion of biomass into hydrocarbon liquids, gases, or solids (or all three) in the total absence of oxygen at temperatures ranging from (400–900 degrees C). Only smaller scale, portable carbonators would be used as part of the proposed

project. An example of a carbonator that may be used is the Tigercat 6050 Carbonator. This portable facility is approximately 40 feet in length, 12 feet in width, and 12 feet in height. Several Tigercat 6050 Carbonators may be used at one central location near several treatment areas.

Gasifier

Gasification is defined as a high-temperature conversion of carbonaceous materials (biomass) into a combustible gas mixture under reducing conditions. Through gasification, biomass can be converted into gaseous fuels intermediate (producer gas and syngas) that can be used for heating, industrial processes, electricity generation, and liquid fuel production. The catalyst required for gasification typically consists of air, oxygen, steam, or a mixture of those three. The key benefits of using biomass as an energy source include the fact that the components, when released, do not constitute a net carbon contribution back into the atmosphere as well as the reduction on the dependence of non-renewable or imported fuel sources.

In the future, the Park District could obtain a gasifier to process woody biomass. Suitable processing locations near existing electrical infrastructure would allow electricity generated to be directed into the electrical grid similar to a solar array. The electricity generated could be stored in batteries for future use by the Park District staff. Current advancements in electrifying equipment used for fuels management activities could result in the power generated charging the equipment performing the work associated with the project.

2.2 TREATMENT MAINTENANCE

Ongoing treatment maintenance of the areas treated as part of the proposed project would generally occur to sustain the reduced wildfire risk and ecosystem restoration objectives achieved by the initial treatment(s) (Attachment B). Treatment maintenance would be based on real-time monitoring of site conditions. Treatment maintenance methods would involve the same treatment types and activities used in the original treatment; however, the Park District anticipates the use of more hand crews for maintenance than mechanical equipment. Treatment maintenance could be implemented year-round. Periodic maintenance would occur as needed, determined by qualified staff who would monitor the project area over the lifetime of the proposed project.

As part of the maintenance strategy, in the event of a wildfire in a treatment area, the Park District would implement maintenance treatments using the same treatment types and activities described above to restore the landscape and continue to promote the desired objectives for each treatment area (refer to Section 2.1, "Proposed Treatments" and Attachment B). Treatment maintenance activities to restore the natural landscape after a wildfire would generally focus on the use of hand crews to reintroduce native vegetation cover types, consistent with activities described above. Necessary post-fire repair activities to repair damage to infrastructure and resources as a result of emergency wildfire suppression response (e.g., repair of dozer lines, damaged road drainage facilities, clearing stream channels or structures of deposited debris, prevent wildfire-related soil erosion) are not covered by this PSA/Addendum. These activities would likely be exempt from CEQA under the Declared Emergency statutory exemption (CEQA Guidelines Section 15269[a]).

Prior to implementing a maintenance treatment, the Park District would verify that the expected site conditions as described in the PSA are present in the treatment area. In the event of a wildfire, for example, the Park District may conduct a data review and reconnaissance survey pursuant to SPR BIO-1 to verify conditions are still substantially similar to those anticipated in the PSA. As time passes, the continued relevance of the PSA would be considered by the Park District in light of potentially changed conditions or circumstances. Where the Park District determines the PSA is no longer sufficiently accurate to determine significance of environmental impacts, the Park District would determine whether an updated PSA, a new PSA, or other environmental analysis would be warranted.

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

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3 ENVIRONMENTAL CHECKLIST

VEGETATION TREATMENT PROJECT INFORMATION

1. **Project Title:** East Bay Hills Vegetation Treatment Project
2. **CalVTP I.D. Number:** 2022-24
3. **Project Proponent Name and Address:** East Bay Regional Park District
   2950 Peralta Oaks Court
   Oakland, CA 94605
4. **Contact Person Information and Phone Number:** Drake Hebert, Senior Planner. 510-544-2334
   Givonne Law, Fuels Reduction Coordinator. 510-332-5380
5. **Project Location:** Contra Costa and Alameda Counties. The project is located in the East Bay Hills, east of I-580 and west of I-680, in areas both north and south of State Route (SR) 24.
6. **Total Area to Be Treated (acres)** Up to 2,280 acres
7. **Description of Project**: Treatments would involve manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. See Chapter 2, "Treatment Description," and Attachment B for additional details.

   a. Initial Treatment

   Initial treatments would include fuel break, WUI fuel reduction, and ecological restoration treatments involving manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. See Section 2.1, "Proposed Treatments," for additional details.

   Treatment Types *[See description in CalVTP PEIR Section 2.5.1, check every applicable category, and provide detail in description of initial treatment.]*

   ☒ Wildland-Urban Interface Fuel Reduction

   ☒ Fuel Break

   ☒ Ecological Restoration

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

   ☒ Prescribed Burning (Broadcast), up to 2,280 acres

   ☒ Prescribed Burning (Pile Burning), up to 2,280 acres

   ☒ Mechanical Treatment, up to 2,280 acres

   ☒ Manual Treatment, up to 2,280 acres

   ☒ Prescribed Herbivory, up to 2,280 acres

   ☒ Herbicide Application, up to 2,280 acres

   Fuel Type *[See description in CalVTP PEIR Section 2.5.2, check every applicable category, include number of acres subject to each treatment activity, and provide detail in description of initial treatment.]*

   ☒ Grass Fuel Type

   ☒ Shrub Fuel Type

   ☒ Tree Fuel Type

b. Treatment Maintenance

Treatment maintenance of the areas treated under the proposed project would generally be done to continually promote and sustain the objectives achieved by the initial treatment(s). Treatment activities would include manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. See Section 2.2, "Treatment Maintenance," and Attachment B for details.

Treatment Types *[See description in CalVTP PEIR Section 2.5.1, check every applicable category, and provide detail in description of initial treatment.]*

☒ Wildland-Urban Interface Fuel Reduction

☒ Fuel Break

☒ Ecological Restoration

Treatment Activities *[See description in CalVTP PEIR Section 2.5.2, check every applicable category, include number of acres subject to each treatment activity, and provide detail in description of initial treatment.]*

☒ Prescribed Burning (Broadcast), up to 2,280 acres

☒ Prescribed Burning (Pile Burning), up to 2,280 acres

☒ Mechanical Treatment, up to 2,280 acres

☒ Manual Treatment, up to 2,280 acres

☒ Prescribed Herbivory, up to 2,280 acres

☒ Herbicide Application, up to 2,280 acres

Fuel Type *[See description in CalVTP PEIR Section 2.5.2, check every applicable category, include number of acres subject to each treatment activity, and provide detail in description of initial treatment.]*

☒ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

Use of the PSA for Treatment Maintenance

Prior to implementing a maintenance treatment, the project proponent would verify that the expected site conditions as described in the PSA are present in the treatment area. As time passes, the continued relevance of the PSA will be considered by the project proponent in light of potentially changed conditions or circumstances. Where the project proponent determines the PSA is no longer sufficiently relevant, the project proponent would determine whether an updated PSA, a new PSA, or other environmental analysis is warranted.

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

8. Regional Setting and Surrounding Land Uses:

The proposed CalVTP treatments would occur in the Park District's parks from Tilden Regional Park in the north to Lake Chabot Regional Park in the south. The treatment areas are located in the East Bay Hills, which divide the Berkeley-Oakland coastal area from the east bay regions of Orinda and Moraga. The treatment areas are generally rural with various levels of recreational use. The area has a history of cattle grazing and recreational use and the landscape is dominated by a mix of annual grassland, coastal scrub, coastal oak woodland, hardwood, and nonnative forest. Surrounding land uses include rural private land, recreation, land owned by East Bay Municipal Utility District, and residential areas.

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

Pesticide application permit from Contra Costa County and Alameda County Agricultural Commissioner

Smoke management plan will be prepared for Bay Area Air Quality Management District, when required

Burn permits from Bay Area Air Quality Management District, when required

Burn permits from CAL FIRE, when 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 has 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.

10. 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 requires further tribal coordination during PSA preparation.*

Pursuant to SPR CUL-2, Native American contacts in Contra Costa County and Alameda County were contacted on October 11, 2022, and included Irene Zwierlein, Chairperson, Amah Mutsun Tribal Band of Mission San Juan Bautista; Tony Cerda, Chairperson, Costanoan Rumsen Carmel Tribe; Donald Duncan, Chairperson, Guidiville Indian Rancheria; Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Coastanoan; Kanyon Sayers-Roods, Indian Canyon Mutsun Band of Coastanoan; Monica Arellano, Vice Chairwoman, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area; Timothy Perez, North Valley Yokuts Tribe; Katherine Perez, Chairperson, North Valley Yokuts Tribe; Andrew Galvan, The Ohlone Indian Tribe; Jesus Tarango, Chairperson, Wilton Rancheria; Dalton Brown, Director of Administration, Wilton Rancheria; Steve Hutchason, Tribal Historic Preservation Officer, Wilton Rancheria; Kenneth Woodrow, Chairperson Wuksache Indian Tribe/ Eshom Valley Band; and Corina Gould, Chairperson, The Confederated Villages of Lisjan. A response was received from The Confederated Villages of Lisjan. The tribe requested some revisions to the SPRs to reflect tribal concerns and values, which have been incorporated in the SPRs set forth below. No other tribes responded.

DETERMINATION

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

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

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

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

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

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

Signature

07/19/2023
Date

Brian Holt
Printed Name

Chief of Planning, Trails, and GIS
Title

East Bay Regional Park District
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	List MMs Applicable to the Treatment Project	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-4 AES-2 AQ-2 AQ-3 REC-1	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-1 AES-3	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	--	--	--	--	--

Notes: LTS = less than significant; SU = significant and unavoidable; NA = not applicable because there are no SPRs and/or MMs identified in the PEIR for this impact.

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

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

Discussion

IMPACT AES-1

Initial and maintenance treatments would 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. The nearest designated state scenic highways to the project area are State Route (SR) 24, which crosses through the project area, and Interstate (I-) 580 west/southwest of the project area (Caltrans 2022). The nearest eligible state scenic highway to the project area is SR 13 located west of the project area (Caltrans 2022). The proposed treatments would occur on public and private lands. Public viewpoints within and near the project area from which treatments would be visible include public trails and recreation areas near several East Bay regional parks (e.g., Tilden Regional Park, Sibley Volcanic Regional Preserve, Dr. Aurelia Reinhardt Redwood Regional Park (Redwood Regional Park), Anthony Chabot Regional Park), as well as SR 24, I-580, SR 13, and other public and private roadways (e.g., the Caldecott Tunnel over SR 24, Manzanita Drive, Pinehurst Road, Grizzly Peak Boulevard, Wildcat Canyon Road, and Lomas Cantadas). Although portions of the project area are visible from public viewpoints, a designated state scenic highway (SR 24), and an eligible state scenic highway, the project area is densely vegetated with trees and shrubs and is characterized by varied topography, which would substantially reduce the visibility of treatments from public viewpoints. In addition, treatments would primarily remove shrubs and trees smaller than 12 inches dbh, leaving overstory vegetation. Although in the short-term after treatment, the removal of vegetation could be noticeable, mature vegetation would remain to provide partial screening of treatment areas. However, equipment, crews, and smoke from prescribed burning could be visible from public viewpoints, two officially designated state scenic highways (SR 24 and I-580), and one eligible state scenic highway (SR 13) in the short term.

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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing scenic resources are essentially the same within and outside of the treatable landscape; therefore, the short-term aesthetic impact is also the same, as described above. SPRs applicable to the proposed treatments are AD-4, AES-2, AQ-2, AQ-3, and REC-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 AES-2

Initial and maintenance treatments would include WUI fuel reduction, ecological restoration, and shaded fuel break treatment types. The potential for these treatment types to result in long-term degradation of the visual character of an area was examined in the PEIR. Public viewpoints within and near the project area from which treatments would be visible include public trails and recreation areas near several East Bay regional parks (e.g., Tilden Regional Park, Sibley Volcanic Regional Preserve, Redwood Regional Park, Anthony Chabot Regional Park), as well as SR 24, I-580, SR 13, and other public and private roadways. Treatment activities would retain most large trees; in fuel break and WUI fuel reduction treatment areas, treatment would retain native trees (i.e., conifers other than some pine, hardwoods) greater than 12 inches dbh, and pine, eucalyptus, and *Prunus* species greater than 24 inches dbh inches. In ecological restoration treatments, trees 12 inches dbh or greater would be retained in forested habitat, and trees 8 inches or greater would be retained in oak woodland habitat. Therefore, mature vegetation would remain to provide partial screening of treatment areas. The long-term visual character of the treatment areas after implementation of the proposed WUI fuel reduction, ecological restoration, and shaded fuel break treatments would remain consistent with the current natural, vegetated landscape and would not constitute a substantial adverse change or degrade the current visual character of the landscape.

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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing visual character is essentially the same within and outside of the treatable landscape; therefore, the long-term aesthetic impact is also the same, as described above. SPRs applicable to the proposed treatments are AES-1 and AES-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 AES-3

This impact does not apply to the proposed project because no nonshaded fuel breaks are proposed.

NEW AESTHETIC AND VISUAL RESOURCE IMPACTS

The proposed treatments are consistent with the treatment types and activities covered 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 3.2.1, "Environmental Setting," and Section 3.2.2, "Regulatory Setting," in Volume II of the Final PEIR). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions pertinent to aesthetics and visual resources that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impact. Therefore, no new impact related to aesthetics and visual resources would occur.

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	List MMs Applicable to the Treatment Project	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 That, 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

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT AG-1

Vegetation treatment activities implemented within the project area would include manual treatment, mechanical treatment, prescribed burning, prescribed herbivory, and herbicide treatments to conduct ecological restoration, WUI fuel reduction, and fuel break treatment types. The project area includes areas of oak-bay woodlands, Monterey pine and other conifers, eucalyptus, and redwood forest. Ecological restoration treatments would be implemented throughout most of the treatment area, and these treatments focus on thinning smaller diameter trees (e.g., eucalyptus or pine under 12 inches dbh, with a target spacing of 20–30 feet for retained trees) from overstocked forest areas to promote the continued growth of mature trees, a healthy forest structure, and reduce fuel continuity vertically and horizontally. WUI fuel reduction treatments would remove dead, dying, hazard, and diseased trees of any diameter and nonnative and/or invasive trees and stems up to 24 inches dbh to promote a healthier residual stand following treatments.

The potential for these treatment types and treatment activities to result in the loss of forest land or conversion of forest land to non-forest use is within the scope of the PEIR because the proposed treatment activities are consistent with those analyzed in the PEIR, and the treatment activities described above would occur in forested lands. Consistent with the PEIR, the vegetation remaining after treatments would meet the definition of forest land as defined in PRC Section 12220(g), which defines "forest land" as land that can support 10-percent native tree cover of any species under natural conditions. The inclusion of land in the proposed project area that is outside the CalVTP

treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the composition of forested land as defined in PRC Section 12220(g) is essentially the same within and outside the treatable landscape; therefore, the impact on forest land is also the same, as described above. No SPRs are applicable to this impact. Therefore, the potential for the project to result in the loss or conversion of forest land 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.

NEW AGRICULTURE AND FORESTRY RESOURCE IMPACTS

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 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). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not 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	List MMs Applicable to the Treatment Project	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 through 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	Yes	AQ-5	NA	LTS	No	Yes
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-1 through AQ-3 AQ-6	NA (No feasible mitigation available)	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	AQ-1 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 (No feasible mitigation available)	SU	No	Yes

Notes: LTS = less than significant; SU = significant and unavoidable; NA = not applicable because there are no SPRs and/or MMs identified in the PEIR for this impact.

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
	☐	☐	☐

Discussion

Pursuant to SPR AQ-2, the project proponent would prepare a smoke management plan and submit it to the Bay Area Air Quality Management District (BAAQMD) prior to implementing any prescribed burning treatment. In addition, the project proponent would prepare a burn plan as required by SPR AQ-3, which would include fire behavior modeling. Also, SPR AQ-6 requires the implementation of an Incident Action Plan, which identifies burn dates, burn hours, weather limitations, specific burn prescription, communication plan, medical plan, traffic plan, and other special instructions required by BAAQMD, would also be prepared by the project proponent for all proposed prescribed burning treatments. The Incident Action Plans would also identify the contact personnel with BAAQMD to coordinate on-site briefings, posting notifications, and weather monitoring during burning.

IMPACT AQ-1

Use of vehicles, mechanical equipment, broadcast burning, and pile 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 treatment are within the scope of the PEIR because the associated equipment and duration of use are consistent with those analyzed in the PEIR. The SPRs applicable to this treatment project are AD-4, and AQ-1 through AQ-4, and AQ-6. The Park District would implement the emission reduction techniques included in Mitigation Measure AQ-1 to the extent feasible. However, because the treatments would be implemented by a public agency with limited funding, procuring or paying additional amounts for contractors that use equipment meeting the latest efficiency standards, including meeting the US EPA's Tier 4 emission standards, using renewable diesel fuel, using electric- and gasoline-powered equipment, and using equipment with Best Available Control Technology may be cost prohibitive. Carpooling would be encouraged by the Park District, but because crews may not all be employed with the same company and due to the project's location in a rural area it may not be feasible for most workers. For these reasons, and as explained in the PEIR, this impact would remain significant and unavoidable.

The Park District is conducting pilot project testing of biomass processing technologies for potential use in place of pile burning, pursuant to Mitigation Measure GHG-2. Evaluation of criteria air pollutant emissions from these 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, carbonator, and gasifier substantially reduce reactive organic gas (ROG) and PM emissions when compared to pile burning, ranging between a 71 and 100 percent reduction. For nitrogen oxides (NO_X) reductions, air curtains and carbonation are estimated to reduce NO_X emissions by at least 73 and 93 percent, respectively. NO_X reductions are only marginally lower for biomass processed through gasification with a 3 percent reduction compared to pile burning (Ascent 2022). Based on available information about emissions from specialized biomass processing technologies, these technologies offer the opportunity to substantially reduce local exposure to PM from smoke, a potentially beneficial difference compared to pile burning, and toxic air contaminants (TACs) compared to open pile burning, and in some scenarios also reduced greenhouse gas emissions. Impact AQ-1 must still be recognized as potentially significant and unavoidable because of uncertainties in the extent of their use.

The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the air quality conditions present and air basin in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the air quality impact is also the same, as described above. 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-2

Use of mechanical equipment during initial and maintenance treatments could expose people, such as hikers and recreationists within East Bay regional parks (e.g., Tilden Regional Park, Sibley Volcanic Regional Preserve, Redwood Regional Park, Anthony Chabot Regional Park) to diesel particulate matter emissions. However, treatment activities would not take place near the same people for an extended period such that prolonged exposure would occur. 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.

The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the air quality conditions and sensitive receptors (i.e., exposure potential) present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the air quality impact is also the same, as described above. SPRs applicable to this treatment are HAZ-1, NOI-4, and NOI-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 AQ-3

Use of vehicles, mechanical equipment, and prescribed burning during treatments would involve ground disturbing activities. The potential to expose people to naturally occurring asbestos (NOA)-containing fugitive dust emissions was examined in the PEIR. According to a US Geological Soil Survey map of areas where naturally occurring asbestos in California are likely to occur, the project area is not located on soil types where NOA would likely be present (DOC 2000; CalOSHA 2022). However, portions of the project area are underlain by serpentine soils (see Section 4.6, "Geology, Soils, Paleontology, and Mineral Resources"), and serpentine soils were observed during the reconnaissance-level survey for biological resources. These types of soils could potentially contain thin veins of asbestos fibers that can become airborne when disturbed. In accordance with SPR AQ-5, no ground-disturbing activities would occur in these areas unless an Asbestos Dust Control Plan (17 CCR Section 93105) is prepared and approved by BAAQMD. Potential NOA exposure from the proposed treatments is within the scope of the activities and impacts addressed in the PEIR because the types of ground-disturbing activities and the exposure potential is consistent with the impacts analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the air quality impact is also the same, as described above. 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-4

SPRs applicable to prescribed burning are designed to minimize the risk of exposing people to smoke, which includes TACs; however, prescribed burning during initial and maintenance treatments could still result in the short-term exposure of people to TACs. Exposure to the types of TACs found in smoke could result in acute short-term health impacts such as eye and respiratory irritation and exacerbated asthma symptoms. This potential exposure risk during initial and maintenance treatments was examined as an impact in the PEIR. The use of biomass processing technologies is proposed 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), the proposed biomass processing technologies would reduce ROG emissions by at least 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 biomass conversion technologies as compared with pile burning.

The duration and parameters of the prescribed burns are within the scope of the activities addressed in the PEIR, and impacts would be reduced with the use of specialized biomass processing technologies. Within the BAAQMD, air quality conditions are consistent with those analyzed in the PEIR for Alameda and Contra Costa Counties. Therefore, the potential for exposure to TACs is also within the scope the PEIR. SPRs applicable to these treatment activities are AD-4, AQ-1, 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 because unpredictable changes in weather can occur during prescribed burns resulting in short-term exposure of people to concentrations of TACs, as explained in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the air quality conditions present and air basins in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the air quality impact is also the same, as described above. 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-5

Use of diesel-powered equipment during vegetation 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. Consistent with the PEIR, diesel exhaust emissions would be temporary, would not be generated at any one location for an extended period of time, and would dissipate rapidly from the source with an increase in distance. This impact is within the scope of the PEIR because the equipment that would be used and the duration of use under the proposed project are consistent with what was analyzed in the PEIR. SPRs applicable to the proposed project are AQ-1, HAZ-1, NOI-4, and NOI-5. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the air quality conditions and sensitive receptors present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the air quality impact is also the same, as described above. 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 AQ-6

SPRs applicable to prescribed burning are designed to minimize the risk of exposing people to smoke, which includes objectionable odors; however, prescribed burning during initial and maintenance treatments could still expose people to objectionable odors. The potential to expose people to objectionable odors from prescribed burning was examined in the PEIR. The use of biomass processing technologies is proposed to reduce smoke emissions and associated odors in comparison to pile burning. When compared to pile burning, the proposed biomass technologies would substantially reduce smoke through filtering (i.e., air curtains) or eliminate smoke and associated odors altogether (i.e., gasifiers, pyrolysis).

The duration and parameters of the prescribed burn and the exposure potential are consistent with the activities addressed in the PEIR, and impacts would be reduced with the use of proposed biomass processing technologies. 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 because there is no guarantee that smoke would behave as predicted, as explained in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the air quality conditions present and sensitive receptors in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the air quality impact is also the same, as described above. 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 AIR QUALITY IMPACTS

The proposed treatments are consistent with the treatment types and activities covered 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 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). Including land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to air quality that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impact. Therefore, no new impact related to air quality would occur.

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	List MMs Applicable to the Treatment Project	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	SU	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

Notes: LTS = less than significant; SU = significant and unavoidable; NA = not applicable because 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
	☐	☐	☐

Discussion

Consistent with SPR CUL-1, a cultural resources records search of the current data held at Northwest Information Center (NWIC) was completed in August and September of 2022 for all 21 treatment areas totaling approximately 2,280 acres, including areas within and outside of the CalVTP treatable landscape. Only 53 percent of the proposed project area has been subject to archaeological survey. A total of 34 previously recorded archaeological sites and historic features were identified within the treatment areas. Analysis of the results discovered that two individually recorded archaeological features are located within the boundaries of larger sites; therefore, only 32 previously recorded resources were

identified within the project area. Of the 32 archaeological sites and historic features, five are historic districts, 11 are historic features, 12 are historic-era archaeological sites, and four are precontact archaeological sites. Three of the historic districts, Tilden Regional Park, Redwood Regional Park, and Sibley Volcanic Regional Preserve have all been recommended as eligible for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), and therefore represent historical resources for the purposes of CEQA. One of the two remaining historic districts, Anthony Chabot Regional Park, was recommended as not eligible for listing in the NRHP or the CRHR, while the other, Redwood Valley Railroad/Tilden Steam Trains, has not been evaluated. The Grass Valley Trail, which has segments in both the Bort Meadow and AC Grass Valley treatment areas, has been evaluated and is recommended as eligible for listing in the NRHP and the CRHR. Bridge 28-0015L is present in the Sibley Wildlife Corridor treatment area; it has been recommended not eligible for listing in either the NRHP or CRHR. The remaining 26 archaeological sites and historic features have not been evaluated for listing in either the NRHP or CRHR.

Consistent with CalVTP SPR CUL-2, a list of geographically affiliated Native American representatives was obtained from the Native American Heritage Commission (NAHC). A search of NAHC's Sacred Lands database on May 29, 2022, returned positive results. The Park District sent certified letters and emails on October 11, 2022, requesting information regarding potential impacts to cultural resources from the proposed treatment. Follow up phone calls were made on October 26, 2022, and October 28, 2022.

A list of the representatives identified by the NAHC, the method of contact, and any response received is provided in Table 4.4-1 below. The Confederated Villages of Lisjan requested some project-specific revisions to the SPRs to reflect tribal concerns and values, which have been incorporated in the SPRs set forth below.

Table 4.4-1 Geographically Affiliated Native American Tribes and Representatives Contacted

Name and Title	Affiliation	Date and Medium of Initial Contact	Response Summary
Irene Zwierlein, Chairperson	Amah Mutsun Tribal Band of Mission San Juan Bautista	October 11, 2022 USPS certified mail and email	Requested that prior to work, an NWIC records search be conducted and that a tribal/cultural resources sensitivity training be provided to the work crews.
Tony Cerda, Chairperson	Costanoan Rumsen Carmel Tribe	October 11, 2022 USPS certified mail and email	No response from the Costanoan Rumsem Carmel Tribe.
Donald Duncan, Chairperson	Guidiville Indian Rancheria	October 11, 2022 USPS certified mail and email	The letter was forwarded to the tribal historian; the tribal historian will contact the Park District if there are any comments.
Ann Marie Sayers, Chairperson	Indian Canyon Mutsun Band of Coastanoan	October 11, 2022 USPS certified mail and email	No response to letter; could not leave voicemail. No response received.
Kanyon Sayers-Roods	Indian Canyon Mutsun Band of Coastanoan	October 11, 2022 USPS certified mail and email	No response to letter; left a voicemail on October 28, 2022. No response received.
Monica Arellano, Vice Chairwoman	Muwekma Ohlone Indian Tribe of the San Francisco Bay Area	October 11, 2022 USPS certified mail and email	No response to letter; could not leave a voicemail. No response received.
Timothy Perez	North Valley Yokuts Tribe	October 11, 2022 USPS certified mail and email	No response to letter; left a voicemail on October 28, 2022. No response received.
Katherine Perez, Chairperson	North Valley Yokuts Tribe	October 11, 2022 USPS certified mail and email	No response to letter; left a voicemail on October 28, 2022. No response received.
Andrew Galvan	The Ohlone Indian Tribe	October 11, 2022 USPS certified mail and email	In response to the follow-up phone call on October 26, 2022, Chairperson Galvan requested the NWIC data associated with the proposed project in order to provide comment. The Park District provided this data to Mr. Galvan on November 7, 2022. The Park District continues to engage with Chairperson Galvan.

Name and Title	Affiliation	Date and Medium of Initial Contact	Response Summary
Jesus Tarango, Chairperson	Wilton Rancheria	October 11, 2022 USPS certified mail and email	No response to letter; a voicemail was left for Wilton Rancheria's Cultural Preservation Officer on October 26, 2022. No response received.
Dalton Brown, Director of Administration	Wilton Rancheria	October 11, 2022 USPS certified mail and email	No response to letter; a voicemail was left for Wilton Rancheria's Cultural Preservation Officer on October 26, 2022. No response received.
Steve Hutchason, Tribal Historic Preservation Officer	Wilton Rancheria	October 11, 2022 USPS certified mail and email	No response to letter; a voicemail was left for Wilton Rancheria's Cultural Preservation Officer on October 26, 2022. No response received.
Kenneth Woodrow, Chairperson	Wuksache Indian Tribe/ Eshom Valley Band	October 11, 2022 USPS certified mail and email	No response to letter; a voicemail was left for the Wuksaceh Indian Tribe/Eshom Valley Band on October 28, 2022.
Corina Gould, Chairperson	The Confederated Villages of Lisjan	October 11, 2022 USPS certified mail and email	The Confederated Villages of Lisjan replied via email on October 12, 2022, with concerns about herbicides. The Park District's Cultural Services Coordinator engaged with the tribe on October 26, 2022. The results of this discussion are reflected in SPR CUL-6.

Notes: USPS = US Postal Service.

IMPACT CUL-1

Historic-period built resources within the treatment areas are represented by built environment features and historic districts. Together, this accounts for 16 of the 32 resources located within the treatment areas. Of these, only four have been recommended as eligible for listing in the NRHP and CRHR; three are historic-period districts with multiple contributing structures, one of which is the Grass Valley Trail. Two previously recorded built environment features have been recommended as not eligible, Anthony Chabot Regional Park and Bridge 28-0015L. Further, nine buildings/structures (i.e., bridges, roadways) over 50 years old and one potential historic district, which have not been evaluated for inclusion on the NRHP/CRHR, are known to be present within treatment areas. Given that portions of the treatment areas may not have been subject to cultural resources surveys, additional built environment resources may be present.

Initial and maintenance vegetation treatment activities would include manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. The potential for these treatment activities to result in disturbance to, damage to, or destruction of built environment resources, including those that have not yet been evaluated for NRHP/CRHR eligibility, 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 treatment project are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the potential to encounter built-environment structures that have not yet been evaluated for historical significance in areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the potential impact to built environment resources is also the same, as described above. 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

According to the NWIC records search, 16 archaeological sites have been previously identified within six of the treatment areas. Of these previously identified sites, 12 are historic-era in age and four are precontact archaeological sites. All four previously identified precontact archaeological sites are located within the Lake Anza treatment area.

Additional archaeological sites may be present within treatment areas that have not been surveyed or only partially surveyed. Only four treatment areas, Meadows Canyon, Lake Anza, Nimitz Way, and Tilden South, have been previously surveyed or partially surveyed.

Initial and maintenance vegetation treatment activities would include mechanical treatments that use heavy equipment. The heavy equipment use may result in ground disturbance as vegetation is removed. Prescribed burning could damage above ground archaeological features, such as bedrock mortars, lithic scatters, historic-era foundations, and historic-era trash scatters. As a result, these treatments activities have the potential to damage unique archaeological resources or subsurface historical resources, if they are present within a treatment area. 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. This impact was identified as significant and unavoidable in the PEIR because of the large geographic extent of the treatable landscape and the possibility that there could be some rare instances where inadvertent damage of unknown resources may be extensive. Because the project could result in inadvertent discovery and subsequent damage of unique archaeological resources or subsurface historical resources, it would contribute to the environmental significance conclusion in the PEIR; therefore, for purposes of CEQA compliance, this PSA/Addendum notes the impact as potentially significant and unavoidable.

This impact is within the scope of the PEIR, because the treatment activities and intensity of ground disturbance of the treatment project are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the potential for discovery of archaeological resources is essentially the same within and outside the treatable landscape; therefore, the potential impact on unique archaeological resources or subsurface historical resources is also the same, as described above. SPRs applicable to this treatment include CUL-1 through CUL-5 and CUL-8. Mitigation Measure CUL-2 would also apply to this treatment to protect any inadvertent discovery. 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-3

A list of geographically affiliated tribes or tribal representatives contacted is provided in Table 4.3-1. Pursuant to SPR_CUL-2, the NAHC was contacted for a list of Native American individuals affiliated with the project area. Letters requesting information regarding potential impacts to cultural resources from the proposed treatment were sent to the individuals identified by the NAHC on October 11, 2022. Follow-up phone calls were made on October 26, 2022, and October 28, 2022. As previously summarized, results of the NAHC Sacred Lands File database returned positive results for the proposed project. This result indicates that sensitive Native American cultural resources may be located within one or more treatment areas, or within proximity to one or more treatment areas. Contact with geographically affiliated tribes or tribal representatives provided with the results was recommended by the NAHC. Such contact also meets the requirements of SPR CUL-2. The Park District engaged with the Confederated Villages of Lisjan on October 26, 2022. The result of this engagement is reflected in SPR CUL-6.

The potential for proposed treatment activities to cause a substantial adverse change in the significance of a tribal cultural resource was examined in the PEIR. Ground-disturbing activities, such as the use of heavy machinery, as well as vegetation removal treatments, such as burning, herbivory, and herbicides, could inadvertently damage or destroy tribal cultural resources as defined in CalVTP Final PEIR p. 3.5-6 if they are present in treatment areas. The letters sent to tribes pursuant to SPR CUL-2 requested information on the presence of TCRs in the treatment area and provided an opportunity for the tribes to advise on measures to protect any TCRs that are present.

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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the tribal cultural affiliations present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the potential impact to tribal cultural resources is also the same, as described above. SPRs applicable to this treatment include 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 mowers, chippers, tractor/skidder, feller-buncher, or masticators, which could uncover subsurface human remains if present in a treatment area. 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 under the proposed project is consistent with what was 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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the potential for uncovering human remains during implementation of the treatment project is essentially the same within and outside the treatable landscape and treatment activities; therefore, the impact related to disturbance of human remains is also the same, as described above. 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. The project proponent 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). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to archaeological, historical, or tribal cultural resources that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to archaeological, historical, or tribal cultural resources would occur.

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	List MMs Applicable to the Treatment Project	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	AQ-3 AQ-4 BIO-1 BIO-2 BIO-7 BIO-9 GEO-1 GEO-3 GEO-4 GEO-5 GEO-7 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-3 BIO-4 BIO-5 BIO-10 BIO-11 HYD-1 HYD-3 HYD-4 HYD-5 HAZ-5 HAZ-6	BIO-2a BIO-2b BIO-2e BIO-2g BIO-3a BIO-3b BIO-4	LTSM for bumble bee habitat function; TSE for direct harm to bumble bee species; LTSM for other species	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-5 BIO-6 BIO-9 HYD-4 HYD-5	BIO-3a BIO-3b BIO-3c	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 HYD-1 HYD-3 HYD-4	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	List MMs Applicable to the Treatment Project	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 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-4 BIO-5 BIO-10 BIO-11 HYD-1 HYD-4	BIO-5	LTSM	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-3 BIO-4 BIO-5 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	--	--	--	--	--

Notes: LTS = less than significant; LTSM = less than significant with mitigation; NI = no impact; SU = significant and unavoidable; TSE = too speculative for evaluation, per CEQA Guidelines Section 15145; NA = not applicable because 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
	☐	☐	☐

Discussion

Pursuant to SPR BIO-1, Ascent biologists conducted a data review of project-specific biological resources, including habitat and vegetation types, and special-status plants, special-status wildlife, and sensitive habitats (i.e., sensitive natural communities, wetlands) with potential to occur in the treatment areas. Habitat and vegetation types in the treatment areas were identified using data modeled by the CAL FIRE Fire and Resource Assessment Program (FRAP), which was cross-referenced for accuracy against the Conservation Lands Network (CLN) vegetation mapping data. CAL FIRE FRAP vegetation data was primarily used to identify the habitat types present and habitat types within the project area and total acreage of each type are presented in Table 4.5-1. The CLN data was also reviewed to identify areas of potentially sensitive or unusual habitat not already captured in the FRAP data. The CLN and FRAP data were consistent with each other, and both vegetation mapping layers were utilized in this analysis. The vegetation types were verified or corrected in the field during reconnaissance surveys.

Table 4.5-1 Mapped Habitat Types in the Project Area

Habitat Type[1]	Ecological Restoration Acreage	Shaded Fuel Break Acreage	WUI Fuel Reduction Acreage	Total Acreage
Herbaceous				
Annual Grassland	477.7	28.8	16.4	522.9
Herbaceous Total	477.7	28.8	16.4	**522.9**
Forest/Woodland				
Blue Oak Woodland	3.5	—	—	3.5
Closed-Cone Pine-Cypress	14.1	1.3	—	15.4
Coastal Oak Woodland	862.1	61.1	48.1	971.3
Eucalyptus	216.6	9.2	—	225.8
Montane Hardwood	0.2	—	—	0.2
Montane Hardwood-Conifer	1.3	--	0.1	1.5
Redwood	65.43	—	1.4	66.8
Forest/Woodland Total	1,163.1	71.6	49.6	**1,284.4**
Shrub/Scrub				
Chamise-Redshank Chaparral	19.3	5.1	—	24.4
Coastal Scrub	332.5	45.1	19.8	397.4
Shrub/Scrub Total	351.8	50.2	19.8	**421.8**
Wetland/Riparian				
Lacustrine	2.3	—	—	2.3
Valley Foothill Riparian	1.5	—	2.3	3.8
Wetland/Riparian Total	3.7	—	2.3	**6.0**
Developed/Disturbed/Barren				
Urban	35.8	7.3	1.5	44.6
Developed/Disturbed/Barren Total	35.8	7.3	1.5	**44.6**
All Habitats Total	**2,032.2**	**157.9**	**89.5**	**2,279.6**

Notes: WUI = wildland urban interface

[1] Most urban and barren habitats would not be targeted for treatment; however, due to the scale of the habitat mapping, some areas mapped as urban or barren may contain habitats that would be treated (e.g., forested areas close to urban development).

Source: CAL FIRE FRAP data, compiled by Ascent in 2022.

The treatment areas together encompass approximately 2,280 total acres, which range in elevation from approximately 356 to 1,853 feet above sea level (Table 4.5-1). In addition, approximately three acres of disturbed area would be utilized for biomass processing (see Section 2.1.3, "Biomass Processing). The project is located within the Central California Coast ecoregion. Vegetation types identified within the project according to CAL FIRE FRAP data include annual grassland, blue oak woodland, closed-cone pine-cypress, coastal oak woodland, eucalyptus, montane hardwood, montane hardwood-conifer, redwood, chamise-redshank chaparral, coastal scrub, lacustrine habitat, valley foothill riparian habitat, and some urban (developed) areas. Stream and freshwater pond habitats are present and are described below (see Impact BIO-4). The French Trail and Serpentine Prairie Ridge treatment areas contain some gabbro soils, which can be serpentine derived and typically support endemic plant species. Serpentine soils are mapped within 100 feet of the Serpentine Prairie Ridge treatment area (NRCS 2019).

A list of special-status plant and wildlife species with potential to occur in the treatment areas was compiled by completing a review of the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS)

Inventory of Rare and Endangered Plants of California database records for the 22 US Geological Survey (USGS) quadrangles containing and surrounding the treatment areas (CNDDB 2022; CNPS 2022); the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool (USFWS 2022a); the Park District data on Alameda whipsnake captures from 2016 through 2021 (SBI 2021); the Park District sensitive plant known occurrences (Van Dam, pers. comm., 2022a); Consortium of California Herbaria data (CCH 2022); and Appendix BIO-3 (Table 1a, Table 1b, and Table 19) in the CalVTP PEIR (Volume II) for special-status plants and wildlife that could occur in the Central California Coast ecoregion. A list of sensitive natural communities with potential to occur in the treatment areas was compiled by assessing community composition during the reconnaissance surveys, completing a CNDDB search of the 22 USGS quadrangles surrounding the treatment areas (CNDDB 2022), and reviewing Table 3.6-3 (pages 3.6-25 through 3.6-27) in the CalVTP PEIR (Volume II) for sensitive natural communities that could occur in the Central California Coast ecoregion in the habitat types mapped in the treatment areas.

Ascent biologists conducted reconnaissance surveys on May 19, 2022, May 20, 2022, and June 30, 2022, to identify and document sensitive resources (e.g., aquatic habitat, riparian habitat, sensitive natural communities) and to assess the suitability of habitat in the treatment areas for special-status plant and wildlife species. Vegetation and soil characteristics were evaluated, and incidental wildlife observations were recorded.

Based on implementation of SPR BIO-1, including review of occurrence data, species ranges, habitat requirements for each species, results of surveys conducted, and habitat present within the treatment areas as assessed during reconnaissance surveys, a complete list of all species with potential to occur in the vicinity of the proposed project was assembled (Attachment C). A total of 77 special-status plants and 80 special-status wildlife species were assessed. Of these, a total of 41 special-status plants and 29 of the special-status wildlife from the complete list of species were determined to have potential to occur in the treatment areas (Table 4.5-2). These species are discussed in detail under Impact BIO-1 (special-status plants) and Impact BIO-2 (special-status wildlife).

Table 4.5-2 Special-Status Plant and Wildlife Species That May Occur in the Treatment Areas

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Special-Status Plants					
Bent-flowered fiddleneck *Amsinckia lunaris*	—	—	1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 10–2,610 feet in elevation. Blooms March–June. Annual.	*Known to occur.* This species is documented in Tilden Regional Park near Wildcat Canyon Road, and on EBMUD property within one mile of the project area (CNDDB 2022).
Big tarplant *Blepharizonia plumosa*	—	—	1B.1	Dry hills and plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 100–1,660 feet in elevation. Blooms July–October. Annual.	*May occur*. Valley and foothill grasslands potentially suitable for this species are present within the project area.
Big-scale balsamroot *Balsamorhiza macrolepis*	—	—	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Usually (65 to 74 percent of occurrences) on serpentine. 115–4,805 feet in elevation. Blooms March–June. Perennial.	*May occur*. Suitable chaparral, woodland, and grassland habitat is present within the project area. This species is a strong serpentine indicator, so is most likely to be encountered at Serpentine Prairie Ridge, where soils may be serpentine-derived.
Bolander's water-hemlock *Cicuta maculata* var. *bolanderi*	—	—	2B.1	Marshes and swamps, fresh or brackish water. 0–655 feet in elevation. Blooms July–September. Perennial.	*May occur*. While no salt marsh habitat is present in the project area, freshwater marsh habitat along the margins of ponds and streams may provide habitat suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Brewer's western flax *Hesperolinon breweri*	—	—	1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Often (but not always) in rocky serpentine soil in serpentine chaparral and serpentine grassland. 640–2,905 feet in elevation. Blooms May–July. Annual.	*May occur*. Chaparral, woodland, and grassland habitat potentially suitable for this species is present within the project area. This species is a strong serpentine indicator, so is most likely to be encountered at Serpentine Prairie Ridge, where soils may be serpentine-derived.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	—	—	1B.1	Valley and foothill grassland in alkaline clay soils. 0–1,180 feet in elevation. Blooms March–April. Annual.	*May occur*. Grassland habitat potentially suitable for this species is present in the project area and the project is within species' known range. Alo, Cropley, Diablo, Danville, and Conejo soils are mapped in small patches throughout the project area, and these soil types are weakly alkaline.
Chaparral harebell *Campanula exigua*	—	—	1B.2	Chaparral. Rocky sites, usually on serpentine in chaparral. 900–4,100 feet in elevation. Blooms May–June. Annual.	*May occur*. While the only documented occurrences are outside of the project area along the Diablo foothills (CNDDB 2022), this species is a broad endemic to strong indicator of serpentine soils and suitable serpentine chaparral is present in the Serpentine Prairie Ridge treatment area. No other project areas provide suitable serpentine soil habitat (NRCS 2019).
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	—	—	1B.1	Alkaline soils sometimes described as heavy white clay. 0–755 feet in elevation. Blooms May–October. Annual.	*May occur*. Habitat potentially suitable for Congdon's tarplant is present in scattered patches of moderately alkaline soils in the project area within grasslands (NRCS 2019).
Congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta*	—	—	1B.2	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 65–2,135 feet in elevation. Blooms April–November. Annual.	*May occur*. Grasslands and disturbed areas potentially suitable for this species are present in the project area.
Contra Costa goldfields *Lasthenia conjugens*	FE	—	1B.1	Typically found in vernal pools, sometimes found in swales, low depressions, in open grassy areas. 0–1,475 feet in elevation. Blooms March–June. Annual.	*May occur*. Habitat suitable for Contra Costa goldfields is present in the project area within low swales and seasonal wetlands in grassland habitat.
Diablo helianthella *Helianthella castanea*	—	—	1B.2	Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 150–3,510 feet in elevation. Blooms March–June. Perennial.	*Known to occur*. Six occurrences of this species are documented near Tilden Regional Park (CNDDB 2022). Habitat suitable for Diablo helianthella is present throughout the project area, and this species is known to occur in the Tilden South treatment area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Fragrant fritillary *Fritillaria liliacea*	—	—	1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine, various soils reported though usually on clay, in grassland. 10–1,310 feet in elevation. Blooms February–April. Geophyte.	*May occur*. This species has been documented in Tilden Regional Park near the proposed treatment areas (CNDDB 2022). This species may be extirpated from the area, and the occurrence in the CNDDB states that this record needs fieldwork. Habitat suitable for fragrant fritillary is present throughout the project area
Franciscan thistle *Cirsium andrewsii*	—	—	1B.2	Coastal bluff scrub, broadleaved upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps. 0–490 feet in elevation. Blooms March–July. Perennial.	*Known to occur*. This species has been documented as recently as 2006 in Tilden Regional Park within 300 feet of the South Tilden treatment area. This occurrence is noted to be threatened by lack of grazing and invasive plant impacts (CNDDB 2022).
Hall's bush-mallow *Malacothamnus hallii*	—	—	1B.2	Chaparral, coastal scrub. Some populations on serpentine. 35–2,395 feet in elevation. Blooms May–September. Perennial.	*May occur*. Although this species has not been documented within the project area, occurrences are documented within the project vicinity and habitat suitable for Hall's brush-mallow is present in chaparral habitat throughout site (CNDDB 2022).
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	—	—	1B.1	Alkaline depressions, vernal pools, seasonal wetlands, roadside ditches, and other wet places near the coast; occasionally in alkaline soils. 0–165 feet in elevation. Blooms July. Annual or perennial.	*May occur*. Although no occurrences of this species are documented in the vicinity of the project area, freshwater wetland, roadside ditches, and other wet areas in the project area could potentially provide habitat suitable for this species.
Hospital Canyon larkspur *Delphinium californicum* ssp. *interius*	—	—	1B.2	General slopes in open woodlands along the eastern side of the coast ranges. 640–3,595 feet in elevation. Blooms April–June. Perennial.	*May occur*. Habitat suitable for hospital canyon larkspur is present in open woodlands throughout the project.
Jepson's coyote-thistle *Eryngium jepsonii*	—	—	1B.2	Vernal pools and hydric clay soils in valley and foothill grassland. Clay. 10–985 feet in elevation. Blooms April–August. Perennial.	*May occur*. Habitat suitable for Jepson's coyote-thistle may be present in freshwater marsh habitat. Occurrences have been documented nearby at San Pablo Reservoir, just outside of the boundary of Sibley Volcanic Preserve in Orinda, and in Lake Chabot Regional Park (CNDDB 2022).
Large-flowered fiddleneck *Amsinckia grandiflora*	FE	SE	1B.1	Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. 900–1,805 feet in elevation. Blooms April–May. Annual.	*May occur*. Habitat potentially suitable for this species is present throughout forested and grassland project sites.
Loma Prieta hoita *Hoita strobilina*	—	—	1B.1	Strongly associated with serpentine soils. 195–3,200 feet in elevation. Blooms May–July. Perennial.	*May occur*. One historic (1865) occurrence is documented in a nonspecific area marked as "Oakland Hills" and is noted to be possibly extirpated due to development (CNDDB 2022). This species is a strong serpentine indicator, so is most likely to be encountered at Serpentine Prairie Ridge, where soils may be serpentine-derived (NRCS 2019).

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*	—	—	1B.2	Marshes and swamps, meadows, and seeps. Alkaline. 0–835 feet in elevation. Blooms February–May. Perennial.	*May occur*. Habitat suitable is present in pond and wet meadow habitat at Cow Hollow treatment area, and potentially along Wildcat Creek in Tilden Regional Park.
Minute pocket moss *Fissidens pauperculus*	—	—	1B.2	Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 35–3,360 feet in elevation. Blooms. Perennial.	*May occur*. One occurrence is documented within 500 feet of the project area in Tilden Regional Park. This occurrence from 1994 is mapped along Strawberry Canyon above the University of California, Berkeley Botanical Gardens
Most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	—	—	1B.2	Serpentine outcrops, on ridges and slopes. 310–3,280 feet in elevation. Blooms April–September. Annual.	*May occur*. There is one historic (1893) occurrence of this species in Claremont Canyon near the Sibley Volcanic Regional Preserve treatment areas (CNDDB 2022). Habitat suitable for most beautiful jewelflower is present at Serpentine Prairie Ridge, where soils may be serpentine-derived.
Mt. Diablo fairy-lantern *Calochortus pulchellus*	—	—	1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 100–3,000 feet in elevation. Blooms April–June. Geophyte.	*May occur*. Habitat suitable for Mt. Diablo fairy-lantern is present throughout the project area in riparian woodland, grassland, and chaparral, and occurrences are documented near Anthony Chabot Regional Park and Tilden Regional Park (CNDDB 2022).
Mt. Diablo phacelia *Phacelia phacelioides*	—	—	1B.2	Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. 1,985–4,415 feet in elevation. Blooms April–May. Annual.	*May occur*. Habitat suitable for Mt. Diablo phacelia is present throughout the project area in rocky outcroppings.
Oregon meconella *Meconella oregana*	—	—	1B.1	Coastal prairie, coastal scrub. Open, moist places. 195–2,100 feet in elevation. Blooms March–April. Annual.	*May occur*. Habitat suitable for Oregon meconella is present in wet grassland and scrub habitat throughout the project area. One occurrence is documented near the French Trail and Serpentine Ridge Prairie treatment areas (CNDDB 2022).
Oregon polemonium *Polemonium carneum*	—	—	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0–6,005 feet in elevation. Blooms April–September. Perennial.	*May occur*. There are five historic (i.e., 1939 or earlier) occurrences of this species in the vicinity of the project area; the closest of which are in Fremont (i.e., 13 miles south of the project area) and Marin (i.e., 14 miles west) (CNDDB 2022). Despite distance from and barriers between historic occurrences and age of these occurrences, habitat suitable for this species is present in grassland, scrubland, and forested habitat throughout the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Oval-leaved viburnum *Viburnum ellipticum*	—	—	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 705–4,595 feet in elevation. Blooms May–June. Perennial.	*May occur.* The closest occurrences are in Briones regional park (7 miles east of the project area), and near Las Trampas Regional Wilderness (6 miles east of the project area) (CNDDB 2022). Habitat suitable for oval-leaved viburnum is present in chaparral and woodland throughout the project area where elevations exceed 700 feet (CCH 2022).
Pallid manzanita *Arctostaphylos pallida*	FT	SE	1B.1	Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. 590–1,510 feet in elevation. Blooms December–March. Perennial.	*Known to occur.* Several populations of pallid manzanita are documented and closely monitored by the Park District (CNDDB 2022). One transplant is present in Tilden Regional Park near Wildcat Canyon Road (EBRPD 2009). Chaparral habitat suitable for pallid manzanita is present in the project area.
Presidio clarkia *Clarkia franciscana*	FE	SE	1B.1	Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. 65–1,000 feet in elevation. Blooms May–July. Annual.	*May occur.* Habitat suitable for presidio clarkia (serpentine soil) is present in the Serpentine Ridge Prairie treatment area (NRCS 2019).
Prostrate vernal pool navarretia *Navarretia prostrata*	—	—	1B.2	Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. 10–4,050 feet in elevation. Blooms April–July. Annual.	*May occur.* Habitat suitable for prostrate vernal pool navarretia is present in grassland and wet meadow habitat present throughout project area, as alkaline soils are mapped in the project area (NRCS 2019).
Saline clover *Trifolium hydrophilum*	—	—	1B.2	Salt marshes, open areas in alkaline soils. 0–985 feet in elevation. Blooms April–June. Annual.	*May occur.* Although no salt marsh habitat is present, open alkaline soil areas could potentially be present in the project area. Habitat suitable for saline clover may be present in areas with slightly alkaline soils, which are mapped in the project area (NRCS 2019)
San Francisco popcornflower *Plagiobothrys diffusus*	—	SE	1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 150–1,180 feet in elevation. Blooms March–June. Annual.	*May occur.* Habitat suitable for San Francisco popcorn flower is present in annual grassland throughout the project area.
San Joaquin spearscale *Extriplex joaquinana*	—	—	1B.2	In alkaline clay soils. Typically, in alkali grassland or meadow habitats, or on the edges of alkali sink scrub. Often with *Distichlis spicata*, *Frankenia*, and other alkali indicator species. 0–2,740 feet in elevation. Blooms April–October. Annual.	*May occur.* Habitat suitable for this species may be present in alkali soil areas in the project area. While uncommon, some alkali soils are mapped in the project area (Alo, Cropley, Diablo, Danville, and Conejo soils) (NRCS 2019). If treatment areas contain alkali soil, these areas have the potential to provide habitat suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Santa Cruz tarplant *Holocarpha macradenia*	FT	SE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 35–720 feet in elevation. Blooms June–October. Annual.	*Known to occur*. Habitat suitable for this species is present in coastal scrub and annual grassland throughout the project area. One population has been successfully planted at Havey Canyon Trail north of the project area (CNDDB 2022).
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*	—	—	1B.2	Serpentine soils; sandy to gravelly sites. 0–2,295 feet in elevation. Blooms May–September. Annual.	*May occur*. Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Tiburon jewelflower *Streptanthus glandulosus* ssp. *niger*	FE	SE	1B.1	Valley and foothill grassland. Shallow, rocky serpentine slopes. 100–495 feet in elevation. Blooms May–June. Annual.	*May occur*. Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Tiburon mariposa-lily *Calochortus tiburonensis*	FT	ST	1B.1	Valley and foothill grassland. On open, rocky, slopes in serpentine grassland. 165–490 feet in elevation. Blooms March–June. Geophyte.	*May occur*. Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Tiburon paintbrush *Castilleja affinis* var. *neglecta*	FE	ST	1B.2	Valley and foothill grassland. Rocky serpentine sites. 395–1,310 feet in elevation. Blooms April–June. Perennial.	*May occur*. Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Two-fork clover *Trifolium amoenum*	FE	—	1B.1	Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff face. 15–1,015 feet in elevation. Blooms April–June. Annual.	*May occur*. Habitat potentially suitable for this species is present in grassland throughout the project area and at the serpentine soils within the Serpentine Ridge Prairie treatment area.
Western leatherwood *Dirca occidentalis*	—	—	1B.2	On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 80–1,395 feet in elevation. Blooms January–March. Perennial.	*Known to occur*. There are several known occurrences within and just outside of Tilden Regional Park and Huckleberry Botanic Regional Park (CNDDB 2022, EBRPD 2009). This species was observed during the SPR BIO-1 reconnaissance survey upslope from the Park District Fire Department Station parking area, at the southern entrance to Vollmer Peak Trail.
Woodland woollythreads *Monolopia gracilens*	—	—	1B.2	Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 330–3,935 feet in elevation. Blooms March–July. Annual.	*May occur*. Habitat potentially suitable for this species is present in grassland throughout site and at the serpentine soils within the Serpentine Ridge Prairie treatment area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Special-Status Wildlife					
Reptiles and Amphibians					
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT	ST	—	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats. Found primarily on south-facing slopes and ravines, with rock outcrops, deep crevices, or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	*Known to occur*. Reptile trapping studies in portions of the project area have documented many years of occupancy (SBI 2021). Occurrences of this species have been documented in Tilden, Sibley, Redwood, and Anthony Chabot regional parks, and recent trapping efforts have found positive detections in the Tilden South treatment area (SBI 2021; CNDDB 2022). High-quality core habitat use areas (i.e., habitat suitable for Alameda whipsnake breeding and foraging) is present in coastal scrub and coyote brush scrub in the project area, especially where rocky outcrops and mammal burrows are present. Adjacent oak woodlands, grasslands, or ruderal habitat may provide suitable foraging and refugia habitat.
California red-legged frog *Rana draytonii*	FT	SSC	—	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	*May occur*. No occupied breeding habitat is known to be present in the project area; however, suitable breeding, upland, dispersal, and foraging habitat is present throughout the project area. There are several documented occurrences of California red-legged frog within 1 mile of the project area, including in Wildcat Canyon Creek, San Pablo Reservoir, upland in the Sibley Volcanic Preserve, the San Leandro Creek, and north of the Cow Hollow treatment area (CNDDB 2022).
Western pond turtle *Emys marmorata*	—	SSC	—	Ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to approximately 0.3 mile (0.5 km) from water for egg-laying.	*Known to occur*. This species is known to occur in Jewel Lake and surrounding upland and aquatic habitat at Tilden Regional Park. Portions of Sibley Volcanic Preserve and Anthony Chabot Regional Park may also provide habitat suitable for western pond turtle.
Birds					
American peregrine falcon *Falco peregrinus anatum*	FD	SD FP	—	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	*Known to occur*. This species is not known to nest in any treatment area (Van Dam, pers. comm., 2022a). However, habitat suitable for nesting and foraging is present in cliffs and hills throughout the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Bald eagle *Haliaeetus leucocephalus*	FD	SE FP	—	Lower montane coniferous forest, old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nest in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	*May occur*. Nesting habitat suitable for bald eagle is present in Tilden Regional Park near San Pablo Reservoir, along the Upper San Leandro Reservoir in Redwood Regional Park, and along Lake Chabot in Anthony Chabot Regional Park.
Burrowing owl *Athene cunicularia*	—	SSC	—	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	*May occur*. The treatment areas are within the known burrowing owl breeding and overwintering range. Although no occurrences are documented within the treatment area, 18 occurrences were documented in the vicinity of the project based on the 21-quad search (CNDDB 2022). Open grassy areas within the treatment areas may provide breeding and/or overwintering habitat suitable for burrowing owls.
Golden eagle *Aquila chrysaetos*	—	FP	—	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	*Known to occur*. Golden eagle has been documented nesting in Sibley Regional Park, and potential habitat is also present throughout the project area (Van Dam, pers. comm., 2022a). Suitable nesting habitat may potentially be present in large diameter trees within grassland, conifer forest, or woodland forest throughout the project area.
Grasshopper sparrow *Ammodramus savannarum*	—	SSC	—	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	*May occur*. Suitable nesting habitat is present in native grassland habitat throughout the project area. While there are no documented occurrences of this species within the project area (CNDDB 2022; Van Dam, pers. comm., 2022a), populations documented in Orinda, Oakland, and Castro Valley have the potential to migrate and breed in the project area.
Loggerhead shrike *Lanius ludovicianus*	—	SSC	—	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and dense shrubs and brush for nesting.	*May occur*. Suitable nesting habitat is present in the project area, and while infrequent, loggerhead shrike is documented year-round in the vicinity. (eBird 2022).
Tricolored blackbird *Agelaius tricolor*	—	ST SSC	—	Freshwater marsh or wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within one mile of the colony.	*May occur*. Nesting habitat suitable for tricolored blackbird may be present in the wet margins of waterways and ponds in the project area, especially in wet areas within one mile of adjacent to permanent waters of Lake Chabot, the Upper San Leandro Reservoir, Lake Anza, and Jewel Lake.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Vaux's swift *Chaetura vauxi*	—	SSC	—	Nests in large hollow trees and snags in coniferous forests. Often nests in large flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.	*May occur*. Suitable overwintering roosting habitat may be present in large diameter trees in the project area. However, nesting is not expected in the project area as the project area is entirely outside of the breeding range for this species.
White-tailed kite *Elanus leucurus*	—	FP	—	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	*May occur*. Suitable nesting habitat is present within the entire project area, and the species is known to nest in the vicinity.
Willow flycatcher *Empidonax traillii*	—	SE	—	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2,000–8,000 feet elevation. Requires dense willow thickets for nesting and roosting. Low, exposed branches are used for singing posts and hunting perches.	*May occur*. Suitable nesting habitat is present along the edges of riparian areas throughout the project area.
Yellow warbler *Setophaga petechia*	—	SSC	—	Riparian plant associations near water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	*May occur*. Suitable nesting habitat is present along the edges of riparian areas throughout the project area.
Yellow-breasted chat *Icteria virens*	—	SSC	—	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	*May occur*. Suitable nesting habitat is present along the edges of riparian areas throughout the project area.
Fish					
Pacific lamprey *Entosphenus tridentatus*	—	SSC	—	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining. Swift-current gravel-bottomed areas for spawning with water temperatures between 12–18 degrees	*May occur*. Some suitable flowing aquatic habitat is present at Wildcat Canyon Creek, which runs through a portion of Tilden Regional Park. Minimal aquatic connectivity is available for fish to travel from downstream aquatic areas into the project area.
Sacramento perch *Archoplites interruptus*	—	SSC	—	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.	*May occur*. This species has been documented in portions of Wildcat Creek in Wildcat Canyon Regional Park, which flows from portions of the project area at Tilden Regional Park.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Western brook lamprey *Lampetra richardsoni*	—	SSC	—	Require clear, cold water in minimally disturbed watershed with clean gravel near cover for spawning. Most individuals are nonpredatory and restricted to freshwater habitat, but some individuals develop predatory behaviors and can migrate to saline environments. Nest at low-velocity sites with gravel riffles at a depth of about 6 inches (Vladykov and Follet 1965).	*May occur*. Habitat suitable for western brook lamprey may be present in portions of Wildcat Creek in Tilden Regional Park.
Invertebrates					
Crotch's bumble bee *Bombus crotchii*	—	SC	—	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	*May occur*. There are several occurrences of Crotch's bumble bee documented near the Tilden South and Fish Ranch treatment areas in 2015 (CNDDB 2022).
Monarch *Danaus plexippus*	FC	—	—	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Along migration routes and within summer ranges, monarch butterflies require two suites of plants: (1) host plants for monarch caterpillars, which are primarily milkweeds (*Asclepias* spp.) within the family Apocynaceae upon which adult monarchs lay eggs; and (2) nectar-producing flowering plants of many other species that provide food for adult butterflies. Having both host and nectar plants available from early spring to late fall and along migration corridors is critical to the survival of migrating pollinators.	*May occur*. The project falls within the area mapped as "early breeding zone," and this region is a high-priority site for monarch protection (Xerces Society 2016, Xerces Society 2017). There are several overwintering population occurrences within three miles of the project area, along the coast of San Francisco Bay from Berkeley to Hayward; the closest being 2017 record 2 miles west of the northern end of the project area (CNDDB 2022). Monarchs may roost in forested habitat throughout site, and monarchs may lay eggs in milkweed areas in grassland and scrubland.
Western bumble bee *Bombus occidentalis*	—	SC	—	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	*May occur*. There are several documented occurrences within treatment areas at Tilden Regional Park, Redwood Regional Park, and Lake Chabot Regional Park in 1984, 1966, and 1994, respectively, and species is considered presumed extant in the area (CNDDB 2022).

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Mammals					
American badger *Taxidea taxus*	—	SSC	—	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows. Adapted to a variety of habitat types.	*May occur*. Two historic (1925 and 1930) records of this species are documented in the areas near Anthony Chabot Regional Park (CNDDB 2022). Although these records are historic, the species is potentially extant in the area because this species is under-documented in the database, and habitat potentially suitable for American badger is present throughout grassland, scrub, and forested habitats in the project area.
Mountain lion *Puma concolor*	—	SC	—	Mountain lions inhabit a wide range of ecosystems, including mountainous regions, forests, deserts, and wetlands. Mountain lions establish and defend large territories and can travel large distances in search of prey or mates. The Central Coast and Southern California Evolutionarily Significant Units (ESUs) were granted emergency listing status in April of 2020, and California Department of Fish and Wildlife (CDFW) is currently reviewing a petition to list these ESUs as threatened under CESA.	*Known to occur*. Mountain lions have been documented via scat, tracks, and motion-activated wildlife cameras in the project area, and it is likely that the treatment areas occupy a portion of the home range of many individual lions (iNaturalist 2022; Yovovich et al. 2020). Potential den habitat (e.g., caves, cavities, thickets) may be present within treatment areas.
Pallid bat *Antrozous pallidus*	—	SSC	—	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	*May occur*. Pallid bats may establish maternity or overwintering roosts in abandoned buildings, caves, or large diameter trees in the project area.
Ringtail *Bassariscus astutus*	—	FP	—	Riparian habitats, forest habitats, and shrub habitats in lower to middle elevations.	*May occur*. Suitable riparian habitat is present across the project area, and the entire project falls within range for this species. There are four unverified occurrences of ringtail within 3 miles of the project area; however, these records are based on scat only (iNaturalist 2022).
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	—	SSC	—	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest-building materials.	*Known to occur*. San Francisco dusky-footed woodrat middens were commonly observed in all treatment areas during the reconnaissance surveys, especially in dense wooded wet or riparian oak woodland, bay forest, and chaparral.
Townsend's big-eared bat *Corynorhinus townsendii*	—	SSC	—	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	*May occur*. This species may roost in large-diameter trees, abandoned buildings, or caves within the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR[1]	Habitat	Potential for Occurrence[2]
Western mastiff bat *Eumops perotis californicus*	—	SSC	—	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	*May occur*. Habitat potentially suitable for western mastiff bat is present in forested areas of the project area.
Western red bat *Lasiurus blossevillii*	—	SSC	—	Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	*May occur*. Habitat potentially suitable for western red bat is present in forested areas of the project area.

[1]Legal Status Definitions: CESA = California Endangered Species Act; CEQA = California Environmental Quality Act; CRPR = California Rare Plant Rank; ESA = Endangered Species Act; ESU = Evolutionarily Significant Unit.

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 percent of occurrences threatened; high degree and immediacy of threat)
0.2 Moderately threatened in California (20-80 percent occurrences threatened; moderate degree and immediacy of threat)
0.3 Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

State: FP = Fully Protected (legally protected)
SSC = Species of Special Concern (no formal protection other than CEQA consideration)
SE = State Listed as Endangered (legally protected)
ST = State Listed as Threatened (legally protected)
SD = State Delisted

Federal: FE = Federally Listed as Endangered (legally protected)
FT = Federally Listed as Threatened (legally protected)
FD = Federally Delisted

[2] Potential for Occurrence Definitions

May occur: Habitat suitable for the species is available; however, there are little to no other indicators that the species might be present.
Known to occur: Species has been documented within the treatment site.

Sources: CCH 2022; CNDDB 2022; CNPS 2022; eBird 2022; iNaturalist 2022; NRCS 2019; SBI 2021; USFWS 2022a; Van Dam, pers. comm., 2022a; Vladykov V.D., 1965.

IMPACT BIO-1

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects on the 41 special-status plant species with potential to occur in treatment areas, as described in the following section. 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 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.

Six of the special-status plant species with suitable habitat in the treatment areas—Bolander's water-hemlock, Contra Costa goldfields, Hoover's button-celery, Jepson's coyote-thistle, long-styled sand-spurrey, and minute pocket moss—are typically associated with wet areas (e.g., wetlands, mesic areas in forest or grassland, streams, springs, seeps) (Table 4.5-2). WLPZs ranging from 50 to 150 feet adjacent to all Class I and Class II streams and lakes (defined under Forest Practice Rules as a permanent natural body of water of any size, or an artificially impounded body of

water having a surface area of at least 1 acre; CAL FIRE 2020) within the project area would be implemented and WLPZs of sufficient size to avoid degradation of downstream beneficial uses of water would be established adjacent to all Class III and Class IV (e.g., drainage canals, irrigation ditches) streams for prescribed burning, mechanical treatment, manual treatment, prescribed herbivory, and herbicide application, which would minimize some adverse effects on wetland and streambank associated species. Requirements under SPR HYD-4 requires the retention of at least 75 percent of surface cover and undisturbed area within WLPZs. However, not all impacts would be avoided as manual treatments within WLPZs are allowed and up to 25 percent of cover may be removed, per SPR HYD-4, which could potentially result in disturbance to streambank, wetland, spring, and seep habitat suitable for special-status plants. Therefore, implementation of WLPZ restrictions under SPR HYD-4 would not be sufficient in protecting special-status plants within the WLPZ. There may be additional wetland, spring, and seep habitat suitable for special-status plants outside of a WLPZ. Wetland delineations would be conducted to determine if other wetland, spring, and seep habitats are located on the properties; where aquatic habitats are delineated, no-disturbance buffers of at least 25 feet around them would be implemented (refer to Impact BIO-4 below). Additionally, pursuant to SPR HYD-3, prescribed herbivory treatments would be excluded within 50 feet of environmentally sensitive areas such as waterbodies, wetlands, or riparian areas using temporary fencing or active herding. Although these measures would avoid and minimize some adverse effects on special-status plants typically associated with wet areas, all habitat potentially suitable for these seven species cannot be avoided and establishing WLPZs and protective buffers would not fully prevent impacts on the species. As a result, SPR BIO-7 would be implemented.

Ten species with potential to occur in the project area are strongly associated with serpentine soils: Brewer's western flax, chaparral harebell, fragrant fritillary, Loma Prieta hoita, most beautiful jewelflower, Presidio clarkia, Tiburon buckwheat, Tiburon jewelflower, Tiburon mariposa-lily, and Tiburon paintbrush (Table 4.5-2). Serpentine-derived soil may be present at the Serpentine Prairie Ridge treatment area, but serpentine and serpentine-derived soils are not mapped in any other treatment areas (NRCS 2019). Other special-status plants associated with alkaline soils, such as San Joaquin spearscale and others as noted in Table 4.5-1, have potential to occur in Alo, Cropley, Diablo, Danville, and Conejo soils mapped in small patches throughout the project area.

SPR BIO-7, which requires protocol-level surveys for special-status plants to be conducted prior to implementation of manual, mechanical, prescribed burning, herbicide, and prescribed herbivory treatments, would apply to all treatment activities, including maintenance treatments. Of the 41 special-status plant species that may occur within the treatment areas, 10 special-status plants are listed under CESA or ESA and 31 special-status plants are not listed under CESA or ESA. Prior to project implementation, SPR BIO-7 requires protocol-level surveys for the 10 plants listed under CESA or ESA with potential to occur (i.e., Contra costa goldfields, large-flowered fiddleneck, pallid manzanita, presidio clarkia, San Francisco popcorn flower, Santa Cruz tarplant, Tiburon jewelflower, Tiburon mariposa-lily, Tiburon paintbrush, and two-forked clover). 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.

Several special-status plants that may occur within the treatment areas and not listed under CESA or ESA are herbaceous annual species or geophytes, as indicated in Table 4.5-2. Impacts on these species would be avoided by implementing treatment activities that do not kill or remove vegetation or disturb the soil (i.e., manual treatment activities) during the dormant season (i.e., when the plant has no aboveground parts), which would generally occur after seed set and before germination. Typically, germination occurs after the first significant rainfall (approximately 0.5 inches), and cold snap, which generally occurs between October and December (Levine et. al 2008). Treatment activities that could potentially kill or remove vegetation or disturb the soil (i.e., mechanical treatments, herbicide application, prescribed herbivory, and prescribed 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 treatments that do not kill or remove vegetation or disturb the soil (i.e., manual 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 must be implemented, as described below. Other special-status plants

not listed under CESA or ESA that have potential to occur within the treatment areas are perennial species, as indicated in Table 4.5-2, which could not be avoided in the same manner as herbaceous annual species or geophytes; therefore, protocol-level surveys under SPR BIO-7 would be necessary to identify them prior to implementing treatment activities regardless of the timing of treatments.

Although the Park District has conducted protocol-level surveys for special-status plants on portions of the project area, these surveys do not cover all treatment areas and the botanical inventories are generally more than five years old, so additional protocol-level botanical surveys would still be required prior to implementing treatments, according to SPR BIO-7 and pursuant to *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018).

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 50 feet would be established around the area occupied by the species within which manual treatments, mechanical treatments, prescribed burning, herbicide application and prescribed herbivory would not occur unless a qualified RPF or biologist determines, based on substantial evidence, 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 would 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.

Pallid Manzanita

Pallid manzanita (a perennial shrub) is the only state or federally listed plant species that has been previously identified in treatment areas. It is known to occur at Tilden Regional Park, Sibley Volcanic Preserve, and Redwood Regional Park (USFWS 2002a). This species is a fire-adapted obligate seeder, which reproduces from seeds, and it is reliant on fire to make the soil and seed suitable for germination. Fire suppression in the region surrounding the project area has led to structural changes in this species habitat, gradually increasing the density of forests leading to a microclimate unsuitable for pallid manzanita to thrive (USFWS 2002a). This species is also threatened by increasing plant disease, loss of habitat due to development, herbicide spraying, hybridization, increased risk of high-intensity destructive wildfire, and competition from invasive plants (USFWS 2002a).

In areas where this species is known to occur, and if surveys for SPR BIO-7 determine the species is present at other locations within the treatment areas, implementation of Mitigation Measure BIO-1a 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 would generally be a minimum of 50 feet from special-status plants, but the size and shape of the buffer zone may be adjusted if a qualified RPF or botanist determines that a smaller buffer would 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.

Conclusion

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 the treatment activities and intensity of disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. The inclusion of land in the proposed treatment area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions present in the areas outside the treatable landscape are essentially the same as those

within the treatable landscape; therefore, the potential impact on special-status plants is also the same, as described above. Biological resource SPRs that apply to project impacts under Impact BIO-1 are SPR AQ-3, SPR AQ-4, SPR BIO-1, SPR BIO-2, SPR BIO-7, SPR BIO-9, SPR GEO-1, SPR GEO-3, SPR GEO-4, SPR GEO-5, SPR GEO-7, and SPR HYD-5. Biological resource mitigation measures that apply to project impacts under Impact BIO-1 are Mitigation Measure BIO-1a and Mitigation Measure BIO-1b. 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 and maintenance treatments could result in direct or indirect adverse effects on 29 special-status wildlife species and habitat suitable for these species within the project 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.

Alameda Whipsnake

Habitat suitable for Alameda whipsnake is concentrated around mosaics of scrub communities and extends into adjacent grasslands, woodlands, and open woodland habitat in Alameda and Contra Costa Counties (Swaim and McGinnis 1992). Alameda whipsnakes have been documented frequently occurring up to a mile from scrub communities and up to four miles from scrub as a maximum distance (Swaim 1994; Alvarez et al. 2005). Swaim (1994) found most adult Alameda whipsnakes had activity centers or core areas (i.e., areas of concentrated use with spatial and/or temporal overlap of multiple individuals). Alameda whipsnake core scrub habitat (core scrub) is composed of variable native communities including maritime chaparral, coastal scrub, coyote brush scrub, and serpentine scrub with patch sizes as small as 0.5 acre supporting breeding populations (SBI 2012). Alameda whipsnake also frequently use grassland and open woodlands adjacent to core scrub (Swaim and McGinnis 1992; USFWS 2006). Foraging and dispersal habitat includes woodland and grassland that is contiguous with core scrub habitat (USFWS 2006). Rock outcrops and talus likely enhance habitat for Alameda whipsnake because they provide secure cover and promote abundant lizard prey populations. Core areas most commonly occur on northeast, southeast, south, and southwest facing slopes (Swaim 1994; Swaim and McGinnis 1992). Closed canopy tree stands dominated by nonnative trees such as eucalyptus and Monterey pine are considered degraded or unsuitable habitat (Swaim and McGinnis 1992). Generally, the species is highly mobile and able to traverse less suitable or unsuitable habitats on a regular basis while moving between patches of high-quality core scrub habitat in their home range. This species is endemic to the Alameda and Contra Costa Counties, and the current population is fragmented into seven distinct regional metapopulations. The project area spans the range of four of the seven remaining population fragments for this species (USFWS 2002a).

Alameda whipsnakes are semiarboreal and will climb into the tops of dense shrubs and into trees to forage and thermoregulate. Adult Alameda whipsnakes have a bimodal seasonal activity pattern, with a peak during the spring mating season and a smaller peak during the late summer and early fall (Swaim and McGinnis 1992; USFWS 2011). During the winter (generally November through February or March), Alameda whipsnakes typically retreat into burrows, rock outcrops, or similar features, although short above-ground movements may still occur (USFWS 2000). Alameda whipsnakes emerge in late February or March depending on weather conditions (Swaim and McGinnis 1992). Courtship and mating occur from late March through mid-June. During the courtship period, males move extensively, while females appear to remain at or near their winter retreat, where mating occurs. Young appear in late summer and fall, and hatchlings have been observed above ground from August through November (Swaim and McGinnis 1992).

Alameda whipsnake is known to occur in portions of the project area, and suitable core, dispersal, and foraging habitat suitable for this species is present in all treatment areas. There are 21 total occurrences of Alameda whipsnake within the 21-quad search of the project area (CNDDB 2022). Six occurrences overlap the project area in Tilden Regional Park, Sibley Volcanic Preserve, Redwood Regional Park, and Anthony Chabot Regional Park (CNDDB 2022). One of these (in Tilden Regional Park) is historic, dating back to the 1940s, but five other occurrences overlapping the project area were documented from between 1999 and 2017 (CNDDB 2022). The Park District conducted Alameda whipsnake surveys throughout the park system for many years, including areas of Sibley Volcanic Preserve and Tilden Regional Park which overlap the Nimitz Way,

Meadows Canyon, Tilden South, Sibley Wildlife Corridor, Sibley Western Hills, and Sibley North treatment areas. Positive detections have been documented in the Tilden South treatment area as recently as 2021 (SBI 2021).

Alameda whipsnake is threatened primarily by habitat loss and fragmentation. The majority of this species' historic range is developed and has been fragmented by highways, including SR 24. In addition, the species range has been severely adversely affected by fire suppression, which has changed the distribution of core scrub habitat, woodland, and grassland, and led to more closed-canopy core scrub habitat that is unsuitable for whipsnake basking and thermoregulation (USFWS 2011). Native grassland and coastal prairie habitats within this species' range have become fragmented and highly invaded by nonnative plants; Alameda whipsnake has not been documented utilizing stands of eucalyptus or Monterey pine (Swaim and McGinnis 1992). Alameda whipsnakes in the treatment areas are likely to encounter dispersal barriers such as main roads, patches of unsuitable nonnative forest habitat, or human presence during recreational activities. The Caldecott Tunnel, which allows a continuous patch of forested and shrubland wildland to pass over the SR 24 tunnel in the Berkeley hills, is located in the center of the project area. The land over the tunnel may serve as an important corridor allowing for gene flow between the fragmented populations to the north and south of SR 24.

The potential for initial treatment activities and maintenance treatments to result in adverse effects on Alameda whipsnake was examined in the PEIR. If present, Alameda whipsnake could be disturbed during initial treatment or maintenance activities, resulting in the disruption of essential behavior patterns (e.g., breeding, feeding, sheltering) to the extent that injury or mortality occurs. In addition, Alameda whipsnake could be inadvertently injured or killed by heavy machinery, personnel, vehicles, and fire from prescribed broadcast burns and pile burning could result in injury or mortality if the piles are placed on or near burrows. Herbicide application and prescribed herbivory treatments are not expected to result in adverse effects on Alameda whipsnake. Personnel implementing herbicide application treatments would conduct these activities on foot, and the likelihood of a whipsnake or burrow being inadvertently crushed or otherwise destroyed by personnel, goats, or sheep would be very low. Whipsnakes in the area would likely flee.

Indirect beneficial effects in the form of improved native habitat conditions and reduced severity of wildfire would result from the proposed removal of nonnative eucalyptus, Monterey pine, and French broom. Habitats dominated by these species would be converted to more native-dominated habitats such as oak-bay woodland, grassland, and core scrub communities, which are more suitable for Alameda whipsnake. In particular, the removal of nonnative species that are encroaching into core scrub habitats could promote conversion of these areas from nonnative scrub and forest to core scrub, improving habitat for Alameda whipsnake. In addition, treatment activities may also result in the enhancement of Alameda whipsnake habitat where patches of extremely dense (near 100 percent canopy cover) and decadent scrub habitat under the existing conditions are treated to allow for increased sunlight penetration and reduced scrub canopy cover post-treatment (USFWS 2000). Alameda whipsnake are documented utilizing open stands of core scrub habitat characterized by less than 75 percent canopy cover (Swaim and McGinnis 1992, Swaim 1994), and therefore, selective thinning of extremely dense core scrub areas would likely improve overall habitat quality. Treatment may also enhance Alameda whipsnake habitat in isolated patches of grassland and oak-bay woodland habitats that are currently adjacent to nonnative scrub or extremely dense scrub habitat. As scrub is thinned for reduced canopy cover or nonnative intrusion, it would be converted into suitable habitat for Alameda whipsnake and conversely, the adjacent stands of grassland and woodland would then function as suitable dispersal and foraging habitat for Alameda whipsnake. Vegetation treatment that reduces the occurrence of catastrophic wildfires may result in beneficial effects on Alameda whipsnake because large, hot fires can kill individuals and may adversely affect the function of the core scrub habitat (USFWS 2002a).

Because Alameda whipsnake may be present over relatively long distances from core scrub habitat in the treatment area (i.e., up to approximately one mile), it is unlikely that all habitat potentially suitable for the species can be clearly avoided pursuant to SPR BIO-1. Additionally, core scrub habitat in the treatment area has experienced many years of fire suppression, leading to the accumulation of dry, decadent material that creates a high fire risk, and avoiding these areas would not likely be feasible while also achieving project wildfire risk reduction goals. As a result, SPR BIO-10 would apply, which requires focused or protocol-level surveys by a qualified RPF or biologist within areas containing habitat suitable for the species before vegetation removal or treatment activities, or requires that presence of the species is assumed. Due to the ecology of this species, Alameda whipsnake is unlikely to be observed during focused visual encounter surveys. The Park District has conducted many years of trapping efforts throughout the

project area, and Alameda whipsnake are known to be present. Therefore, presence of this species is assumed within all habitat suitable for Alameda whipsnake in the treatment areas.

Within all habitat suitable for Alameda whipsnake in the project area, Mitigation Measure BIO-2a would be implemented. This mitigation measure requires that mortality or disturbance of individuals be avoided, and habitat function is maintained. Project-specific avoidance strategies that would be implemented under Mitigation Measure BIO-2a are adapted from previous methods developed for the Park District's Federal Emergency Management Agency (FEMA) Fuels Reduction Wildfire Hazard Management Plan, which has operated in Alameda whipsnake habitat from 2018 through the present (2023) without any Alameda whipsnake take (i.e., injury, mortality, substantial modification of habitat) (EBRPD 2019a; EBRPD 2020; EBRPD 2021). Project-specific avoidance measures required under Mitigation Measure BIO-2a are also adapted from the 2013 Biological Opinion for the FEMA project (USFWS 2013), as well as techniques developed by qualified RPFs or biologists, Park District Fire Department staff, and Park District's Stewardship department, which have been demonstrated to avoid injury, mortality, and substantial modification of habitat. The work covered under the Biological Opinion would occur in habitat similar to and directly adjacent to the proposed project and would be implemented using similar treatment activities as the proposed project. Measures developed under the Park District's FEMA fuels reduction project and the 2013 Biological Opinion are designed to avoid injury, mortality, disturbance, and significant habitat modification or degradation, and techniques developed by RPFs and Park District staff have added detail to further enhance the effectiveness of these techniques in maintaining habitat function. These include requirements for a pretreatment survey prior to manual, mechanical, and prescribed burning activities, presence of a biological monitor when work is occurring in core scrub, regular equipment check, seasonal restrictions for heavy equipment (November 1 through March 31), treatment temperature restrictions in suitable habitat, requirements for responsible debris management, requirements for safe pile burning, and treatment of understory vegetation first in forested environments. Additional avoidance strategies were developed following meetings with CDFW, including increased qualifications for the biological monitor for work involving mechanical vegetation removal in Alameda whipsnake core scrub habitat, additional implementation guidance for project activity temperature restrictions, guidance on debris management and avoidance of refugia habitat, and increased guidance to avoid collision of vehicles with dispersing Alameda whipsnake. The record of mitigation implementation since 2018 and the absence of documented take over this number of treatment years provide substantial evidence that the proposed avoidance measures under Mitigation Measure BIO-2a would continue to prevent take of Alameda whipsnake.

Habitat function for Alameda whipsnake would be maintained because implementation of SPRs and mitigation measures would result in retention of habitat features important to the species. SPR BIO-5 requires that project activities avoid type conversion of chaparral and coastal sage scrub habitat. Because coastal sage scrub and chaparral serve as important components of core scrub habitat for whipsnake, compliance with SPR BIO-5 would help ensure that habitat function for Alameda whipsnake is maintained. This SPR includes retention of a minimum of 35 percent relative cover of coastal sage scrub and chaparral habitat to prevent type conversion in ecological restoration treatments and no ecological restoration treatments would occur in coastal sage scrub and chaparral habitats that are within their natural fire return interval unless the project proponent demonstrates with substantial evidence that the habitat function of chaparral and coastal sage scrub would be improved. Studies on Alameda whipsnake habitat use demonstrate that the species is more likely to be found in areas where shrub canopy is characterized as open, or less than 75 percent cover (Swaim 1994, Swaim and McGinnis 1992). Whipsnakes have been shown to avoid areas with dense blackberry cover (Van Dam, pers. comm., 2022b). Treatments in woodland environments would remove ladder fuels and Himalayan blackberry (*Rubus spp.*) represents a dominant ladder fuel in oak woodlands throughout the project area. Within the post-treatment condition to create a fire-resistant mosaic of grassland, shrub islands, and small stands of limbed-up trees (see Attachment B for specific treatment objectives by vegetation type) would support improved sunlight penetration for reptile thermoregulation and habitat access for Alameda whipsnake use.

Because Alameda whipsnake presence is assumed within all suitable habitat, Mitigation Measure BIO-2a is required for all treatment activities within core scrub and adjacent grassland and suitable woodland. Implementation of protective measures under Mitigation Measure BIO-2a would maintain habitat function for Alameda whipsnake by creating shrub islands, retaining a mosaic of shrub understory, and protecting key refugia habitat features for Alameda whipsnake such as rocky outcrops and mammal burrows. USFWS defines "core" habitat areas used by

Alameda whipsnake as suitable vegetation patches that are at least 0.5 acre in size, or 0.2 acre and size but within 50 feet of another patch of shrubs at least 0.5 acre in size (USFWS 2002a; USFWS 2011). The Park District has previously used these general guidelines to reduce fuel in chaparral habitat while retaining "shrub islands" which retained habitat function for whipsnake. In addition to considering the size of scrub patches, vegetation removal activities would retain patches of core scrub habitats, in irregular, oblong shapes that maintain a natural looking condition on the landscape. Much of the habitat suitable for Alameda whipsnake in Tilden Regional Park and Sibley Volcanic Preserve has experienced long-term fire suppression and is outside of its natural fire regime (USFWS 2002a), and it is anticipated that careful, selective thinning of shrub habitat may increase sunlight penetration and thereby improve basking and foraging habitat for this species post-treatment.

Pursuant to Mitigation Measure BIO-2a, the Park District contacted USFWS by email on March 13, 2023, to notify them of their proposed avoidance measures and their determination that habitat function would be maintained for Alameda whipsnake. On January 25, 2023, the Park District sent a memo to CDFW describing the measures that would be taken to avoid mortality, injury, and disturbance to Alameda whipsnake and to maintain habitat function in compliance with Mitigation Measure BIO-2a. Following the initial January 2023 submittal, CDFW and the Park District held a consultation meeting to discuss Alameda whipsnake on March 1, 2023. This consultation resulted in refinements to avoidance measures for Alameda whipsnake that have been integrated into the PSA and MMRP and were emailed to CDFW on March 8, 2023. A follow-up Alameda whipsnake memo summarizing take avoidance measures, with the full draft PSA and Addendum to the Program EIR, was emailed to CDFW on April 26, 2023. On May 9, 2023, a meeting to discuss achieving wildfire resilience, habitat restoration, and species protection in Alameda Whipsnake Habitat was organized which and included attendees from CDFW, the Board of Forestry and Fire Protection, California State Parks, Ascent, and the Park District. Then, on May 11, 2023, an Alameda whipsnake follow-up meeting was conducted to address CDFW avoidance specific to the East Bay Hills Vegetation Treatment Project. On June 2, 2023, the Park District submitted a memo to CDFW explaining why evidence supports that the avoidance strategy would be successful, as a follow-up to the May 11, 2023, Alameda whipsnake consultation meeting regarding the East Bay Hills Vegetation Treatment Project, including an attached annotated draft MMRP. No further additional refinements to the project description or measures resulted from the consultation. 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.

California Red-Legged Frog

California red-legged frog is endemic to California and Baja California, Mexico. This species has been extirpated from 70 percent of its historic range and is threatened by habitat loss, fragmentation of extant populations, water contamination, and predation from invasive species (USFWS 2002b). Contra Costa and Alameda Counties contain the majority of known occupied California red-legged frog populations in the San Francisco Bay area; within Alameda and Contra Costa Counties, California red-legged frogs are known to occur within 33 streams, representing 13 percent of the total documented occupied streams within the species' range (USFWS 2022b).

There are no documented occurrences of California red-legged frog in the project area, but California red-legged frog individuals may potentially disperse into portions of the project area. Occurrences have been documented within two watersheds that overlap the project area: San Leandro Creek and San Pablo Creek watersheds (USGS 2022). The nearest documented California red-legged frog occurrence to the project area is a 1956 occurrence in Wildcat Creek approximately 0.2 mile southwest of the Meadows Canyon treatment area (CNDDB 2022). California red-legged frogs are known to occur in San Pablo Reservoir, which is located approximately 0.9 mile northeast of the Tilden Regional Park treatment areas (CNDDB 2022). Additionally, one 1997 California red-legged frog occurrence is documented 0.7 mile northwest of the Sibley Western Hills Treatment Area (in Sibley Volcanic Regional Preserve), and a 2008 occurrence was documented in San Leandro Creek, located 0.8 mile north of the Cow Hollow treatment area. There is no critical habitat for California red-legged frog in the project area.

Some of the herbicides (e.g., glyphosate, triclopyr, imazapyr) that may be applied within the treatment areas are subject to the California Red-Legged Frog Injunction (Center for Biological Diversity v. US EPA, 2006, Case No. 02-1580-JSW), and therefore, specific application requirements apply in areas subject to the injunction (US EPA 2022). Portions of the treatment areas in Sibley Regional Park and Redwood Regional Park overlap mapped non-critical habitat sections of the herbicide injunction areas; therefore, this injunction applies to these portions of the project.

Studies have demonstrated that California red-legged frogs remain very close to breeding ponds during the nonbreeding season and typically do not move more than a few hundred feet into upland habitats (Bulger et al. 2003; Fellers and Kleeman 2007). Breeding habitat potentially suitable for California red-legged frog is present throughout the project area, although no on-site aquatic resources are known to support active breeding. Jewel Lake (located 800 feet east of the Meadows Canyon treatment area) is currently unoccupied but may provide breeding habitat suitable for California red-legged frogs that could migrate from other areas in the future. A protocol-level California red-legged frog survey was conducted within Jewel Lake between April and July, 2020, and no adult frogs or tadpoles were observed (Sequoia 2020; USFWS 2005). Another protocol-level survey was conducted within Jewel Lake in 2022, and no California red-legged frog were observed at any life stage (AECOM 2022). Breeding habitat potentially suitable for California red-legged frog includes a small stock pond in the Cow Hollow treatment area and portions of San Leandro Creek adjacent to the Ten Hills treatment area. Many streams within treatment areas generally do not contain deep water long enough for California red-legged frog larval development and therefore do not provide breeding habitat suitable for the species.

Adult and juvenile California red-legged frogs are known to travel through upland habitat (e.g., riparian, woodland, grassland) to migrate between breeding and nonbreeding sites (e.g., other ponds, deep pools in streams, moist and cool riparian understory, burrows), for access to refugia and foraging habitat, or to disperse to new breeding locations. Movements through upland habitat are typically up to approximately 1.6 kilometers (1 mile) over the course of a wet season (Fellers and Kleeman 2007; CDFW 2008). During migration, California red-legged frogs may travel long distances from aquatic habitat; individuals will travel in straight lines irrespective of vegetation types and have been documented to move over 1.7 miles between aquatic habitat sites. California red-legged frogs generally make overland movements (i.e., dispersal, migration) during the wet season (i.e., October to May) and these movements are typically made at night (Bulger et al. 2003). Dispersal and movement habitat potentially suitable for California red-legged frog is present in treatment areas. The treatment areas in the northern portion of the project are within feasible dispersal distance from potentially occupied aquatic habitat at Wildcat Creek and San Pablo Reservoir. All of the treatment areas within Anthony Chabot Regional Park are within potential dispersal distance from San Leandro Creek. Additionally, the Ten Hills treatment area is located upslope from the San Leandro Creek and between San Leandro Reservoir and a small unnamed pond. The Ten Hills treatment area provides high-quality dispersal and foraging habitat for California red-legged frog, and there are few human-made barriers to movement (e.g., roads, residential development, urban development) between the treatment areas and the known California red-legged frog occurrences in San Leandro Creek.

To avoid injury or mortality of California red-legged frogs near aquatic habitat, a WLPZ of 50 to 150 feet adjacent to all Class I and Class II streams and lakes would be implemented, pursuant to SPR HYD-4, and WLPZs of sufficient size to avoid degradation of downstream beneficial uses of water would be established adjacent to all Class III and Class IV streams. SPR HYD-4 also requires equipment limitation zones adjacent to Class III and Class IV watercourses with minimum widths of 25 feet. Also pursuant to SPR HYD-4, pile burning would be conducted outside of the WLPZs. Wetland delineations would be conducted to determine if other wetland, spring, and seep habitats are present within a treatment area, and where aquatic habitats are delineated, no-disturbance buffers of at least 25 feet would be implemented (refer to Impact BIO-4 below). Additionally, pursuant to SPR HYD-3, prescribed herbivory treatments would be excluded within 50 feet of areas identified as environmentally sensitive areas such as waterbodies, wetlands, or riparian areas using temporary fencing or active herding.

To avoid injury or mortality of dispersing California red-legged frog, treatment activities would be limited to daytime hours (i.e., 7:00 am to 5:00 pm, typically). Additionally, pursuant to SPR GEO-1, mechanical treatments, herbicide application, and prescribed herbivory would be suspended if it is raining, soils are saturated, or soils are wet enough to mobilize herbicides or be compacted by mechanical activities. Further, mechanical treatments may not resume until precipitation stops and soils are no longer saturated or very wet.

However, these measures may not avoid impacts on California red-legged frogs if frogs are present outside of established WLPZs or buffers, if non-mechanical treatment activities implemented within the WLPZ resulted in injury or mortality of frogs, or if frogs are moving, sheltering, or foraging during the daytime or outside of the shut-down periods for saturated and wert conditions. Therefore, SPR BIO-10 would apply, and the Park District would either

conduct protocol-level surveys for California red-legged frog pursuant to the *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog* (USFWS 2005) within habitat potentially suitable for the species, or presence of the species would be assumed and Mitigation Measure BIO-2a would be implemented. If protocol-level surveys are conducted and California red-legged frogs are not detected, then no mitigation for the species would be required and the buffers would not be required. If California red-legged frogs are detected, Mitigation Measure BIO-2a would be implemented. Under Mitigation Measure BIO-2a, the project proponent would require additional pretreatment surveys, and other measures recommended by a qualified RPF or biologist as necessary to avoid injury to or mortality of California red-legged frog. Avoidance strategies that would be implemented under Mitigation Measure BIO-2a are adapted from previous methods developed for the San Jose Water Forest Heath Fuels Reduction CalVTP PSA (San Jose Water 2022). These measures were drafted and reviewed during development of the PSA by San Jose Water Company, CAL FIRE, and USFWS in 2022. Adapted measures include requirements for a pretreatment survey prior to any treatment activities occurring from October 1 through April 15 within 300 feet of Class I or Class II streams and within or adjacent to other sensitive habitat areas, limits to mastication at 6 inches above the ground or greater, review of large woody debris greater than 12 inches in diameter prior to moving it, and limits of mechanized operations within 30 feet of a Class III stream or other potential sensitive habitat.

Habitat function for California red-legged frogs would be maintained because implementation of SPRs, mitigation measures, and protective measures would result in retention of habitat features important to the species. Treatments would retain a mosaic of habitats in the understory that would provide for habitat continuity and rapid regeneration of treated areas by the native species that are retained. Treatment activities would retain most live trees (i.e., conifers, hardwoods) greater than 24 inches dbh (except for hazard trees) and within ecological restoration and WUI fuel reduction treatment areas, at least two snags would be retained per acre to provide wildlife habitat. Two to eight larger diameter trees per acre (generally greater than 10 inches dbh and greater than 20 feet in length may be retained onsite (see Section 2.1, "Proposed Treatments"), providing important refugia habitat for wildlife including California red-legged frog. When masticating, operators would minimize disturbance to down wood where feasible, only moving large pieces of woody debris when necessary to reduce fire behavior or gain access to larger portions of treatment areas, with a per acre retention target of 1–4 downed logs per acre. Forest understory vegetation would be maintained in ecological restoration areas consistent with the understory descriptions in the Manual of California Vegetation (Sawyer et al. 2009). Residual masticated or chipped material would be no more than 4 to 6 inches in depth. Chips would be placed on open areas where they would not impede wildlife use of refugia, such as rock piles and mammal burrows, and would not cover more than 20 percent of a given treatment area. Pursuant to SPR HYD-4, 75 percent surface cover in WLPZs would be retained. Additionally, SPR BIO-4 requires retention of 75 percent overstory and 50 percent understory canopy of native vegetation within riparian habitat and would be limited to removal of uncharacteristic or undesired fuel loads (e.g., dead or dying vegetation, invasive plants).

Within all habitat suitable for California red-legged frog in the project area, Mitigation Measure BIO-2a would be implemented. Pursuant to Mitigation Measure BIO-2a, the Park District contacted USFWS by email on March 13, 2023, to notify them of their proposed avoidance measures and their determination that habitat function would be maintained for California red-legged frog. Mitigation Measure BIO-2a requires consultation with USFWS on their proposed measures to avoid disturbance, injury, or mortality of California red-legged frog and their determination that California red-legged frog habitat function would be maintained. No refinements to the project description or measures resulted from this consultation. 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 Pond Turtle

Aquatic habitat potentially suitable for western pond turtle is present within ponds and streams in and adjacent to the project area, and this species could use upland habitat within the project area in the vicinity of these features (Reese and Welsh 1997). Western pond turtles may be present within upland habitat up to approximately 1,500 feet from water.

Pursuant to SPR HYD-4, a WLPZ of 50 to 150 feet adjacent to all Class I and Class II streams and lakes would be implemented, and WLPZs of sufficient size to avoid degradation of downstream beneficial uses of water would be established adjacent to all Class III and Class IV (e.g., drainage canals, irrigation ditches) streams. However, these measures may not avoid impacts on western pond turtles if turtles are present further than 150 feet from stream or

lake habitat, are present within ponds smaller than one acre (i.e., not considered a lake under Forest Practice Rules), or if manual activities implemented within the WLPZ resulted in injury or mortality of turtles. Additionally, pursuant to SPR HYD-3, prescribed herbivory treatments would be excluded within 50 feet of environmentally sensitive areas such as waterbodies, wetlands, or riparian areas using temporary fencing or active herding. The potential for treatment activities and maintenance treatments to result in adverse effects on western pond turtle was examined in the PEIR.

Per SPR BIO-1, if it is determined that adverse effects on western pond turtles can be clearly avoided by physically avoiding the habitat suitable for these species, then no mitigation would be required. However, because western pond turtles may be present relatively large distances (i.e., up to approximately 1,500 feet) from aquatic habitat in the treatment area, it is unlikely that all habitat potentially suitable for the species can be avoided. As a result, SPR BIO-10 would apply, and focused visual encounter surveys for western pond turtle would be conducted by a qualified RPF or biologist within upland habitat areas suitable for the species before ground-disturbing treatment activities (i.e., mechanical treatments) and prescribed burning. Manual treatments, herbicide application, and prescribed herbivory treatments are not expected to result in adverse effects on western pond turtles. Personnel implementing manual treatments and herbicide application treatments would conduct these activities on foot, and the likelihood of a turtle or burrow being inadvertently crushed or otherwise destroyed would be very low. Additionally, the likelihood of a turtle or burrow being crushed by livestock would be low due to the size and depth of the burrows. If western pond turtles are identified during focused surveys, Mitigation Measure BIO-2b for this species would be implemented for mechanical treatment and prescribed burning.

Under Mitigation Measure BIO-2b, the project proponent would require flagging areas for avoidance, relocation of individual animals by a qualified RPF or biologist with a valid CDFW scientific collecting permit, and/or other measures recommended by a qualified RPF or biologist as necessary to avoid injury to or mortality of western pond turtles. The project proponent may consult with CDFW for technical information regarding appropriate measures.

Habitat function for western pond turtle would be maintained because treatment activities and maintenance treatments would not occur within aquatic habitat, and pursuant to SPR HYD-4 treatments within stream WLPZs adjacent to the treatment area would be limited (e.g., no mechanical treatment, retention of at least 75 percent surface cover). 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.

Special-Status Birds

Twelve special-status bird species may occur within the treatment area: American peregrine falcon, bald eagle, burrowing owl, golden eagle, grasshopper sparrow, loggerhead shrike, tricolored blackbird, Vaux's swift, white-tailed kite, willow flycatcher, yellow warbler, and yellow-breasted chat (Table 4.5-2). Bald eagle and golden eagle are known to nest within or adjacent to the treatment areas (eBird 2022; Van Dam, pers. comm., 2022a).

Treatment activities, including manual treatment, mechanical treatments, prescribed burning, and prescribed herbivory, conducted during the nesting bird season (February 1–August 31) 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, herbicide application, and prescribed herbivory, could result in disturbance to active nests from auditory and visual stimulus (e.g., heavy equipment, chain saws, vehicles, personnel, high density of livestock) 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 clearly avoided for treatments that would occur outside of the nesting bird season (February 1–August 31). Additionally, nesting habitat for American peregrine falcon (i.e., cliffs), bald eagle (i.e., large diameter trees near bodies of water), and golden eagle (i.e., cliffs, large solitary trees) would not be targeted for treatment or removed, which would help avoid direct loss of nests and nesting habitat for these species.

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 for American peregrine falcon, bald eagle, burrowing owl, golden eagle, grasshopper sparrow, loggerhead shrike, tricolored blackbird, Vaux's swift, white-tailed kite, willow flycatcher, yellow warbler, and yellow-breasted chat 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 American peregrine falcon, bald eagle, golden eagle, tricolored blackbird, white-tailed kite, and willow flycatcher) and BIO-2b (for burrowing owl, grasshopper sparrow, loggerhead shrike, Vaux's swift, yellow warbler, and yellow-breasted chat) would be implemented.

Under Mitigation Measures BIO-2a and BIO-2b, a no-disturbance buffer of at least 0.5 mile would be established around active nests for American peregrine falcon, bald eagle, and golden eagle nests, 0.25 mile for white-tailed kite nests, 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 RPF or biologist. Burrowing owls may occupy their burrows year-round; therefore, a no-disturbance buffer of 1640 feet (500 meters) during the nesting season (April 1–August 15), 660 feet (200 meters) during the fledging season (August 16–October 16), and 330 feet (100 meters) during the overwintering season (October 16–March 31) would be implemented around occupied burrowing owl burrows (CDFW 2012). No treatment activities would occur within a burrowing owl buffer until the burrow was determined to be unoccupied based on a protocol burrowing owl survey conducted by a qualified RPF or biologist. Additionally, trees containing bald eagle or golden 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 and maintenance treatments would retain most large native trees; in fuel break and WUI fuel reduction treatment areas, treatment would retain native trees (i.e., conifers, hardwoods) greater than 12 inches dbh, and pine, eucalyptus, and *Prunus* species greater than 24 inches dbh inches. In ecological restoration treatments, trees 12 inches dbh or greater would be retained in forested habitat, and 8 inches or greater would be retained in oak woodland habitat (except for hazard trees). Within ecological restoration and WUI fuel reduction treatment areas, at least two snags would be retained per acre to provide wildlife habitat, if feasible. Additionally, treatments within riparian habitat (which provides nesting habitat for several of the special-status bird species that may occur in the treatment areas [e.g., tricolored blackbird, willow flycatcher, yellow warbler, yellow-breasted chat]) that is included within a WLPZ would be limited pursuant to SPR HYD-4 (e.g., no mechanical treatment, retention of at least 75 percent surface cover). Additionally, pursuant to SPR HYD-3, prescribed herbivory treatments would be excluded within 50 feet of environmentally sensitive areas such as waterbodies, wetlands, or riparian areas using temporary fencing or active herding. Loggerhead shrike, willow flycatcher, and yellow-breasted chat may nest in shrub habitat. Pursuant to SPR BIO-5, treatments implemented in chaparral and coastal sage scrub would be designed to avoid type conversion of chaparral and coastal sage scrub vegetation and to maintain habitat function, including function for nesting birds.

Pursuant to Mitigation Measure BIO-2a, the Park District must consult with CDFW about its determination that mortality, injury, or disturbance would not occur and habitat function would be maintained for American peregrine falcon, bald eagle, golden eagle, tricolored blackbird, white-tailed kite, and willow flycatcher. For the reasons summarized above, the Park District determined that implementation of treatments would maintain habitat function for American peregrine falcon, bald eagle, golden eagle, tricolored blackbird, white-tailed kite, and willow flycatcher and consulted with CDFW to seek technical input on this determination, as required. On January 25, 2023, the Park District sent a memo to CDFW describing the measures that would be taken to avoid mortality, injury, and disturbance to American peregrine falcon, bald eagle, golden eagle, tricolored blackbird, white-tailed kite, and willow flycatcher and to maintain habitat function in compliance with Mitigation Measure BIO-2a. No refinements to the project description or measures resulted from this consultation. 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.

Special-Status Fish

Three special-status fish species may occur within the treatment area: Pacific lamprey, Sacramento perch, and western brook lamprey (Table 4.5-2). Potential habitat for all three species is present in Wildcat Creek, which intersects the Lake Anza and Meadows Canyon treatment areas. The potential for treatment activities and maintenance treatments to result in adverse effects on special-status fish was examined in the PEIR.

Per SPR BIO-1, if it is determined that adverse effects on special-status fish can be clearly avoided by physically avoiding habitat for these species, then mitigation would not be required. Treatment would not occur within aquatic habitat, and WLPZs ranging from 50 to 150 feet adjacent to all Class I and Class II streams within the treatment areas would be implemented per SPR HYD-4. Additionally, pursuant to SPR HYD-3, prescribed herbivory treatments would be excluded within 50 feet of environmentally sensitive areas such as waterbodies, wetlands, or riparian areas using temporary fencing or active herding. Adverse effects on special-status fish would be clearly avoided through habitat avoidance and implementation of these SPRs, and further mitigation would not be required.

Habitat function for special-status fish would be maintained because treatment activities and maintenance treatments would not occur within aquatic habitat, and treatments within WLPZs and equipment limitation zones adjacent to treatment areas would be limited pursuant to SPR HYD-4 (e.g., no mechanical treatment, retention of at least 75 percent surface cover) and SPR HYD-4 (exclusion of environmentally sensitive areas such as waterbodies, wetlands, and riparian areas from prescribed herbivory treatment using temporary fencing or active herding). Furthermore, SPR BIO-4 requires avoidance of vegetation removal that could reduce stream shading and increase stream temperatures, in riparian habitats. 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.

Special-Status Bumble Bees

Two special-status bumble bee species have potential to occur in the project area: Crotch's bumble bee and western bumble bee (Table 4.5-2).

These bumble bee species were designated as candidates for listing as endangered under CESA by the California Fish and Game Commission (Commission) on June 12, 2019, after which opponents of the candidacy filed a lawsuit to reverse the Commission's action. A November 13, 2020, court decision by the Superior Court of Sacramento ruled that insects are not eligible for listing under CESA and vacated the candidacy of these species. CDFW appealed this decision, and on May 31, 2022, the Third District Court of Appeal in Sacramento ruled that insects are eligible for listing under CESA. On September 30, 2022, candidacy was reinstated for these two bumble bee species. State candidate species are protected under CESA, including by the same prohibition of take applied to a listed species. These bumble bee species have recently undergone declines in abundance and distribution and are no longer present across much of their historic ranges (Xerces Society 2018).

Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens. The project area contains all three habitat components suitable for the bumble bee species. Treatment activities, including manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory, could result in temporary removal of floral resources, as well as inadvertent destruction of bumble bee nests or overwintering sites through trampling, crushing, or removal of nesting or overwintering substrate (e.g., downed woody debris). The potential for treatment activities to result in adverse effects on special-status bumble bees was examined in the PEIR.

Two occurrences of Crotch's bumble bee are documented within three miles of the project area; the closest, from 2015, is located approximately 0.8 mile west of the center of the Tilden South treatment area (CNDDB 2022). Eight occurrences of western bumble bee are recorded within three miles of the project area, but only one of the seven was documented since the 1980s (CNDDB 2022). The only modern occurrence of western bumble bee (1994) overlaps the AC Grass Valley and Redwood Road Fuel Break treatment areas (CNDDB 2022). This record represents eight individuals collected in 1994 (CNDDB 2022).

In the PEIR, Mitigation Measure BIO-2g was proposed as a feasible set of actions to reduce potentially significant impacts on special-status bumble bees by requiring avoidance of prescribed burning and targeted ground application of herbicide treatment during the flight/nesting season and retention of suitable habitat in the range of these species, or compensation for unavoidable loss of special-status bumble bees or habitat function. Recognizing the difficulty in detecting overwintering and nesting bumble bees and determining the occurrence and severity of impacts, very limited information about nesting and overwintering behaviors, and the statewide scope of potential effects analyzed, for purposes of good faith and full disclosure under CEQA, this impact was designated in the PEIR as potentially significant and unavoidable. However, addressing this potential effect at a project-specific level may result in a different significance conclusion if evidence supports it.

Per SPR BIO-1, if it is determined that adverse effects on special-status bumble bees can be clearly avoided by conducting treatments outside of the season of sensitivity or physically avoiding habitat for these species, then mitigation would not be required. However, because bumble bees may use habitat in the project area year-round, implementation of SPR BIO-10 would be required before treatment activities. Under SPR BIO-10, focused surveys for special-status bumble bees would be conducted or, in lieu of conducting surveys (e.g., if conducting a valid survey is not feasible), the potential presence of Crotch's bumble bee and western bumble bee in the project area would be assumed.

Because the project area is within the range of Crotch's bumble bee and western bumble bee, and the project area contains habitat suitable for these species (e.g., wet meadow, forest meadow, riparian, grassland, or coastal scrub habitat containing sufficient floral resources within the range of the species), and components of Mitigation Measure BIO-2g are feasible to implement for the project, Mitigation Measure BIO-2g would be implemented as required in the PEIR. Mitigation Measure BIO-2g includes several measures to reduce the likelihood of potential mortality, injury, or disturbance to special-status bumble bees and to maintain habitat function, for projects within the range of the species and where suitable habitat is present.

If the candidate bumble bee species become listed under CESA, CDFW would provide guidance in the future regarding avoidance of mortality and injury to these bumble bees. The Park District EBRPD will communicate with CDFW regarding any published guidance on avoidance measures, impact minimization, or survey protocols to determine if additional measures to avoid adverse effects on special-status bumble bees would be applicable to the project and feasible to implement. The CalVTP PEIR concluded that impacts to special-status bumble bees would be significant and unavoidable due to uncertainties about the life history, ecology, and occurrences of the bumble bees, uncertainties about the feasibility of Mitigation Measure BIO-2g, and for purposes of full disclosure under CEQA. Recognizing that the measures in Mitigation Measure BIO-2g are feasible for the Park District EBRPD to implement, the CEQA determination for this project would be less than significant with implementation of Mitigation Measure BIO-2g. Habitat function for Crotch's bumble bee and western bumble bee would be maintained during and after treatment implementation. Treatments would be designed and implemented in a patchy pattern to retain floral resources and provide refuge for bumble bees. Treatment activities in ecological restoration and WUI fuel reduction treatment areas would retain select logs and snags, as feasible, that provide wildlife habitat but do not pose safety hazards; some of these features may provide suitable nesting or overwintering sites for bumble bees. The proposed vegetation treatments would not cause any conversion or loss of natural land cover or permanent soil disturbance that could remove availability of potential underground nesting or overwintering sites over the long term. Ecological restoration treatment in grassland areas would focus on broadcast burning and herbicide application to encourage native species and promote habitat quality within the natural fire regime, retaining floral resources and other elements of habitat function for grassland species. SPR BIO-9 would be implemented, which would prevent the spread of invasive plants and noxious weeds through application of best management practices before, during, and after treatments. Additionally, requirements to maintain vegetation characteristics (e.g., composition, structure, and pattern) and habitat function in coastal scrub, chaparral, and adjacent grasslands for Alameda whipsnake, pursuant to Mitigation Measure BIO-2a, would incidentally contribute to maintenance of floral resources and habitat function for Crotch's and western bumble bee.

Pursuant to Mitigation Measure BIO-2a and Mitigation Measure BIO-2g, the Park District must consult with CDFW about its determination that mortality, injury, or disturbance would not occur, and habitat function would be maintained, for Crotch's and western bumble bee. For the reasons summarized above, the Park District determined

that implementation of treatments would maintain habitat function for Crotch's bumble bee and western bumble bee and consulted with CDFW to seek technical input on this determination, as required. On January 25, 2023, the Park District sent a memo to CDFW describing the measures that would be taken to avoid mortality, injury, and disturbance to Crotch's and western bumble bee and to maintain habitat function in compliance with Mitigation Measure BIO-2g. No refinements to the project description or measures resulted from this consultation.

While implementation of Mitigation Measure BIO-2g and applicable SPRs is expected to reduce potential mortality, injury, and other disturbances to individual Crotch's bumble bees and western bumble bees if the species are present during treatment activities, determining the level of significance for potential impacts on individuals and populations (including nesting bees and overwintering queens) would be too speculative to evaluate for the reasons discussed above. With implementation of Mitigation Measure BIO-2g and applicable SPRs, the impact of the project on habitat function for Crotch's bumble bee and western bumble bee would be less than significant. These potential effects would not constitute a substantially more severe significant impact than what was covered in the PEIR.

Monarch

There are several documented observations of milkweed and several observations of adult monarchs within the project area. Monarch breeding has been reported in the Western Monarch Milkweed Mapper at several locations within 1 mile of the project area, but not within any treatment areas (Xerces Society et al. 2022). The project area is within the early breeding zone and the overwintering range for this species; however, no overwintering sites are known to occur in the project area. Stands of mature trees within the project area are potentially suitable overwintering roost habitat for monarch, although no overwintering monarchs have been documented in the area. Overwintering colonies are discussed under Impact BIO-5.

The project area contains various natural habitats and floral resources that likely provide foraging or breeding habitat suitable for the species. Treatment activities, including manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory, could result in temporary removal of floral resources, including monarch host plants (i.e., locally native milkweed), or direct mortality of monarch butterflies. Due to documented decreases in overwintering populations, the USFWS determined that the listing of monarch as threatened or endangered under ESA was warranted but precluded due to higher priority actions. Federal candidate species are not provided protection under ESA. The potential for treatment activities to result in adverse effects on monarch butterflies was examined in the PEIR.

Treatments would occur in habitat that may provide foraging or breeding habitat (i.e., locally native milkweed) for monarchs. Monarch foraging habitat and habitat suitable for milkweed would largely be present in grasslands in the project area, and grassland habitat comprises approximately 11 percent of the total project area (Table 4.5-1). While research regarding the effects of prescribed fire on the milkweed species present in Contra Costa and Alameda Counties (e.g., showy milkweed [*Asclepias speciosa*], narrowleaf milkweed [*Asclepias fascicularis*], California milkweed [*Asclepias californica*]) is limited, research regarding some milkweed species has suggested that prescribed burning during the dormant season has positive or neutral effects on milkweed seedlings (Ulev 2005). Further, because milkweed has light, wind-blown seeds, deep rhizomes, and early successional status, showy milkweed has adaptations that typically promote fire survivorship and establishment in early postfire communities (Ulev 2005).

Per SPR BIO-1, if it is determined that adverse effects on monarch butterflies can be clearly avoided by conducting treatments outside of the season of sensitivity or physically avoiding habitat for these species, then mitigation would not be required. However, because monarchs may use habitat in the project area for large portions of the year, implementation of SPR BIO-10 would be required before treatment activities. Under SPR BIO-10, presence of monarch butterflies would be assumed or focused surveys for monarchs would be conducted before implementation of treatment activities.

If monarch is detected during surveys or presence of the species is assumed, Mitigation Measure BIO-2e would be implemented. Under Mitigation Measure BIO-2e, the project proponent would implement measures recommended by a qualified RPF or biologist as necessary to avoid significant impacts on monarch. The Xerces Society for Invertebrate Conservation has identified regionally appropriate monarch breeding habitat management windows to avoid impacts on monarch eggs and larvae (Xerces Society 2019). In monarch breeding habitat within the coastal and

central California region, a limited operating period of October 31-March 15 is recommended during which management activities (e.g., mowing, prescribed burning) would occur (Xerces Society 2019). Prescribed burning activities under the proposed project would occur November through May, which is primarily within this recommended period. Other feasible measures pursuant to Mitigation Measure BIO-2e would be implemented including the treatment of habitat in a patchy pattern and avoidance of treatment within the entirety of the species' habitat within the same year to retain floral resources and provide refuge for monarch.

As outlined under Mitigation Measure BIO-2e, if the project proponent determines that the impacts on special-status butterflies (that are not listed under ESA or CESA) would be less than significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, no further mitigation would be required. Because treatments would not target nor remove substantial amounts of locally native milkweed plants, prescribed burning would occur within the recommended window to avoid impacts on monarch eggs and larvae, and treatments may maintain grassland habitats or improve habitat for locally native milkweed species, impacts on monarchs would be less than significant.

Habitat function for monarch would be maintained because treatment activities and maintenance treatments would not target monarch host plants and because all habitat suitable for monarch in the project area would not be treated at once (i.e., treatments in the project area would occur over the course of several years). Prescribed burning and prescribed herbivory would also reduce encroachment of woody species and maintain grassland areas where this encroachment is occurring, potentially maintaining foraging and breeding habitat for monarchs. 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.

American Badger

Habitat potentially suitable for American badger is present within grassland and open woodland in the project area. Treatment activities, including mechanical treatments and prescribed burning could result in direct loss of active dens and potential loss of young, if present in treatment areas. Manual treatments and herbicide application treatments are not expected to result in adverse effects on American badger dens because these treatments would typically occur within habitats where American badger dens are unlikely to occur (e.g., shrub and forest habitat), personnel would conduct these activities on foot, and the likelihood of a den being inadvertently crushed or otherwise destroyed would be very low. Additionally, the likelihood of a badger den being crushed during prescribed herbivory treatments by goats and sheep would be low due to the size and depth of the burrows. Additionally, American badgers are known to frequently burrow within rangelands where livestock are present. The potential for treatment activities to result in adverse effects on American badger was examined in the PEIR.

Per SPR BIO-1, if it is determined that adverse effects on American badger can be clearly avoided by conducting treatments outside of the season of sensitivity or physically avoiding habitat for these species, then mitigation would not be required. However, because American badgers may use a den year-round, and because focused surveys for American badgers have not been conducted, implementation of SPR BIO-10 would be required before mechanical treatments and prescribed burning. Under SPR BIO-10, focused surveys would be conducted for American badger dens within habitat suitable for the species (i.e., grasslands, open woodland) by a qualified RPF or biologist. If American badger dens are not detected during focused surveys, further mitigation for the species would not be required. If American badger dens are detected during focused surveys, Mitigation Measure BIO-2b would be implemented. Under Mitigation Measure BIO-2b, a no-disturbance buffer would be established around the den. Its size would be determined by the qualified RPF or biologist, and no treatment activities would occur within this buffer.

Habitat function for American badger would be maintained because habitat suitable for the species (i.e., grasslands, open woodlands) would be maintained and additional open woodland habitat would likely be restored through thinning and removal of ladder fuels. 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.

Mountain Lion

Mountain lions have been documented to occur throughout the East Bay Hills (iNaturalist 2022; Van Dam, pers. comm., 2022a). Mountain lions use predominantly natural habitat with low levels of human development for reproductive behaviors (i.e., communication and nursery sites) (Wilmers et al. 2013; Yovovich et al. 2020). Although most treatment areas experience ongoing human disturbance associated with recreation and are adjacent to development (e.g., low density housing, roads), more remote areas of the project area have the potential to provide nursery habitat (i.e., den habitat) potentially suitable for mountain lions. Mountain lions may use the treatment area as foraging habitat year-round. Den (i.e., nursery) habitat potentially suitable for mountain lions may be present within thickets and cavities (e.g., rocky areas or downed woody debris) in the treatment areas. There is a likelihood that mountain lions would occur within the treatment areas, but treatment activities, including maintenance treatments, would not occur at the time of day when mountain lions would be active. In addition, foraging mountain lions are also likely to avoid the area while treatments are actively being performed due to increased noise from equipment. Furthermore, SPR BIO-2 would require biological resources training for workers and would instruct workers to stop work and allow wildlife, including mountain lion, to leave the area unharmed. Therefore, it is unlikely that implementation of initial and maintenance vegetation treatments would result in adverse effects on mountain lions. However, although unlikely, there is a possibility that a mountain lion could use rocky areas or areas with thick vegetation in the treatment areas for denning. If a mountain lion den is present within the treatment areas, mountain lions and cubs could be disturbed by the presence of equipment and personnel during manual treatments, mechanical treatments, prescribed burning, or prescribed herbivory (from protection dogs). This disturbance of denning lions could result in interrupted provisioning of cubs or the movement of cubs to another location, which could have adverse effects on the cubs. Treatment could also inadvertently result in injury or mortality by heavy machinery. The potential for treatment activities and maintenance treatments to result in adverse effects on burrowing or denning special-status wildlife species was examined in the PEIR.

Because mountain lions use den habitat year-round, may have cubs year-round, and could be present within treatment areas year-round, there is no reliable season during which impacts on this species could be avoided. As a result, SPR BIO-10 would apply, and focused, noninvasive surveys for mountain lion dens would be conducted within habitat suitable for denning prior to implementation of mechanical and manual treatments, prescribed burning, or prescribed herbivory using protection dogs to determine whether occupied mountain lion dens are present within treatment areas. If no occupied dens or signs of occupied dens are observed during focused surveys, then no additional mitigation would be required. If occupied mountain lion dens are identified or assumed present during focused surveys, Mitigation Measure BIO-2a would be implemented. Under mitigation measure BIO-2a, the Park District would be required to either avoid the occupied area by a distance of 2,000 feet following the most current and commonly accepted science (Wilmers et al. 2013), or consult with CDFW to identify other measures to avoid disturbance, injury, or mortality to mountain lions.

Habitat function for mountain lion would be maintained after implementation of the project because treatment activities would not result in a significant change in the existing habitat within treatment areas. Existing habitat for prey or cover for hunting within treatment areas would not be significantly reduced. Specifically, habitat for mountain lion stalking, foraging, denning, and communication would be maintained because most trees greater than 12 inches dbh would be retained and the tree canopy would not be substantially altered in forested ecological restoration areas. When masticating, operators would minimize disturbance to down wood where feasible, only moving large pieces of woody debris when necessary to reduce fire behavior or gain access to larger portions of treatment areas, with a per acre retention target of 1–4 downed logs per acre. Forest understory vegetation would be maintained in ecological restoration areas consistent with the understory descriptions in the Manual of California Vegetation (Sawyer et al. 2009). Additionally, two to eight larger diameter trees per acre (generally greater than 10 inches dbh and greater than 20 feet in length) may be retained in treatment areas as logs, which may provide suitable denning habitat for this species. Where chaparral or coastal sage scrub vegetation is present, at least 35 percent relative final density would be maintained in the treatment area pursuant to SPR BIO-5. In addition, shrub would be retained in a mosaic pattern to satisfy requirements for Alameda whipsnake per Mitigation Measure BIO-2a. The treatment areas are dispersed, and treatments would not result in landscape-scale or home-range-scale modifications; rather,

treatments would restore the natural processes of the ecosystem and promote wildfire resiliency, which may benefit mountain lion.

Pursuant to Mitigation Measure BIO-2a, and because this species is a candidate for listing under CESA, the Park District must consult with CDFW about its measures to avoid mortality, injury, or disturbance, and its determination that habitat function would be maintained. For the reasons summarized above, the Park District determined that implementation of treatments would maintain habitat function for mountain lion and consulted with CDFW to seek technical input on this determination, as required. On January 25, 2023, the Park District sent a memo to CDFW describing the measures that would be taken to avoid mortality, injury, and disturbance to mountain lion and to maintain habitat function in compliance with Mitigation Measure BIO-2a. No refinements to the project description or measures resulted from this consultation. 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

Ringtail is primarily nocturnal, and typically occurs in riparian areas, forests (including stands of various ages), and shrub habitats. Potential denning habitat includes rock outcrops, crevices, snags, large hardwoods, large conifers, and dense shrub habitat. Most of these habitats would be avoided, as most live native trees (i.e., conifers, hardwoods) larger than 12 inches dbh (except for some hazardous and nonnative larger trees, primarily for the WUI treatment type) would not be removed during treatment or maintenance activities and because rocky areas would not be targeted for vegetation treatment; however, dense shrub habitat would be targeted for treatment and would not be avoided through implementation of other measures. The potential for treatment activities, including maintenance treatments, to result in adverse effects on ringtail was examined in the PEIR.

Per SPR BIO-1, if it is determined that adverse effects on ringtail can be clearly avoided by conducting treatments outside of the season of sensitivity (i.e., maternity season), then mitigation would not be required. Outside of the breeding season, resting ringtails would likely flee due to the presence of equipment, vehicles, or personnel, and injury or mortality would not be expected. Manual treatments of trees less than 12 inches in diameter, herbicide application treatments, and prescribed herbivory are not expected to result in adverse effects on ringtail dens because personnel would conduct these activities on foot, and the likelihood of a den being inadvertently crushed or otherwise destroyed would be very low. However, mechanical treatments and prescribed burning conducted during the ringtail maternity season (i.e., when young would be present in a den, approximately April 15–June 30), or manual treatments could result in destruction of active dens within shrub habitat or disturbance to active dens potentially resulting in abandonment and loss of young, which may not yet be capable of fleeing. Adverse effects on ringtail would be clearly avoided for mechanical treatments and prescribed burning that would occur outside of the ringtail maternity season (April 15–June 30) under SPR BIO-1.

If conducting some manual treatments, mechanical treatments, and prescribed burning outside of the ringtail maternity season is determined to be infeasible for certain treatments, then SPR BIO-10 would apply, and presence of ringtail would be assumed, or focused surveys for ringtail would be conducted within the treatment area before implementation of treatment activities. Surveys for ringtail would include the use of trail cameras, track plates, and other non-invasive survey methods to determine whether ringtails are present within the treatment area and would be conducted by a qualified RPF or biologist. If baited trail cameras are used, the qualified professionals should obtain a valid CDFW Scientific Collecting Permit before using bait. If focused surveys are conducted, and ringtails are not detected, then further mitigation for the species would not be required. If ringtails are detected during focused surveys, then additional surveys would be required to determine whether an active ringtail den is present within the treatment area. If an active den is identified by a qualified RPF or biologist, Mitigation Measure BIO-2a would be implemented. Under Mitigation Measure BIO-2a, a no-disturbance buffer would be established around the den, the size of which would be determined through consultation with CDFW. No treatment activities would occur within this buffer.

If the presence of ringtail within the treatment area is assumed, then implementation of avoidance and minimization measures would be required pursuant to Mitigation Measure BIO-2a before and during implementation of mechanical treatments and prescribed burning between April 15 and June 30. Avoidance and minimization measures would include but not be limited to pretreatment den surveys, daily sweeps of the treatment area, and biological monitoring.

Habitat function for ringtail would be maintained because treatment activities and maintenance treatments would retain most large native trees (except hazard trees); in fuel break and WUI fuel reduction treatment areas, treatment would retain native trees (i.e., conifers, hardwoods) greater than 12 inches dbh, and pine, eucalyptus, and *Prunus* species greater than 24 inches dbh inches. In ecological restoration treatments, trees 12 inches dbh or greater would be retained in forested habitat, and 8 inches or greater would be retained in oak woodland habitat. Treatment would retain at least two large snags per acre within ecological restoration and WUI fuel reduction treatment areas (with a preference for the largest snags that exhibit the form and decay characteristics favored by wildlife), as feasible, and treatments would retain two to eight larger diameter trees per acre (generally greater than 10 inches dbh and greater than 20 feet in length), which would be the most likely features to be used by this species. When masticating, operators would minimize disturbance to down wood where feasible, only moving large pieces of woody debris when necessary to reduce fire behavior or gain access to larger portions of treatment areas, with a per acre retention target of 1–4 downed logs per acre. Forest understory vegetation would be maintained in ecological restoration areas consistent with the understory descriptions in the Manual of California Vegetation (Sawyer et al. 2009). Where chaparral or coastal sage scrub vegetation is present, at least 35 percent relative final density would be maintained in the treatment area pursuant to SPR BIO-5. In addition, shrub would be retained in a mosaic pattern to satisfy requirements for Alameda whipsnake per Mitigation Measure BIO-2a. Additionally, rocky areas would not be targeted for vegetation treatment. Pursuant to SPR HYD-4 treatments within stream WLPZs adjacent to the treatment area would be limited (e.g., no mechanical treatment, retention of at least 75 percent surface cover).

Mitigation Measure BIO-2a requires that the final determination for habitat function maintenance must be made by the project proponent in consultation with CDFW. For the reasons summarized above, the Park District determined that implementation of treatments would maintain habitat function for ringtail and consulted with CDFW to seek technical input on this determination, as required. On January 25, 2023, the Park District sent a memo to CDFW describing the measures that would be taken to avoid mortality, injury, and disturbance to ringtail and to maintain habitat function in compliance with Mitigation Measure BIO-2a. No refinements to the project description or measures resulted from this consultation. 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.

Special-Status Bats

Habitat potentially suitable for four special-status bat species – pallid bat, Townsend's big-eared bat, western mastiff bat, and western red bat – is present within forest habitat, rocky areas, caves, and human-made structures (e.g., barns, bridges) in the project area. Per SPR BIO-1, if it is determined that adverse effects on special-status bats would 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 clearly avoided if initial and maintenance treatments were implemented outside of the bat maternity season (April 1–August 31; Caltrans 2004).

Treatment activities, including manual treatments, mechanical treatments, and prescribed burning 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., pile burning) potentially resulting in abandonment of the roost and loss of young. Herbicide 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 1-5 people; thus, these treatments would not be expected to result in substantial disturbance to special-status bat roosts. Prescribed herbivory would be a relatively low-impact treatment activity that would not result in loud noise or smoke; thus, these treatments would not be expected to result in substantial disturbance to special-status bats. The potential for treatment activities to result in adverse effects on special-status bats was examined in the PEIR.

If implementation of some mechanical or manual treatments, or prescribed burning, would occur during the bat maternity season, then SPR BIO-10 would apply, and focused surveys for these species would be conducted by a qualified RPF or biologist within habitat suitable for these species areas before initiation of manual, mechanical, and prescribed burning 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

250 feet would be established around active pallid bat, Townsend's big-eared bat, western mastiff bat, and western red bat roosts and mechanical treatments, manual treatments, and pile burning would not occur within this buffer.

Habitat function for special-status bats would be maintained because treatment activities and maintenance treatments would retain most large native trees (except hazard trees); in fuel break and WUI fuel reduction treatment areas, treatment would retain native trees (i.e., conifers, hardwoods) greater than 12 inches dbh, and pine, eucalyptus, and *Prunus* species greater than 24 inches dbh inches. In ecological restoration treatments, trees 12 inches dbh or greater would be retained in forested habitat, and 8 inches or greater would be retained in oak woodland habitat. Treatment would retain at least two large snags per acre within ecological restoration and WUI fuel reduction treatment areas (with a preference for the largest snags that exhibit the form and decay characteristics favored by wildlife), as feasible, which would be the most likely features to be used by this species. Further, bat foraging habitat, including meadows and open water, would not be modified during treatments and thus would be retained in the project area. 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.

San Francisco Dusky-Footed Woodrat

Habitat potentially suitable for San Francisco dusky-footed woodrat is present within forest, woodland, and scrub habitats in the treatment areas with moderate canopy coverage and moderate to dense understory density. Woodrats construct large complex nests on the ground or in vegetation, which are also known as houses or middens, with shredded grass, leaves, and other material. Woodrats may occupy multiple nests at a given time and use these nests during the breeding season and outside of the breeding season, which occurs in April through August (EBRPD 2019b). Treatment activities, including maintenance treatments, may result in inadvertent disturbance to, injury to, or mortality of individual woodrats or destruction of nests. If present, San Francisco dusky-footed woodrats could be disturbed due to the presence of equipment and personnel and could be inadvertently injured or killed or have their nests destroyed by heavy machinery, personnel, livestock, vehicles, and fire. The potential for treatment and maintenance activities to result in adverse effects on San Francisco dusky-footed woodrat was examined in the PEIR.

Because woodrats use their nests year-round, there is no reliable season during which impacts on this species could be avoided. As a result, SPR BIO-10 would apply, and focused surveys for San Francisco dusky-footed woodrats would be conducted within habitat suitable for the species prior to implementation of manual and mechanical treatments, broadcast or pile burning, and prescribed herbivory. If woodrat nests are detected during focused surveys, then Mitigation Measure BIO-2b would be implemented. Under Mitigation Measure BIO-2b, woodrat nests would be flagged for avoidance by a qualified RPF or biologist, following the guidelines provided by the Park District in their San Francisco dusky-footed woodrat protocol (EBRPD 2019b); a no-disturbance buffer of 3.2 feet (1 meter) (EBRPD 2019b) would be established around active woodrat nests to prevent disturbance and accidental encroachment by vehicles, equipment, or personnel. If active woodrat nests within treatment areas cannot be avoided, the crew would implement phased nest relocation procedures as outlined in the Park District's protocol, with all nest relocation procedures overseen by a qualified RPF or biologist.

Habitat function for San Francisco dusky-footed woodrat would be maintained because treatment activities and maintenance treatments would retain most large native trees (except hazard trees); in fuel break and WUI fuel reduction treatment areas, treatment would retain native trees (i.e., conifers, hardwoods) greater than 12 inches dbh, and pine, eucalyptus, and *Prunus* species greater than 24 inches dbh inches. In ecological restoration treatments, trees 12 inches dbh or greater would be retained in forested habitat, and 8 inches or greater would be retained in oak woodland habitat. The upper canopy would be generally retained in forested areas, downed logs may be retained in treatment areas, and herbaceous understory vegetation would be retained as a buffer around known woodrat nests per Mitigation Measure BIO-2b. When masticating, operators would minimize disturbance to down wood where feasible, only moving large pieces of woody debris when necessary to reduce fire behavior or gain access to larger portions of treatment areas, with a per acre retention target of 1–4 downed logs per acre. Forest understory vegetation would be maintained in ecological restoration areas consistent with the understory descriptions in the Manual of California Vegetation (Sawyer et al. 2009). Additionally, treatments within riparian habitat (which provides the greatest density of San Francisco dusky-footed woodrat nesting habitat) that is included within a WLPZ would be limited pursuant to SPR HYD-4 (e.g., no mechanical treatment, retention of at least 75 percent surface cover). 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 the treatment activities and intensity of disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. The inclusion of land in the proposed treatment area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions and general habitat characteristics present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the potential impact on special-status wildlife is also the same, as described above. Biological resource SPRs that apply to project impacts under Impact BIO-2 are SPR BIO-1, SPR BIO-2, SPR BIO-3, SPR BIO-4, SPR BIO-5, SPR BIO-10, SPR BIO-11, SPR HYD-1, SPR HYD-3, SPR HYD-4, SPR HYD-5, SPR HAZ-5, and SPR HAZ-6. Biological resource mitigation measures that apply to project impacts under Impact BIO-2 are Mitigation Measure BIO-2a, Mitigation Measure BIO-2b, Mitigation Measure BIO-2e, and Mitigation Measure BIO-2g. 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, re-treatment at too great a frequency could result in additional adverse effects. The potential for treatment activities, including maintenance treatments, to adversely affect sensitive habitats was examined in the PEIR.

Based on the habitat types present in the project area and the reconnaissance-level survey conducted pursuant to SPR BIO-1, three sensitive natural communities (i.e., natural communities with a rarity rank of S1, S2, or S3) are known to occur, and an additional nine sensitive natural communities have the potential to occur in the project area. The sensitive natural communities, their associated rarity rank, and the habitat type within which the communities may occur are presented in Table 4.5-3. In addition, several oak woodland and forest types (i.e., blue oak woodland, coastal oak woodland), which are sensitive habitats pursuant to the Oak Woodlands Conservation Act and PRC Section 21083.4, may occur in the project area. Habitat types observed during SPR BIO-1 reconnaissance surveys conducted on May 19, 2022, May 20, 2022, and June 30, 2022, were classified according to the CWHR system and vegetation types observed that qualify as sensitive natural communities based on *A Manual of California Vegetation* (Sawyer et al. 2009, CNPS 2022) were noted. Because the surveys were conducted at a reconnaissance level, not all vegetation types could be classified and mapped according to *A Manual of California Vegetation* standards.

Table 4.5-3 Sensitive Natural Communities Documented or with Potential to Occur in the Project Area

Sensitive Natural Community[1]	Rarity Rank	CWHR Type	Occurrence Potential	Treatment Areas
Woodland and Forested Habitats				
Redwood forest	S3	Redwood	Known to occur	Stream trail, French Trail, Serpentine Prairie Ridge.
California bay forest	S3	Coastal oak woodland	Known to occur	All treatment areas
California buckeye grove	S3	Montane hardwood	May occur	All treatment areas
Red willow thicket	S3	Valley foothill riparian	May occur	All treatment areas

Sensitive Natural Community[1]	Rarity Rank	CWHR Type	Occurrence Potential	Treatment Areas
California sycamore woodland	S3	Valley foothill riparian	May occur	All treatment areas
Valley oak woodland	S3	Valley oak woodland	May occur	All treatment areas
Coastal Scrub and Chaparral				
Bush monkeyflower scrub	S3	Coastal scrub	Known to occur	Serpentine Prairie Ridge
Eastwood manzanita chaparral	S3	Chamise-redshank chaparral	May occur	All treatment areas
Common manzanita chaparral	S3	Mixed chaparral	May occur	All treatment areas
Hairy leaf – woolly leaf ceanothus chaparral	S3	Mixed chaparral	May occur	All treatment areas
Brittle leaf – woolly leaf manzanita chaparral	S3	Mixed chaparral	Known to occur	Meadows Canyon, Tilden South, and French Trail
Herbaceous Habitats				
Tar plant field	S2	Annual grassland	May occur	All treatment areas
Monolopia – leafy-stemmed tickseed field	S3	Annual grassland	May occur	All treatment areas

[1] These are designated sensitive natural communities with a state rarity rank of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable)

Source: Sawyer et al. 2009, Compiled by Ascent in 2022

During the reconnaissance-level survey conducted pursuant to SPR BIO-1, three sensitive natural communities were observed: redwood forest, California bay forest, and bush monkeyflower scrub. Additionally, maritime chaparral is present in Meadows Canyon, Tilden South, and French Trail treatment areas, though it was not observed during reconnaissance surveys. Maritime chaparral is the same as the brittle leaf – woolly leaf manzanita chaparral alliance in MCV (Sawyer et al. 2009) where one or both of these manzanita species are dominant, codominant, or characteristically present. Typical associates in the maritime chaparral in East Bay Hills include chamise, California sagebrush, coyote brush, and pallid manzanita. The following other sensitive natural communities have the potential to occur in the treatment area: California buckeye grove, red willow thicket, California sycamore woodland, valley oak woodland, Eastwood manzanita chaparral, common manzanita chaparral, hairy leaf-woolly leaf ceanothus chaparral, tar plant field, and monolopia - leafy-stemmed tickseed field. Madrone forest habitat was also observed during reconnaissance surveys; this habitat type was characterized as S3 sensitive habitat during the drafting of the CalVTP PEIR but has since been changed and is no longer considered sensitive. As a result of the known and potential presence of these thirteen sensitive natural communities, before implementation of treatment activities, SPR BIO-3 would be implemented and a qualified RPF or biologist would identify and map the extent of sensitive natural communities in the treatment area to the alliance level pursuant to *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018).

Riparian habitat is present within the project area adjacent to streams, lakes, and ponds. Under SPR HYD-4, a WLPZ of 50 to 150 feet adjacent to all Class I and Class II streams and lakes would be implemented for manual and mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory, which would limit the extent of treatment activities within riparian habitat. Additionally, SPR HYD-3 would apply, which would require that environmentally sensitive areas including waterbodies and riparian areas are identified and excluded from prescribed herbivory treatment by a buffer of 50 feet. While these SPRs would reduce potential impacts on riparian habitat, the extent of riparian habitat within the project area has not been mapped and riparian habitat may be present outside of the areas encompassed within WLPZs. As a result, before implementation of treatment activities, SPR BIO-3 would be implemented to identify and map the extent of riparian habitat within a treatment area. 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 be limited to removal of uncharacteristic or undesired fuel loads (e.g., dead or dying vegetation, invasive plants). Additionally, before any treatments in riparian habitat, the project proponent would notify CDFW pursuant to California Fish and Game Code 1602, when required.

As described above, chamise-redshank chaparral, mixed chaparral, maritime chaparral, and coastal scrub habitat is present within the project area. As required by SPR BIO-5, treatments implemented in chaparral and coastal sage scrub would be designed to avoid type conversion of chaparral and coastal sage scrub vegetation and to maintain habitat function. This would include determining appropriate treatment prescriptions based on current fire return interval departure and condition class of the chaparral and coastal sage scrub vegetation onsite, retaining at least 35 percent relative final density of mature chaparral and coastal sage scrub vegetation, and retaining a mix of middle to older aged shrubs to maintain heterogeneity and provide nurse plants for seeding. The project proponent would demonstrate with substantial evidence that the habitat function of chaparral and coastal sage scrub communities would be maintained or enhanced by the treatments applied. Ecological restoration treatments would not be implemented in stands of chaparral and coastal sage scrub vegetation that are within their natural fire return interval unless the project proponent demonstrates with substantial evidence that the habitat function of the chaparral and coastal sage scrub vegetation would be improved.

The project proponent would avoid impacts on sensitive natural communities and oak woodlands by avoiding treatments in these communities. However, if avoiding treatment activities within identified sensitive natural communities or oak woodlands would preclude achieving treatment objectives, then Mitigation Measure BIO-3a would apply in these areas to ensure that the characteristics that qualify these communities as sensitive (e.g., dominant canopy species, canopy relative percentage of dominant species, species composition) are retained post-treatment to the extent feasible. See Attachment B for general objectives and goals for treatment within oak woodland and other habitats that may contain sensitive natural communities. 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 and Mitigation Measure BIO-3c 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, because the treatment activities and intensity of disturbance as a result of implementing treatment activities would be consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the existing environmental conditions outside the treatable landscape in the project area are essentially the same as those within the treatable landscape; therefore, the potential impact on sensitive habitats is also the same. 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-5, SPR BIO-6, SPR BIO-9, SPR HYD-4, and SPR HYD-5. Biological resource mitigation measures that apply to project impacts under Impact BIO-3 are Mitigation Measure BIO-3a, Mitigation Measure BIO-3b, and Mitigation Measure BIO-3c. 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.

During the reconnaissance-level survey conducted pursuant to SPR BIO-1, many different types of aquatic habitat were observed, including Wildcat Creek, unnamed creeks of various sizes, a perennial freshwater pond, and a seasonal pond. One perennial freshwater pond was observed in Cow Hollow treatment area, and a seasonal pond that was dry during surveys is located in the Sibley Wildlife Corridor treatment area. Seasonal wetlands, meadows, and seeps were also observed during the survey. CAL FIRE's FRAP vegetation data for the project area includes 2.3 acres of lacustrine habitat (i.e., reservoirs, lakes, ponds) and 3.8 acres of valley foothill riparian habitat (Table 4.5-1). The National Wetlands Inventory classifies the project area as having 2.3 acres freshwater emergent wetland, 1.7 acres freshwater pond, and 71.0 acres of riverine habitat (USFWS 2022b). FRAP vegetation data and National Wetland Inventory data are sourced using different methods, which accounts for slight differences in acreages. While these acreages likely overlap significantly, totals for both sources are provided here to provide a full picture of aquatic habitat potentially present in the project area.

Pursuant to SPR HYD-4, a WLPZ of 50 to 150 feet adjacent to all Class I and Class II streams and lakes would be implemented, and WLPZs of sufficient size to avoid degradation of downstream beneficial uses of water would be established adjacent to all Class III and Class IV streams within the project area for manual treatments, mechanical treatments, prescribed burning, prescribed herbivory, and herbicide application. Establishment of WLPZs would result in avoidance of all stream and pond habitat for manual treatments, mechanical treatments, prescribed burning, prescribed herbivory, and herbicide application. Additionally, SPR HYD-3 provides water quality protections specific to prescribed herbivory, and requires that environmentally sensitive areas including waterbodies, wetlands, and riparian areas are identified in the treatment prescription and excluded from prescribed herbivory treatment areas using temporary fencing or active herding. A buffer of approximately 50 feet would be maintained between sensitive and actively grazed areas. Water would be provided for grazing animals in the form of an on-site stock pond or a portable water source located outside of the environmentally sensitive areas, and the prescribed herbivory treatment prescriptions would be designed to protect soil stability.

Additional wetlands may be present throughout the project area that have not been identified or mapped as well as ponds smaller than one acre (i.e., not considered a lake under Forest Practice Rules), seasonal wetlands, springs, and seeps (CAL FIRE 2020). Mitigation Measure BIO-4 would apply to all treatment activities, 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). A larger buffer may be required if wetlands or other aquatic habitats contain habitat potentially suitable for special-status plants or special-status wildlife (e.g., California red-legged frog, western pond turtle; see Impact BIO-2).

The potential for treatment activities to adversely affect state or federally protected wetlands was examined in the PEIR. This impact on wetlands is within the scope of the PEIR, because the treatment activities and intensity of disturbance as a result of implementing treatment activities would be consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, because the existing environmental conditions outside the treatable landscape in the project area are essentially the same as those within the treatable landscape, the potential impact on wetlands is also the same. Biological resource SPRs that apply to project impacts under Impact BIO-4 are SPR BIO-1, SPR HYD-1, SPR HYD-3, and SPR HYD-4. The biological resource mitigation measure that applies to project impacts under Impact BIO-4 is Mitigation Measure BIO-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-5

Initial vegetation treatments and maintenance treatments could result in direct or indirect adverse effects on wildlife movement corridors and nurseries. 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), the majority of the project area falls within mapped essential connectivity areas, from Tilden Regional Park in the north through Anthony Chabot Regional Park in the south (BIOS 2014; BIOS 2019). The project area overlaps mapped natural landscape blocks, with notable narrow bottlenecks at the intersection of Grizzly Peak Boulevard and Lomas Cantadas, the Caldecott Tunnel over SR 24, and at the open space near the intersection of Manzanita Drive and Pinehurst Road (BIOS 2017; BIOS 2019). The project is primarily composed of essential connectivity areas or natural landscape blocks. Additionally, small areas outside these mapped features likely contain natural habitat and are likely used as wildlife movement corridors to some degree, especially streams and associated riparian corridors.

WUI fuel reduction treatments would occur near existing roads, popular hiking and biking trails, and private residences. The size and traffic level of the roads and level of development within recreational and residential areas varies; however, these areas generally are subject to ongoing disturbances (e.g., visiting recreationists, vehicle traffic, human activity) and some level of wildlife habitat fragmentation due to historic urban, residential, and agricultural development of the region. Other treatments would include shaded fuel breaks that would retain some forest canopy, and ecological restoration treatments designed to improve forest health, to restore native grassland habitat, and to improve fire resilience and habitat function in shrubland. Wildlife may move through all treatment areas and use habitats for cover or as nursery sites.

Pursuant to SPR HYD-4, a WLPZ of 50 to 150 feet adjacent to all Class I and Class II streams and lakes would be implemented, which would limit the extent of treatment activities within riparian habitat (e.g., no mechanical treatment, retention of at least 75 percent surface cover) that would likely function as a wildlife movement corridor. Additionally, 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 be limited to removal of uncharacteristic or undesired fuel loads (e.g., dead or dying vegetation, invasive plants). As required by SPR BIO-10, a qualified RPF or biologist would conduct surveys for nursery sites within habitat suitable for nurseries, and SPR BIO-12 would be implemented for treatments that would occur during the nesting bird season and would result in identification and avoidance of any common bird nursery sites (e.g., heron rookeries, egret rookeries). Most large native trees would be retained; in fuel break and WUI fuel reduction treatment areas, treatment would retain native trees (i.e., conifers, hardwoods) greater than 12 inches dbh, and pine, eucalyptus, and *Prunus* species greater than 24 inches dbh inches, while in ecological restoration treatments, trees 12 inches dbh or greater would be retained in forested habitat, and 8 inches or greater would be retained in oak woodland habitat. Pursuant to SPRs BIO-3, BIO-4, and BIO-5, treatments in sensitive natural communities, riparian habitat, chaparral habitat, and coastal scrub habitat, respectively, would be designed to maintain habitat function of these communities. SPR BIO-11 would require all temporary fencing associated with prescribed herbivory treatments to be wildlife-friendly, such that the chance of wildlife entanglement would be minimized. Additionally, implementation of proposed treatments would not result in any conversion of land cover or create permanent new barriers to wildlife movements across the project area. With implementation of SPRs, habitat function within the project area would be maintained and there would not be a substantial change in the existing conditions that facilitate wildlife movement in the project area.

If during surveys conducted pursuant to SPR BIO-10 wildlife nursery sites (e.g., heron rookeries, deer fawning areas, common bat roosts, monarch overwintering colonies) are detected, Mitigation Measure BIO-5 would apply to all treatment activities and a no-disturbance buffer would be established around these features, the size of which would be determined by a qualified biologist or RPF.

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, because the treatment activities and extent of expected disturbance as a result of implementing treatment activities are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, because the existing environmental conditions outside the treatable landscape in the project area are essentially the same as those within the treatable landscape, as described above, the potential impact on wildlife movement corridors is also the same. Biological resource SPRs that apply to project impacts under Impact BIO-5 are SPR BIO-1, SPR BIO-4, SPR BIO-5, SPR BIO-10, SPR BIO-11, SPR HYD-1, and SPR HYD-4. The biological resources mitigation measure that applies to project impacts under Impact BIO-5 is

Mitigation Measure BIO-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-6

Initial treatment 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 nesting habitat suitable for birds is present throughout the project area. Treatment activities, including mechanical treatments, manual treatments, prescribed burning, herbicide application, and prescribed herbivory, 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, livestock, personnel) potentially resulting in abandonment and loss of eggs or chicks.

SPR BIO-12 would apply, and for treatments implemented during the nesting bird season, a survey for common nesting birds would be conducted within the project area by a qualified RPF or biologist before treatment activities. If no active bird nests are observed during focused surveys, then additional mitigation would not be required. If active nests of common birds or raptors are observed during focused surveys, disturbance to the nests would 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, because the treatment activities and extent of expected disturbance as a result of implementing treatment activities would be consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, because the existing environmental conditions outside the treatable landscape in the project area are essentially the same as those within the treatable landscape, as described above, the potential impact on common wildlife, including nesting birds is also the same. Biological resource SPRs that apply to project impacts under Impact BIO-6 are SPR BIO-1, SPR BIO-2, SPR BIO-3, SPR BIO-4, SPR BIO-5, 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. The project spans several regional jurisdictions, and several applicable local ordinances relevant to biological resources apply to the project area. The Alameda County General Plan identifies a goal to protect and enhance wildlife habitat and natural vegetation areas in Alameda County and identifies several objectives to achieve this goal. The general plan includes a requirement that removal of mature trees should not be permitted without permission of the local authority (Alameda County 1994a, Alameda County 1994b). In addition, the Contra Costa General Plan Conservation Element contains several goals and policies related to biological resources applicable to the project. (Contra Costa County 2005). This plan identifies goals of preservation of ecologically significant land, significant trees, and important wildlife habitats, as well as preservation of wildlife corridors, and that efforts should be made to retain mature native oak, bay, and buckeye trees. The general plan requires that mature, scenic, native trees are retained, and if removal is required due to unusual hazardous conditions, the Park District would be required to contact Contra Costa County. The Park District would comply with the relevant general plan, including contacting the appropriate county is needed. Additionally, significant important wildlife habitats and wildlife corridors would be preserved as discussed in Impact BIO-1 through Impact BIO-6. Therefore, all regional and local policies are consistent with the proposed project activities, and there would be no conflict with local ordinances as a result of implementation of treatment activities.

The potential for treatment activities to conflict with local policies or ordinances was examined in the PEIR. The potential for the treatment project to conflict is within the scope of the PEIR because vegetation treatment projects implemented under the CalVTP that are subject to local policies or ordinances would be required to comply with any applicable county, city, or other local policies, ordinances, and permitting procedures related to protection of

biological resources, per SPR AD-3. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the project area boundary, the existing regulatory conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the potential for conflicts with local policies or ordinances is also the same, as described above. 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-8

Implementation of the proposed vegetation treatment and maintenance treatments would not result in a conflict with adopted habitat conservation plans (HCP) or natural community conservation plans (NCCP). The project area falls within the boundaries of Pacific Gas & Electric's (PG&E) Operations and Maintenance Habitat Conservation Plan, also called the Bay Area O&M HCP, which covers the entire counties of Sonoma, Marin, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco. PG&E's HCP applies only to work conducted by PG&E Operations & Maintenance crews and does not apply to fuels reduction work conducted by the Park District. The potential for treatment activities to conflict with an adopted HCP or NCCP was examined in the PEIR. The project area does not fall within the boundaries of any other HCP or NCCP. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the project area boundary, the existing regulatory conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the potential for conflicts with an adopted HCP or NCCP is also the same. 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 BIOLOGICAL RESOURCE IMPACTS

The proposed treatment is consistent with the treatment types and activities considered in the CalVTP PEIR. The project proponent has considered the site-specific characteristics of the proposed treatment project and determined that 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). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to biological resources that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those considered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any 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	List MMs Applicable to the Treatment Project	Identify Impact Significance for Treatment Project	Would This Be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is This Impact within the Scope of the PEIR?
Would the project:								
Impact GEO-1: Result in Substantial Erosion or Loss of Topsoil	LTS	Impact GEO-1, pp. 3.7-26 – 3.7-29	Yes	GEO-1 through GEO-8 AQ-3 AQ-4	NA	LTS	No	Yes
Impact GEO-2: Increase Risk of Landslide	LTS	Impact GEO-2, pp. 3.7-29 – 3.7-30	Yes	AQ-3 GEO-1 GEO-3 GEO-4 GEO-7 GEO-8	NA	LTS	No	Yes

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

The project area is located in the Southern Coastal Ranges geomorphic province (CGS 2002). The Southern Coastal Range province is characterized by northwest trending rugged mountainous ranges and valleys, formed from partially metamorphosed and fractured volcanic and sedimentary rocks. The Southern Coastal Ranges formed relatively recently with the evolution of the San Andreas fault system and the development of the modern transform boundary between the Pacific and North American plates (refer to Section 3.7, "Geology, Soils, Paleontology, and Mineral Resources," page 3.7-6 in Volume II of the Final PEIR).

The project area is located along the peaks and the western slope of the East Bay Hills, which are also called the Contra Costa Range/Hills, with sub portions known as the Berkeley Hills and the Oakland Hills. Soils throughout the project area are variable, and most are formed from marine sedimentary and fractured volcanic rocks, including greenstone, basalt, chert, and graywackle from sea floor sediments. Gabbro soil is mapped in portions of the Serpentine Prairie Ridge and the French Trail treatment areas, and ultramafic soils, including serpentine soils, are mapped in the Serpentine Prairie Ridge treatment area (NRCS 2019). No other ultramafic or gabbro soils are mapped in the project area. Slopes are gradual and variable throughout the project area.

IMPACT GEO-1

Vegetation treatment would involve manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. These activities could result in varying levels of soil disturbance and have the potential to increase the rates of erosion and loss of topsoil. Mechanical treatments using heavy equipment are the most likely to cause soil disturbance that could lead to substantial erosion or loss of topsoil, especially in areas that contain steep slopes, or in areas that previously experienced fire. The potential for these treatment activities to cause substantial erosion or loss of topsoil was examined in the PEIR. These impacts are within the scope of the PEIR because the use and type of equipment, extent of vegetation removal, and intensity of proposed treatment activities (e.g., mechanical treatments, prescribed burning, prescribed herbivory) are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions, such as soil characteristics, present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the potential impact related to soil erosion is also the same, as described above. 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 PEIR.

IMPACT GEO-2

Treatment activities would include manual treatments, mechanical treatments, prescribed burning, herbicide application, and prescribed herbivory. In the southern portion of the project area, some treatment areas overlap areas identified as "likely landslide at or near this location" (USGS 2022). Landslide activity may have occurred at or near the Cow Hollow, Redwood Road Fuel Break, AC Grass Valley, Bort Meadow, and AC Soap Plant treatment areas. Given the variable topography in some portions of the project area, areas of steep terrain, and wet winter conditions, there is the potential for landslides throughout the project area. 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 extent of vegetation removal, intensity of treatment areas, and characteristics of the geographical terrain are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the range of slopes and landslide conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape. Therefore, the potential impact related to landslide risk is also the same, as described above. 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 consistent with the treatment types and activities considered in the CalVTP PEIR. The project proponent 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). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to geology and soils that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. 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	List MMs Applicable to the Treatment Project	Identify Impact Significance for Treatment Project	Would This Be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is This Impact within the Scope of the PEIR?
Would the project:								
Impact GHG-1: Conflict with Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs	LTS	Impact GHG-1, pp. 3.8-10 – 3.8-11	Yes	None	NA	LTS	No	Yes
Impact GHG-2: Generate GHG Emissions through Treatment Activities	SU	Impact GHG-2, pp. 3.8-11 – 3.8-17	Yes	AQ-3	GHG-2	SU	No	Yes

Notes: LTS = less than significant; SU = significant and unavoidable; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT GHG-1

Use of vehicles and 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. This impact is within the scope of the PEIR because the proposed activities, as well as the associated equipment, duration of use, duration of prescribed burning, and resultant GHG emissions, are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the same plans, policies, and regulations adopted to reduce GHG emissions apply in the areas outside the treatable landscape, as well as areas within the treatable landscape; therefore, the GHG impact is also the same, as described above. SPR GHG-1 is not applicable to the proposed project; the Park District is not subject to the reporting requirements under the Board of Forestry and Fire Protection's Assembly Bill 1504 Carbon Inventory Process because this project is not a registered offset project. 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

Use of vehicles and mechanical equipment and prescribed burning during initial and maintenance treatments would result in GHG emissions. The potential for treatments under the CalVTP to generate GHG emissions was examined in the PEIR and found to be significant and unavoidable after the application of all feasible mitigation measures because of the infeasibility of implementing specific emission reduction techniques and the uncertainties associated with all the parameters and objectives of prescribed burning. Mitigation Measure GHG-2 requires project proponents to implement feasible methods to reduce the GHG emissions from prescribed burning, including pile burning. Accordingly, the Park District is proposing the potential use of air curtain burners, carbonators, and gasifiers. The essential function of these technologies 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 CO_2 emissions compared to pile burning (Puettman et. al. 2015 as cited in Ascent 2022). The specific GHG emissions of pyrolysis and gasification depend on multiple factors, but are lower than pile burning in all cases (Ascent 2022). Additionally, the production of biochar by these technologies and subsequent application as a soil amendment provides long-term carbon sequestration benefits that are not available from pile burning.

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 by using specialized biomass processing technologies (i.e., air curtain burners, carbonation, and gasification) when feasible to reduce GHG emissions associated with prescribed burning (pile burning). Although use of biomass processing technologies would substantially reduce GHG emissions, emissions generated by the treatment 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 would contain the description of feasible GHG reduction techniques implemented per Mitigation Measure GHG-2.

The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the climate conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the GHG impact is also the same, as described above. 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 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 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). Including land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions pertinent to the climate conditions that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to GHG emissions would occur.

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	List MMs Applicable to the Treatment Project	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

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT ENG-1

Use of vehicles, mechanical equipment, and some manual equipment (e.g., chainsaws) 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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the existing energy consumption is essentially the same within and outside the treatable landscape; therefore, the energy impact is also the same, as described above. 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 project proponent 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). Including land outside the treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those considered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to energy resources would occur.

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	List MMs Applicable to the Treatment Project	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 through 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

Notes: LTS = less than significant; LTSM = less than significant with mitigation; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT HAZ-1

Initial and maintenance treatments would include mechanical treatments, manual treatments, and prescribed burning. 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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the exposure potential and regulatory conditions are essentially the same within and outside the treatable landscape; therefore, the hazardous material impact is also the same, as described above. 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 would include the application of herbicides using ground-based methods, such as using a backpack sprayer or painting herbicide onto cut stems. 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 herbicides (e.g., clopyralid, glyphosate, triclopyr, imazapyr) and application methods that would be used are consistent with those analyzed in the PEIR. In addition, herbicides would be applied by licensed applicators in compliance with applicable laws, regulations, and herbicide label instructions, consistent with herbicide use described in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the exposure potential is essentially the same within and outside the treatable landscape; therefore, the hazardous materials impact is also the same, as described above. 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 would include soil disturbance and prescribed burning, which could expose workers or the environment to hazardous materials if a contaminated site is present within the project area. The potential for workers implementing treatment activities to encounter contamination that could expose them 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 areas, and soil disturbance or burning in those areas could expose people or the environment to hazards. As directed by Mitigation Measure HAZ-3, database searches for hazardous materials sites within the project area have been conducted. Four leaking underground storage tank sites (AT&T [T0600100123], Round Top Radio Relay [T0601300242], Redwood Regional Park [T0600100489], and Willow Park Golf Course [T0600101549]) were identified within 0.25 mile of the project area; however, all sites have been remediated and closed (DTSC 2022; CalEPA 2022; SWRCB 2022) (Attachment D). 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.

The inclusion of land in the project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the potential to encounter hazardous materials and the regulatory conditions present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the hazardous materials impact is also the same, as described above. 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. 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 3.10.1, "Environmental Setting," and Section 3.10.2, "Regulatory Setting," in Volume II of the Final PEIR). Including land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to hazardous materials that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. 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	List MMs Applicable to the Treatment Project	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 HYD-6 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-6 GEO-1 through GEO-5 GEO-7 GEO-8 BIO-1 BIO-4 BIO-5 HAZ-1 HAZ-5	NA	LTS	No	Yes
Impact HYD-3: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Prescribed Herbivory	LTS	Impact HYD-3, p. 3.11-29	Yes	HYD-3 GEO-1 GEO-3 GEO-4 GEO-7	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	List MMs Applicable to the Treatment Project	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-5	NA	LTS	No	Yes

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

The project area is within the San Francisco Bay hydrologic region and spans three watersheds: the Pinole Creek-Frontal San Pablo Bay Estuary watershed, Cerrito Creek-Frontal San Francisco Bay Estuary watershed, and San Leandro Creek watershed. Major perennial hydrologic features in the project area include Wildcat Creek, San Leandro Creek, Redwood Creek, and Cull Creek. San Pablo Reservoir, the Upper San Leandro Reservoir, and Lake Chabot are present in the vicinity of the project but are outside of the project area. Waterways in the project area have not been characterized by stream class by a qualified RPF or qualified biologist, but based on the results of the reconnaissance survey (see Section 4.5, "Biological Resources"), Class I, Class II, and Class III features are likely to be present in the project area. Hydrologic features generally behave differently on the north versus the south side of SR 24 in the project area because SR 24 represents the point of highest elevation in the area. Wildcat Creek represents the primary hydrologic feature north of SR 24 and flows north into San Francisco Bay at North Richmond. South of SR 24, waterways such as San Leandro Creek, Redwood Creek, and Cull Creek, generally flow south and drain into Upper San Leandro Reservoir and Lake Chabot, which are human-made reservoirs. Creeks and waterways in this region are frequently characterized by small, steep watersheds that experience short, intense storms.

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 water quality regulations. The State Water Resources Control Board requires all projects using the CalVTP PEIR to follow the requirements of their Vegetation Treatment General Order (General Order), which meets 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

Proposed treatments would include broadcast burning and pile burning. Ash and debris from treatment areas could be washed by runoff into adjacent drainages and streams. Although most treatment areas would avoid streams and watercourses, WLPZs ranging from 50 to 150 feet would be implemented for Class I and Class II 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 parameters of broadcast burns (i.e., low intensity) and pile burning are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the surface water conditions are essentially the same within and outside the treatable landscape; therefore, the water quality impact from prescribed burning is also the same, as described above. SPRs applicable to this treatment are HYD-1, HYD-4, HYD-6, 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 manual and mechanical treatment activities. Although most treatment areas would avoid streams and watercourses, WLPZs ranging from 50 to 150 feet would be implemented for any watercourses 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 and type of equipment used (e.g., tractors/skidders, masticators, chainsaws, hand saws, brush cutters), extent of vegetation removal, and intensity of proposed mechanical treatment activities are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the surface water conditions are essentially the same within and outside the treatable landscape; therefore, the water quality impact from manual and mechanical treatments is also the same, as described above. SPRs applicable to this treatment are HYD-1, HYD-2, HYD-4, HYD-6, GEO-1 through GEO-5, GEO-7, GEO-8, BIO-1, BIO-4, BIO-5, 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 treatment would include prescribed herbivory. Environmentally sensitive areas such as waterbodies, wetlands, or riparian areas would be identified and excluded from prescribed herbivory using temporary fencing or active herding; a buffer of approximately 50 feet would be maintained between sensitive and actively grazed areas as required by SPR HYD-3. Additionally, WLPZs ranging from 50 to 150 feet would be implemented for any watercourses that are within treatment areas pursuant to SPR HYD-4. These WLPZ restrictions do not apply to stock ponds maintained for existing cattle grazing throughout the project area because they are too small to meet the definition of a lake as defined under Forest Practice Rules (i.e., a permanent natural body of water of any size or an artificially impounded body of water having a surface area of at least 1 acre; CAL FIRE 2020). The potential for prescribed herbivory 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 grazing animals (e.g., sheep or goats) and the grazing intensity to manage and remove vegetation are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the surface water conditions are essentially the same within and outside the treatable landscape; therefore, the water quality impact from prescribed herbivory treatments is also the same, as described above. SPRs applicable to this treatment are HYD-3, GEO-1, GEO-3, GEO-4, and GEO-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-4

Initial and maintenance treatments would include the occasional use of herbicides to help prevent resprouting tree species (e.g., California bay), invasive plants and noxious weeds, and regrowth of native shrub species (e.g., coyote brush) within certain areas of the project. Herbicide application would be limited to ground-based methods, such as a using targeted spray from a backpack or reservoir carried by a UTV, or painting herbicide onto cut stems. 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 and types of herbicides (e.g., clopyralid, glyphosate, hexazinone, imazapyr, triclopyr) to remove vegetation are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, surface water conditions are essentially the same within and outside the treatable landscape; therefore, the water quality impact from use of herbicides is also the same, as described above. 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 area was examined in the PEIR. This impact on site drainage is within the scope of the PEIR because the use and type of equipment, extent of vegetation removal, use of manual treatments and prescribed herbivory, and intensity of proposed mechanical treatment activities are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, surface water conditions are essentially the same within and outside the treatable landscape; therefore, the impact related to alteration of site drainage patterns is also the same, as described above. SPRs applicable to this treatment are HYD-4, HYD-6, 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 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 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). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to hydrology and water quality that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. 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	List MMs Applicable to the Treatment Project	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

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT LU-1

Initial treatment and treatment maintenance activities would occur on property owned by the Park District. As described in Section 4.4, "Biological Resources," the proposed project activities would be consistent with regional and local policies protecting biological resources, and as noted in Section 4.12, "Noise," below, treatment activities would take place during daytime hours consistent with the Alameda County and Contra Costa County general plan noise elements. While there is the potential for some prescribed burning and prescribed herbivory to occur during nighttime and weekend hours, all treatment activities using noise-generating equipment would typically be limited to 7:00 am to 7:00 pm on Monday through Friday and 8:00 am and 5:00 pm on Saturdays and Sundays, which would avoid the potential to cause sleep disturbance to residents during the more noise-sensitive evening and nighttime hours. The potential for vegetation treatment activities to cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation was examined in the PEIR. This impact is within the scope of the PEIR because the treatment types and activities are consistent with those analyzed in the PEIR. No conflict would occur because the project proponent would adhere to SPR AD-3. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent considered in the PEIR. However, land uses in the project area are essentially the same within and outside the treatable landscape; therefore, the land use impact is also the same, as described above. 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 and maintenance treatments to result in substantial unplanned population growth as a result of increases in demand for employees was examined 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 (less than) the crew sizes analyzed in the PEIR for the types of treatments proposed (i.e., 10 to 50 crew members for prescribed burns, 8 to 20 crew members and up to four crews for mechanical and manual treatments, up to 10 crew members for herbicide treatments, and one to two workers for prescribed herbivory). In addition, the proposed project would be implemented by existing Park District staff positions and contractors; the Park District does not have any current plans to hire new employees or create new staff positions at the Park District to implement the proposed project, because the Park District currently employs crews for vegetation management and they can also carry out the proposed project. In the future, new position(s) could be created to assist with implementation, but positions would be few in number compared to the current population in the area and therefore would be consistent with the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the population and housing characteristics of the project area are essentially the same within and outside the treatable landscape; therefore, the population and housing impact is also the same, as described above. 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 LAND USE AND PLANNING, POPULATION AND HOUSING IMPACTS

The proposed project is consistent with the treatment types and activities considered in the CalVTP PEIR. The project proponent 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 3.12.1, "Environmental Setting," and Section 3.12.2, "Regulatory Setting," in Volume II of the Final PEIR). Including land in the proposed project area that is outside the treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing conditions that are pertinent to land use and planning, population and housing that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to land use and planning, population and housing 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	List MMs Applicable to the Treatment Project	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 through 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

Notes: LTS = less than significant; NA = not applicable because there are no SPRs and/or MMs identified in the PEIR for this impact.

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
	☐	☐	☐

Discussion

IMPACT NOI-1

Initial and maintenance treatments would require heavy, noise-generating equipment. Manual treatments, mechanical treatments, and prescribed burning occurring adjacent to sensitive land uses could temporarily expose those receptors to noise levels that exceed local standards. Prescribed herbivory and herbicide application would not require the use of noise-intensive equipment; noise generated by these treatment types would be negligible. 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 equipment use being temporary and sporadic, are consistent with the assumptions 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.

Alameda County's Noise Ordinance (County General Code, Chapter 6.60) contains provisions that limit noise sources associated with construction to certain hours (i.e., construction noise may only occur between 7:00 am and 7:00 pm on weekdays and between 8:00 am and 5:00 pm on weekends). Regarding stationary equipment that could operate during the nighttime hours (10:00 pm to 7:00 am), Alameda County limits noise exposure to residential and commercial uses based on the duration of time a noise source occurs. Applying Alameda County Exterior Noise Standards (Table 11-1 of the Alameda County General Plan and Table 6.60.040A of the Alameda County Municipal Code), the applicable nighttime noise standard for residential and commercial uses would be 45 A-weighted decibels (dBA) and 60 dBA, respectively. The Alameda County standards use percentile noise metrics, meaning that these

noise limits should not be exceeded for more than 30 cumulative minutes in any one hour, commonly referred to as an L_{50}. For continuous noise sources in typical environments, the L_{50} and the hourly average (i.e., L_{eq}) would be similar; thus, the L_{eq} (hourly average) noise level is used in this analysis for comparison to the Alameda County noise standards. Contra Costa County does not have a noise ordinance. However, Policy 11-2 of the General Plan establishes a 24-hour noise limit, referred to as the day-night noise level (i.e., L_{dn}) of 60 dBA for residential uses.

As discussed in the PEIR, noise levels generated by individual equipment range from 75 to 87.9 dBA at 50 feet from the noise source (75 to 85 dB at 50 feet from the noise source for projects without the use of helicopters). The loudest types of equipment proposed for this project are chainsaws. Though multiple pieces of equipment would be operated simultaneously to implement a treatment, they would typically be spread out (i.e., usually more than 100 feet apart) rather than operating next to each other. This is particularly true of larger, heavy-duty off-road equipment such as masticators and chippers. Noise-generating equipment would be used intermittently between 7:00 am and 7:00 pm during treatments on weekdays and between 8:00 am and 5:00 pm during treatments on weekends. While there is the potential for some prescribed burning to occur during nighttime and weekend hours, most treatment activities using noise-generating equipment would be limited to 7:00 am to 7:00 pm Monday through Friday, and between 8:00 am and 5:00 pm on weekends, which would avoid the potential to cause sleep disturbance to residents during the more noise-sensitive evening and nighttime hours. However, in remote locations (e.g., Grizzly Flat Biomass Processing Area in Alameda County and Anthony Chabot Biomass Processing Area in Contra Costa County), the 24-hour operation of a diesel-powered carbonator would be required to process biomass.

All treatment activities would only occur outside of the 100-foot defensible space requirement described in PRC 4291 and therefore, would not occur within 100 feet of sensitive receptors. The daytime use equipment noise levels discussed above are at 50 feet from the noise source. Therefore, there would be additional attenuation for distance, vegetation, and building materials that would result in interior noise levels being lower than the 75 to 85 dB levels estimated for equipment. Treatments would also be dispersed throughout the 2,280-acre project area so that short-term noise increases at any one sensitive receptor would be limited.

Regarding the use of the carbonator during the nighttime, anticipated noise levels were estimated using available reference noise levels for diesel-powered engines. Based on modeling conducted, hourly noise levels from operation of the carbonator were estimated to be 72 dBA L_{eq} at 50 feet and 64 dBA L_{eq} at 100 feet (i.e., the defensible space buffer required by PRC 4291). Adjusting noise levels based on standard attenuation rates, carbonator use within Alameda County would not exceed residential noise standards of 45 dBA L_{eq} at distances beyond 525 feet and would not exceed commercial use noise standards of 60 dBA L_{eq} at distances beyond 150 feet. There are no residential or commercial receptors within these distances to the Grizzly Flat Biomass Processing Area within Alameda County. For carbonator use within Contra Costa County, the applicable residential noise standard of 60 dBA L_{dn} would not be exceeded at distances beyond 250 feet from the carbonator use. There are no residential uses within this distance to the Anthony Chabot Biomass Processing Area in Contra Costa County. The nighttime use of the carbonator would not result in exceedances of applicable Alameda or Contra Costa County noise standards. See Attachment E for noise modeling inputs and outputs. In the future, other disturbed locations within similar distances to the treatment areas may be designated as central biomass processing areas and would not result in exceedances of applicable Alameda or Contra Costa County noise standards, as required by SPR AD-3.

Further, SPRs AD-3 and NOI-1 through NOI-5 are applicable to this treatment. With implementation of SPR AD-3, noise levels associated with vegetation treatment activities under the CalVTP would not exceed local land use/noise compatibility standards, and noise exposure attributed to vegetation treatment activities under the CalVTP would not generate a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of local standards. For any sensitive receptors (e.g., residential land uses, schools, places of worship) that are within 1,500 feet of a treatment area, SPR NOI-6 would also apply. There are residences scattered throughout the project area that could be within 1,500 feet of proposed treatments. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the exposure potential to any sensitive receptors present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the noise impact is also the same, as described above. 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 to the project area. These haul truck trips would be dispersed on area roadways providing access to the project area including, but not limited to I-580, SR 13, SR 24, the Caldecott Tunnel over SR 24, Manzanita Drive, Pinehurst Road, Grizzly Peak Boulevard, and Lomas Cantadas. 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 Level. The potential for a substantial short-term increase in Single-Event Noise Level 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 treatment. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the exposure potential is essentially the same within and outside the treatable landscape; therefore, the noise impact is also the same, as described above. 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. 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 3.13.1, "Environmental Setting," and Section 3.13.2, "Regulatory Setting," in Volume II of the Final PEIR). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to noise that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to noise would occur.

4.13 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	List MMs Applicable to the Treatment Project	Identify Impact Significance for Treatment Project	Would This Be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is This Impact within the Scope of the PEIR?
Would the project:								
Impact REC-1: Directly or Indirectly Disrupt Recreational Activities within Designated Recreation Areas	LTS	Impact REC-1, pp. 3.14-6 – 3.14-7	Yes	REC-1	NA	LTS	No	Yes

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

Recreational facilities are present within the project area, such as Tilden Regional Park, Sibley Volcanic Regional Preserve, Redwood Regional Park, and Anthony Chabot Regional Park. The treatment areas are in the East Bay Hills, which divide the Berkeley-Oakland coastal area from the east bay regions of Orinda and Moraga. The treatment areas are generally rural with various levels of recreational use. Recreation areas and trails are present throughout the treatment areas within the Park District parks.

IMPACT REC-1

Vegetation treatment activities have the potential to disrupt recreational activities within the project area through temporary trail closures during active treatments and by degrading the experience of recreationists through the creation of noise, dust, degradation of scenic views, or increased traffic. The potential for vegetation treatment activities to disrupt recreation activities was examined in the PEIR. This impact is within the scope of the PEIR because the availability of recreational resources and the treatment activities and intensity are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the availability of recreation resources within the project area is essentially the same within and outside the treatable landscape; therefore, the impact to recreation is also the same, as described above. The SPR applicable to this treatment is REC-1. This determination is consistent with the PEIR and would not constitute a substantially more severe significant impact than covered in the PEIR.

NEW RECREATION IMPACTS

The proposed project is consistent with the treatment types and activities considered in the CalVTP PEIR. The project proponent 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). Including land in the proposed project area that is outside the treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental conditions pertinent to recreation that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to recreation would occur.

4.14 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	List MMs Applicable to the Treatment Project	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	Yes	AD-3 TRAN-1	NA	LTS	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

Notes: LTS = less than significant; SU = significant and unavoidable; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT TRAN-1

Initial and maintenance treatments would temporarily increase vehicular traffic along roadways throughout the project area, including SR 24, I-580, SR 13, and various public and private roadways. The potential for a temporary increase in traffic to conflict with a program, plan, ordinance, or policy addressing roadway facilities or prolonged road closures was examined in the PEIR. The proposed treatments would be short term, and temporary increases in traffic related to treatments are within the scope of the PEIR because the treatment duration and limited number of vehicles (i.e., heavy equipment transport, crew vehicles for crew members) associated with the proposed treatments are consistent with those analyzed in the PEIR. In addition, the proposed treatments would not all occur concurrently, and increases in vehicle trips associated with the treatments would be dispersed on multiple roadways. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing transportation conditions (e.g., roadways and road use) present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the transportation impact is also the same, as

described above. The SPRs applicable to this treatment are AD-3 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-2

Initial and maintenance treatments would not require the construction or alteration of any roadways. However, the proposed treatments would include prescribed burning, which would produce smoke and could potentially affect visibility along nearby roadways, and hauling heavy machinery and operating large trucks along roadways, such that a transportation hazard could occur. The potential for increased hazards 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 and limited number of large trucks (e.g., hauling equipment) along roadways are consistent with that analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing transportation conditions (e.g., roadways and road use) present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the transportation impact is also the same, as described above. 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

Treatments could temporarily increase vehicle miles traveled (VMT) above baseline conditions because the proposed project would require vehicle trips to transport crew members and equipment to the treatment areas and haul vegetative debris to processing facilities. 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. Treatment activities under the proposed project would typically require between one and 50 crew members. The potential for an increase in VMT on affected roadways during implementation of the treatment project was examined in the PEIR. A temporary increase in VMT is within the scope of the activities and impacts addressed in the PEIR because the number and duration of increased vehicle trips, the size and number of crews, and treatment activities are consistent with that analyzed in the PEIR. The increase in vehicle trips would be temporary and dispersed over multiple roadways. The Park District would implement Mitigation Measure AQ-1 to the extent feasible. While carpooling would be encouraged under Mitigation Measure AQ-1, crew sizes would be small and may not all be employed with the same company. Therefore, carpooling may not be feasible to implement for most of the workers. The proposed project would contribute to the cumulative increase in VMT attributable to implementation of the CalVTP. For these reasons, and as explained in the PEIR, this impact would remain significant and unavoidable. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the transportation-related conditions in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the transportation impact is also the same, as described above. 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 TRANSPORTATION

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 3.15.1, "Environmental Setting," and Section 3.15.2, "Regulatory Setting," in Volume II of the Final PEIR). Including land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to transportation that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to transportation would occur.

4.15 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	List MMs Applicable to the Treatment Project	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	Yes	UTIL-1	NA	SU	No	Yes
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	Yes	UTIL-1	NA	LTS	No	Yes

Notes: LTS = less than significant; SU = significant and unavoidable; NA = not applicable because 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
	☐	☐	☐

Discussion

IMPACT UTIL-1

Initial and maintenance treatments would include prescribed burning, which would require an on-site water supply (water trucks) to be available as a safety precaution. If needed to extinguish the burn, water would be supplied from water trucks. 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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the water supplies present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the water supply impact is also the same, as described above. 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 within the project area. Biomass generated by mechanical and manual treatments would be disposed of by several means. Vegetative biomass would be retained on-site (e.g., mulched, lopped and scattered), processed on-site (e.g., pile burning, processed with biomass processing technology), or hauled off-site to a biomass processing facility or processing area. The type and relative amounts of biomass disposal would be dependent on vegetation type; refer to Table 2-3 for vegetation type-specific biomass disposal methods and amounts. Invasive plants and noxious weeds would generally be cut based on species-specific phenology and timing to avoid spreading seed and propagules altogether. Given their invasive nature, biomass from invasive plants and noxious weeds would be processed on-site in the same location to prevent spread of seed bank or propagules to other areas or would be disposed of off-site to 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 to handle biomass. For the proposed treatment project, some invasive plant biomass would be hauled off-site. While the amount of biomass generated is not expected to exceed the capacity of existing local infrastructure in Contra Costa County and Alameda County, because the project would generate biomass needing off-site disposal, it would contribute to the environmental significance conclusion in the PEIR; therefore, for purposes of CEQA compliance, this PSA/Addendum notes the impact as potentially significant and unavoidable. SPR UTIL-1 would be applicable to the proposed treatments for biomass that would be hauled off-site. The inclusion of land in the proposed treatment area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, conditions related to biomass in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, impacts related to biomass are also the same, as described above.

IMPACT UTIL-3

As discussed above, initial and maintenance treatments would generate biomass. Biomass generated by mechanical and manual treatments would be disposed of by several means. Vegetative biomass would be retained on-site, processed on-site, or hauled off-site to a biomass processing facility or processing area. Invasive plant and noxious weed biomass would also be treated on-site or disposed of off-site at an appropriate waste collection facility. If off-site disposal is needed, the Park District would 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 were 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. The inclusion of land in the proposed treatment area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the biomass conditions in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, impacts related to biomass are also the same, as described above. 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 site-specific characteristics of the proposed treatments 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). Including land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to public services, utilities, and service systems that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts are the same and, for the reasons described above, impacts of the proposed treatment project are also consistent with those covered in the PEIR. No changed circumstances are present, and the inclusion of areas outside of the CalVTP treatable landscape would not give rise to any new significant impacts. Therefore, no new impact related to public services, utilities, or service systems would occur.

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	List MMs Applicable to the Treatment Project	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	AD-3 AQ-3 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

Notes: LTS = less than significant; NA = not applicable because 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
	☐	☐	☐

Discussion

The project area is in a very high fire severity zone (CAL FIRE 2022a). No documented wildfires have occurred in the project area in the past 50 years, though portions of the project area burned in the 1953 Cull Canyon fire (CAL FIRE 2022b) and the 1980 Berkeley/Wildcat fire, the 1991 Oakland/Berkeley fire, and the 1994 Castro Valley fire ignited and burned near the boundary of the project area (EBRPD 2001).

IMPACT WIL-1

Proposed vegetation treatment activities are mechanical, manual, herbicide application, prescribed herbivory, and prescribed burning treatments. Vegetation treatments involving mechanical equipment could pose a risk of accidental ignition. Temporary increases in risk associated with uncontrolled fire from prescribed burns 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 prescription 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 implementation of prescribed burning is within the scope of the PEIR because the types of equipment and treatment duration and the types of prescribed burning methods proposed as part of the project are consistent with those analyzed in the PEIR. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the wildfire risk is essentially the same within and outside the treatable landscape; therefore, the wildfire impact is also the same, as described above. SPRs applicable to this treatment are AD-3, AQ-3, HAZ-2, HAZ-3, and HAZ-4. 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 would include prescribed burning, which would be low severity and typically retain a mosaic of vegetation including root systems, thereby maintaining stability of the soil. The potential for post-fire landslides and flooding was evaluated in the PEIR. The potential exposure of people or structures to post-wildfire 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. The inclusion of land in the proposed project area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the wildfire risk of the project area is essentially the same within and outside the treatable landscape; therefore, the wildfire impact is also the same, as described above. SPRs applicable to this impact are AQ-3, GEO-3 through GEO-5, and GEO-8. Furthermore, because the treatments reduce wildfire risk, they would 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. The project proponent 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). Including land from outside the CalVTP treatable landscape in the proposed project area constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the existing environmental and regulatory conditions pertinent to wildfire that are present in the areas outside the treatable landscape are essentially the same as those within the treatable landscape; therefore, the impacts of the proposed treatment project are also consistent with those covered 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

East Bay Regional Park District (Lead Agency)

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Lily Bostrom ..... Project Manager

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CalOSHA. *See* California Division of Occupational Safety and Health.

CAL FIRE. *See* California Department of Forestry and Fire Protection.

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CDFW. *See* California Department of Fish and Wildlife.

CGS. *See* California Geological Survey.

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CNPS. *See* California Native Plant Society.

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Attachment A

Mitigation Monitoring and Reporting Program for the East Bay Hills Vegetation Treatment Project

(CalVTP Project ID: 2022-24)

MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

The California Environmental Quality Act (CEQA) and the State CEQA Guidelines (PRC Section 21081.6 and State CEQA Guidelines Sections 15091[d] and 15097) require public agencies "to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Program (MMRP) is required for approval of the proposed project because the Project-Specific Analysis/Addendum to the California Vegetation Treatment Program (CalVTP) Program Environmental Impact Report (PEIR) (PSA/Addendum) identifies potential significant adverse impacts and all feasible mitigation measures have been adopted. Standard project requirements (SPRs), which are part of the project description, have been incorporated to avoid or minimize adverse effects. Where potentially significant impacts remain after application of SPRs, mitigation measures have been identified to further reduce and/or compensate for those impacts. While only mitigation measures are required to be covered in an MMRP, both SPRs and mitigation are included in this MMRP to assist in implementation of all environmental protection features of later activities consistent with the CalVTP PEIR.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to facilitate the implementation of SPRs and mitigation measures. The attached table presents the text of each SPR and mitigation measure from the CalVTP PEIR that is applicable to the project, the timing of its planned implementation, the implementing entity, and the entity with monitoring responsibility. The numbering of SPRs and mitigation measures follows the numbering used in the PEIR. SPRs and mitigation measures that are referenced more than once in the PSA are not duplicated in the MMRP. Instructions for project-specific implementation of certain SPRs and Mitigation Measures have been added to tailor the specific impact avoidance and minimization actions relevant to the proposed treatments, agency standard practices, and the conditions and resources present within each treatment site.

ROLES AND RESPONSIBILITIES

Unless otherwise specified herein, East Bay Regional Park District (the Park District) is responsible for taking all actions necessary to implement the mitigation measures under its jurisdiction according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. The Park District will be responsible for implementation of mitigation measures pursuant to Section 15097 of the State CEQA Guidelines.

REPORTING

The Park District shall document and describe the compliance of the project treatment work with the required SPRs and mitigation measures either by adapting the project-specific MMRP table or preparing a separate post-project implementation report pursuant to the requirements of SPR AD-7.

MITIGATION MONITORING AND REPORTING PROGRAM TABLE

The categories identified in the attached MMRP table are described below.

- **SPRs and Mitigation Measures** – This column provides the text of the applicable SPR or adopted mitigation measure.
- **Timing** – This column identifies the time frame in which the SPR or mitigation measure will be implemented.
- **Implementing Entity** – This column identifies the party responsible for implementing the SPR or mitigation measure.
- **Verifying/Monitoring Entity** – This column identifies the party responsible for verifying and monitoring implementation of the SPR or mitigation measure.

QUALIFICATION REQUIREMENTS FOR BIOLOGICAL AND CULTURAL RESOURCE MEASURES

The biological and cultural resource SPRs and mitigation measures in the attached MMRP table require that qualified individuals implement components of the measures. The CalVTP PEIR requirements listed below will be met to be considered qualified and may be performed by individuals of various titles (including archaeologist, biologist, botanist, ecologist, Registered Professional Forester (RPF), biological technician, or supervised designees working at the direction of a qualified professional) as long as they are qualified for the task at hand.

Archaeologically Trained Resource Professional: To be qualified, an archaeologically trained resource professional would hold a valid Archaeological Training Certificate issued by CAL FIRE and the Board of Forestry and Fire Protection or equivalent state or local agency training or certification. Work performed by an archaeologically trained resource professional must be reviewed and approved by a qualified archaeologist.

Qualified Archaeologist: To be qualified, an archaeologist would hold a Prehistoric Archeology, Historic Archeology, Conservation, Cultural Anthropology, or Curation degree from an accredited university and meet the Secretary of Interior's Qualifications Standards (36 CFR Part 61). The project proponent will review the resume and approve the qualifications of the archaeologists.

- **Project-Specific Guidance to Implement:** The project proponent's cultural staff will review the resume and approve the qualifications of the archaeologists.

Qualified RPF or Biological Technician: To be qualified, an RPF or biological technician would 1) be knowledgeable in relevant species life histories and ecology, 2) be able to correctly identify relevant species and habitats, 3) have experience conducting biological monitoring of relevant species or resources, and 4) be knowledgeable about state and federal laws regarding the protection of special-status species. The project proponent will review the resume and approve the qualifications of RPFs or biological technicians.

Qualified RPF or Biologist: To be qualified, an RPF or biologist would hold a wildlife biology, botany, ecology, forestry, or other relevant degree from an accredited university and: 1) be knowledgeable in relevant species life histories and ecology, 2) be able to correctly identify relevant species and habitats, 3) have experience conducting field surveys of relevant species or resources, 4) be knowledgeable about survey protocols, 5) be knowledgeable about state and federal laws regarding the protection of special-status species, and 6) have experience with CDFW's California Natural Diversity Database (CNDDB) and Biogeographic Information and Observation System (BIOS). The project proponent will review the resume and approve the qualifications of RPFs or biologists. If species-specific protocol surveys are performed, surveys would be conducted by qualified RPFs or biologists with the minimum qualifications required by the appropriate protocols, including having CDFW or USFWS approval to conduct such surveys, if required by certain protocols.

Qualified RPF or Botanist: To be qualified, an RPF or botanist would 1) be knowledgeable about plant taxonomy, 2) be familiar with plants of the region, including special-status plants and sensitive natural communities, 3) have experience conducting floristic botanical field surveys as described in CDFW "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities" (current version dated March 20, 2018), or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor, 4) be familiar with the *California Manual of Vegetation* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/), and 5) be familiar with federal, state, and local statutes and regulations related to plants and plant collecting. The project proponent will review the resume and approve the qualifications of RPFs or botanists.

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
Administrative Standard Project Requirements			
SPR AD-1 Project Proponent Coordination: For treatments coordinated with CAL FIRE, CAL FIRE will meet with the project proponent to discuss all natural and environmental resources that must be protected using SPRs and any applicable mitigation measures; identify any sensitive resources onsite; and discuss resource protection measures. For any prescribed burn treatments, CAL FIRE will also discuss the details of the burn plan in the incident action plan (IAP). This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR AD-1** The following guidance supplements SRP AD-1. For treatments coordinated with CAL FIRE, this SPR will be implemented for natural, cultural, and environmental resources.	Prior to treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AD-2 Delineate Protected Resources: The project proponent will clearly define the boundaries of the treatment area and protected resources on maps for the treatment area and with highly visible flagging or clear, existing landscape demarcations (e.g., edge of a roadway) prior to beginning any treatment to avoid disturbing the resource. "Protected Resources" refers to environmentally sensitive places within or adjacent to the treatment areas that would be avoided or protected to the extent feasible during planned treatment activities to sustain their natural qualities and processes. This work will be performed by a qualified person, as defined for the specific resource (e.g., qualified Registered Professional Forester or biologist). This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AD-3 Consistency with Local Plans, Policies, and Ordinances: The project proponent will design and implement the treatment in a manner that is consistent with applicable local plans (e.g., general plans, Community Wildfire Protection Plans, CAL FIRE Unit Fire Plans), policies, and ordinances to the extent the project is subject to them. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AD-4 Public Notifications for Prescribed Burning: At least three days prior to the commencement of prescribed burning operations, the project proponent will: 1) post signs along the closest public roadway to the treatment area describing the activity and timing, and requesting persons in the area to contact a designated representative of the project proponent (contact information will be provided with the notice) if they have questions or smoke concerns; 2) publish a public interest notification in a local newspapers or other widely distributed media source describing the activity, timing, and contact information; 3) send the local county supervisor and county administrative officer (or equivalent official responsible for distribution of public information) a notification letter describing the activity, its necessity, timing, and measures being taken to protect the environment and prevent prescribed burn escape. This SPR applies only to prescribed burn treatment activities and all treatment types, including treatment maintenance.	At least three days prior to prescribed burn treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR AD-5 Maintain Site Cleanliness: If trash receptacles are used on-site, the project proponent will use fully covered trash receptacles with secure lids (wildlife proof) to contain all food, food scraps, food wrappers, beverages, and other worker generated miscellaneous trash. Remove all temporary non-biodegradable flagging, trash, debris, and barriers from the project site upon completion of project activities. This SPR applies to all treatment activities and all treatment types, including treatment maintenance.	Prior to, during, and following treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
SPR AD-6 Public Notifications for Treatment Projects. One to three days prior to the commencement of a treatment activity, the project proponent will post signs in a conspicuous location near the treatment area describing the activity and timing, and requesting persons in the area to contact a designated representative of the project proponent (contact information will be provided with the notice) if they have questions or concerns. This SPR applies to all treatment activities and all treatment types, including treatment maintenance. Prescribed burning is subject to the additional notification requirements of SPR AD-4. **Project-Specific Guidance to Implement SPR AD-6** The following guidance supplements SRP AD-6. Public Notification signs will **provide a link to the Park District website with project information and contact information if persons in the area have additional questions or concerns.**	One to three days prior to treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR AD-7 Provide Information on Proposed, Approved, and Completed Treatment Projects. For any vegetation treatment project using the CalVTP PEIR for CEQA compliance, the project proponent will provide the information listed below to the Board of Forestry and Fire Protection (Board) or CAL FIRE during the proposed, approved, and completed stages of the project. The Board or CAL FIRE will make this information available to the public via an online database or other mechanism. Information on proposed projects (PSA in progress): ▶ GIS data that include project location (as a point), or project latitude/longitude; ▶ project size (typically acres); ▶ treatment types and activities; and ▶ contact information for a representative of the project proponent. The project proponent will provide information on the proposed project to the Board or CAL FIRE as early as feasible in the planning phase. The project proponent will provide this information to the Board or CAL FIRE with sufficient lead time to allow those agencies to make the information available to the public at least two weeks prior to project approval. The project proponent may also make information available to the public via other mechanisms (e.g., the proponent's own website). Information on approved projects (PSA complete): ▶ A completed PSA Environmental Checklist; ▶ A completed Mitigation Monitoring and Reporting Program (using Attachment A to the Environmental Checklist); ▶ GIS data that include a polygon(s) of the project area, showing the extent of each treatment type included in the project (ecological restoration, fuel break, WUI fuel reduction) Information on completed projects (following initial treatment): ▶ GIS data that include a polygon(s) of the treated area, showing the extent of each treatment type implemented (ecological restoration, fuel break, WUI fuel reduction) ▶ A post-project implementation report (referred to by CAL FIRE as a Completion Report) that includes ▪ Size of treated area (typically acres); ▪ Treatment types and activities; ▪ Dates of work;	Prior to, during, and following treatment **Information on the proposed project (PSA/ Addendum in progress) was submitted to the Board of Forestry and Fire Protection on September 13, 2022.**	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ A list of the SPRs and mitigation measures that were implemented; ▪ Any explanations regarding implementation if required by SPRs and mitigation measures (e.g., explanation for feasibility determination required by SPR BIO-12; explanation for reduction of a no-disturbance buffer below the general minimum size described in Mitigation Measures BIO-1a and BIO-2b). This SPR applies to all treatment activities and all treatment types, including treatment maintenance.			
SPR AD-8 Request Access for Post-Treatment Assessment. For CAL FIRE projects, during contract development, CAL FIRE will include access to the treated area over a prescribed period (usually up to three years) to assess treatment effectiveness in achieving desired fuel conditions and other CalVTP objectives as well as any necessary maintenance, as a contract term for consideration by the landowner. For public landowners, access to the treated area over a prescribed period will be a requirement of the executed contract. This SPR applies to all treatment activities and all treatment types, including treatment maintenance.	Following treatment	East Bay Regional Park District	East Bay Regional Park District
Aesthetic and Visual Resource Standard Project Requirements			
SPR AES-1 Vegetation Thinning and Edge Feathering: The project proponent will thin and feather adjacent vegetation to break up or screen linear edges of the clearing and mimic forms of natural clearings as reasonable or appropriate for vegetation conditions. In general, thinning and feathering in irregular patches of varying densities, as well as a gradation of tall to short vegetation at the clearing edge, will achieve a natural transitional appearance. The contrast of a distinct clearing edge will be faded into this transitional band. This SPR only applies to mechanical and manual treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AES-2 Avoid Staging within Viewsheds: The project proponent will store all treatment-related materials, including vehicles, vegetation treatment debris, and equipment, outside of the viewshed of public trails, Park, recreation areas, and roadways to the extent feasible. The project proponent will also locate materials staging and storage areas outside of the viewshed of public trails, Park, recreation areas, and roadways to the extent feasible. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AES-3 Provide Vegetation Screening: The project proponent will preserve sufficient vegetation within, at the edge of, or adjacent to treatment areas to screen views from public trails, Park, recreation areas, and roadways as reasonable or appropriate for vegetation conditions. This SPR applies to all treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
Air Quality Standard Project Requirements			
SPR AQ-1 Comply with Air Quality Regulations: The project proponent will comply with the applicable air quality requirements of air districts within whose jurisdiction the project is located. This SPR applies to all treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AQ-2 Submit Smoke Management Plan: The project proponent will submit a smoke management plan for all prescribed burns to the applicable air district, in accordance with 17 CCR Section 80160. Pursuant to this regulation a smoke management plan will not be required for burns less than 10 acres that also will not be conducted near smoke sensitive areas, unless otherwise directed by the air district. Burning will only be conducted in compliance with the burn authorization program of the applicable air district(s) having jurisdiction over the treatment area. Example of a smoke management plan is in Appendix PD-2. This SPR applies only to prescribed burning treatment activities and all treatment types, including treatment maintenance.	Prior to prescribed burn treatment activities	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
SPR AQ-3 Create Burn Plan: The project proponent will create a burn plan using the CAL FIRE burn plan template for all prescribed burns. The burn plan will include a fire behavior model output of First Order Fire Effects Model and BEHAVE or other fire behavior modeling simulation and that is performed by a qualified fire behavior technical specialist that predicts fire behavior, calculates consumption of fuels, tree mortality, predicted emissions, greenhouse gas emissions, and soil heating. The project proponent will minimize soil burn severity from broadcast burning to reduce the potential for runoff and soil erosion. The burn plan will be created with input from a qualified technician or certified State burn boss. This SPR applies only to prescribed burning treatment activities and all treatment types, including treatment maintenance.	Prior to prescribed burn treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR AQ-4 Minimize Dust: To minimize dust during treatment activities, the project proponent will implement the following measures: ▶ Limit the speed of vehicles and equipment traveling on unpaved areas to 15 miles per hour to reduce fugitive dust emissions, in accordance with the California Air Resources Board (CARB) Fugitive Dust protocol. ▶ If road use creates excessive dust, the project proponent will wet appurtenant, unpaved, dirt roads using water trucks or treat roads with a non-toxic chemical dust suppressant (e.g., emulsion polymers, organic material) during dry, dusty conditions. Any dust suppressant product used will be environmentally benign (i.e., non-toxic to plants and will not negatively impact water quality) and its use will not be prohibited by ARB, EPA, or the State Water Resources Control Board (SWRCB). The project proponent will not over-water exposed areas such that the water results in runoff. The type of dust suppression method will be selected by the project proponent based on soil, traffic, site-specific conditions, and air quality regulations. ▶ Remove visible dust, silt, or mud tracked-out on to public paved roadways where sufficient water supplies and access to water is available. The project proponent will remove dust, silt, and mud from vehicles at the conclusion of each workday, or at a minimum of every 24 hours for continuous treatment activities, in accordance with Vehicle Code Section 23113. ▶ Suspend ground-disturbing treatment activities, including land clearing and bulldozer lines, when there is visible dust transport (particulate pollution) outside the treatment boundary, if the particulate emissions may "cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property," per Health and Safety Code Section 41700. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AQ-5 Avoid Naturally Occurring Asbestos: The project proponent will avoid ground-disturbing treatment activities in areas identified as likely to contain naturally occurring asbestos (NOA) per maps and guidance published by the California Geological Survey, unless an Asbestos Dust Control Plan (17 CCR Section 93105) is prepared and approved by the air district(s) with jurisdiction over the treatment area. Any NOA-related guidance provided by the applicable air district will be followed. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
SPR AQ-6: Prescribed Burn Safety Procedures. Prescribed burns planned and managed by non-CAL FIRE crews will follow all safety procedures required of CAL FIRE crew, including the implementation of an approved Incident Action Plan (IAP). The IAP will include the burn dates; burn hours; weather limitations; the specific burn prescription; a communications plan; a medical plan; a traffic plan; and special instructions such as minimizing smoke impacts to specific local roadways. The IAP will also assign responsibilities for coordination with the appropriate air district, such as conducting onsite briefings, posting notifications, weather monitoring during burning, and other	During prescribed burn treatment activities	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
burn related preparations. This SPR applies only to prescribed burning treatment activities and all treatment types, including treatment maintenance.			
Archaeological, Historical, and Tribal Cultural Resources Standard Project Requirements			
SPR CUL-1 Conduct Record Search: An archaeological and historical resource record search will be conducted per the applicable state or local agency procedures. Instead of conducting a new search, the project proponent may use recent record searches containing the treatment area requested by a landowner or other public agency in accordance applicable agency guidance. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment **Record search of project area and 0.25-mile buffer surrounding project area has been conducted; see PSA/Addendum for a summary of results.**	East Bay Regional Park District	East Bay Regional Park District
SPR CUL-2 Contact Geographically Affiliated Native American Tribes: The project proponent will obtain the latest Native American Heritage Commission (NAHC) provided Native Americans Contact List. Using the appropriate Native Americans Contact List, the project proponent will notify the California Native American Tribes in the counties where the treatment activity is located. The notification will contain the following: ▶ A written description of the treatment location and boundaries. ▶ Brief narrative of the treatment objectives. ▶ A description of the activities used (e.g., prescribed burning, mastication) and associated acreages. ▶ A map of the treatment area at a sufficient scale to indicate the spatial extent of activities. ▶ A request for information regarding potential impacts to cultural resources from the proposed treatment. ▶ A detailed description of the depth of excavation, if ground disturbance is expected. In addition, the project proponent will contact the NAHC for a review of their Sacred Lands File. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment **Tribes have been contacted and Sacred Lands File (SLF) query completed; see PSA/Addendum for a summary of consultation and SLF results.**	East Bay Regional Park District	East Bay Regional Park District
SPR-CUL-3 Pre-field Research: The project proponent will conduct research prior to implementing treatments as part of the cultural resource investigation. The purpose of this research is to properly inform survey design, based on the types of resources likely to be encountered within the treatment area, and to be prepared to interpret, record, and evaluate these findings within the context of local history and prehistory. The qualified archaeologist and/or archaeologically-trained resource professional will review records, study maps, read pertinent ethnographic, archaeological, and historical literature specific to the area being studied, and conduct other tasks to maximize the effectiveness of the survey. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
SPR CUL-4 Archaeological Surveys: The project proponent will coordinate with an archaeologically-trained resource professional and/or qualified archaeologist to conduct a site-specific survey of the treatment area. The survey methodology (e.g., pedestrian survey, subsurface investigation) depends on whether the area has a low, moderate, or high sensitivity for resources, which is based on whether the records search, pre-field research, and/or Native American consultation identifies archaeological or historical resources near or within the treatment area. A survey report will be completed for every cultural resource survey completed. The specific requirements will comply with the applicable state or local agency procedures. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment	East Bay Regional Park District	East Bay Regional Park District
SPR CUL-5 Treatment of Archaeological Resources: If cultural resources are identified within a treatment area, and cannot be avoided, a qualified archaeologist will notify the culturally affiliated tribe(s) based on information provided by NAHC and assess whether an archaeological find qualifies as a unique archaeological resource, an historical resource, or in coordination with said tribe(s), as a tribal cultural resource. The project proponent, in consultation with culturally affiliated tribe(s), will develop effective protection measures for important cultural resources located within treatment areas. These measures may include adjusting the treatment location or design to entirely avoid cultural resource locations or changing treatment activities so that damaging effects to cultural resources will not occur. These protection measures will be written in clear, enforceable language, and will be included in the survey report in accordance with applicable state or local agency procedures. This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR CUL-5** The following guidance supplements SRP CUL-5. The qualified archaeologist will be either the Park District's Cultural Services Coordinator (a qualified archaeologist) or a qualified archaeologist acting under the direction of the Park District's Cultural Services Coordinator.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
SPR CUL-6 Treatment of Tribal Cultural Resources: The project proponent, in consultation with the culturally affiliated tribe(s), will develop effective protection measures for important tribal cultural resources located within treatment areas. These measures may include adjusting the treatment location or design to entirely avoid cultural resource locations or changing treatment activities so that damaging effects to cultural resources will not occur. The project proponent will provide the tribe(s) the opportunity to submit comments and participate in consultation to resolve issues of concern. The project proponent will defer implementing the treatment until the tribe approves protection measures, or if agreement cannot be reached after a good-faith effort, the proponent determines that any or all feasible measures have been implemented, where feasible, and the resource is either avoided or protected. This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR CUL-6** The following guidance supplements SRP CUL-6. If tribal cultural resources are identified within a treatment area and determined to be significant by the culturally affiliated tribe(s), the site will be temporarily flagged. Any flagging will be removed after treatment to maintain the confidentiality of the site location. Measures to avoid impacts to an identified tribal cultural resource during treatment may include the following: ▶ Dense vegetation within the site boundaries will be hand-cleared. ▶ Duff will be removed from bedrock mortars and other modified features.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
▶ Heavy equipment will not be used within the site boundary, as delineated by the protective flagging or marking. ▶ Herbicides will not be used within the site boundary or a 50-foot buffer. ▶ If provided by the tribe, a list of plants shall indicate which species and plant-gathering areas where no herbicide use should occur. If there is a need to use herbicides in the plant gathering areas, a tribal monitor shall be invited to make sure that tribal resources are protected.			
SPR CUL-7 Avoid Built Historical Resources: If the records search identifies built historical resources, as defined in Section 15064.5 of the State CEQA Guidelines, the project proponent will avoid these resources. Within a buffer of 100 feet of the built historical resource, there will be no prescribed burning or mechanical treatment activities Buffers less than 100 feet for built historical resources will only be used after consultation with and receipt of written approval from a qualified archaeologist. If the records search does not identify known historical resources in the treatment area, but structures (i.e., buildings, bridges, roadways) over 50 years old that have not been evaluated for historic significance are present in the treatment area, they will similarly be avoided. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
SPR CUL-8 Cultural Resource Training: The project proponent will train all crew members and contractors implementing treatment activities on the protection of sensitive archaeological, historical, or tribal cultural resources. Workers will be trained to halt work if archaeological resources are encountered on a treatment site and the treatment method consists of physical disturbance of land surfaces (e.g., soil disturbance). This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
Biological Resources Standard Project Requirements			
SPR BIO-1: Review and Survey Project-Specific Biological Resources. The project proponent will require a qualified RPF or biologist to conduct a data review and reconnaissance-level survey prior to treatment, no more than one year prior to the submittal of the PSA, and no more than one year between completion of the PSA and implementation of the treatment project. The data reviewed will include the biological resources setting, species and sensitive natural communities tables, and habitat information in this PEIR for the ecoregion(s) where the treatment will occur. It will also include review of the best available, current data for the area, including vegetation mapping data, species distribution/range information, CNDDB, California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California, relevant BIOS queries, and relevant general and regional plans. Reconnaissance-level biological surveys will be general surveys that include visual and auditory inspection for biological resources to help determine the environmental setting of a project site. The qualified surveyor will 1.) identify and document sensitive resources, such as riparian or other sensitive habitats, sensitive natural community, wetlands, or wildlife nursery site or habitat (including bird nests), and 2.) assess the suitability of habitat for special-status plant and animal species. The surveyor will also record any incidental wildlife observations. For each treatment project, habitat assessments will be completed at a time of year that is appropriate for identifying habitat and no more than one year prior to the submittal of the PSA, unless it can be demonstrated in the PSA that habitat assessments older than one year remain valid (e.g., site conditions are unchanged and no treatment activity has occurred since the assessment). If more than one year passes between completion of the PSA and initiation of the treatment project, the project proponent will verify the continued accuracy of the PSA prior to beginning the treatment project by reviewing for any data updates and/or visiting the site to verify conditions. Based on the results of the data review and reconnaissance-level survey, the project proponent, in consultation with a qualified RPF or biologist, will determine which one of the following best characterizes the treatment:	Prior to treatment. **Initial data review and reconnaissance-level survey have been conducted, see PSA/ Addendum for results.**	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
1. **Suitable Habitat Is Present but Adverse Effects Can Be Clearly Avoided**. If, based on the data review and reconnaissance-level survey, the qualified RPF or biologist determines that suitable habitat for sensitive biological resources is present but adverse effects on the suitable habitat can clearly be avoided through one of the following methods, the avoidance mechanism will be implemented prior to initiating treatment and will remain in effect throughout the treatment: a. by physically avoiding the suitable habitat, or b. by conducting treatment outside of the season when a sensitive resource could be present within the suitable habitat or outside the season of sensitivity (e.g., outside of special-status bird nesting season, during dormant season of sensitive annual or geophytic plant species, or outside of maternity and rearing season at wildlife nursery sites). Physical avoidance will include flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway) to delineate the boundary of the avoidance area around the suitable habitat. For physical avoidance, a buffer may be implemented as determined necessary by the qualified RPF or biologist. 2. **Suitable Habitat is Present and Adverse Effects Cannot Be Clearly Avoided**. Further review and surveys will be conducted to determine presence/absence of sensitive biological resources that may be affected, as described in the SPRs below. Further review may include contacting USFWS, NOAA Fisheries, CDFW, CNPS, or local resource agencies as necessary to determine the potential for special-status species or other sensitive biological resources to be affected by the treatment activity. Focused or protocol-level surveys will be conducted as necessary to determine presence/absence. If protocol surveys are conducted, survey procedures will adhere to methodologies approved by resource agencies and the scientific community, such as those that are available on the CDFW webpage at: https://www.wildlife.ca.gov/Conservation/Survey-Protocols. Specific survey requirements are addressed for each resource type in relevant SPRs (e.g., additional survey requirements are presented for special-status plants in SPR BIO-7). This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR BIO-1** <u>Special-status plants</u> ▶ For special-status plants not listed under CESA or ESA, to avoid impacts on the annual and perennial geophyte species identified in Table 4.5-2 of the PSA, non-ground-disturbing treatment activities (i.e., manual treatments) will be implemented only during the dormant season for these species (i.e., when the plant has no aboveground parts), which would generally occur during the winter, if feasible. If the limited operating period for annual and perennial geophyte species (i.e., only non-ground-disturbing treatment activities conducted during the dormant season) is determined to be infeasible, then protocol-level surveys will be required per SPR BIO-7. Note that ground-disturbing treatment activities (i.e., mechanical treatments) may result in impacts on these plant species even when dormant, and will not be conducted without prior implementation of SPR BIO-7. <u>Special-Status Wildlife</u> ▶ To avoid impacts on special-status nesting birds, mechanical treatments, manual treatments, herbicide application, prescribed burning, and prescribed herbivory would not be implemented from February 1 to August 31, if feasible. If conducting some treatments outside of the nesting bird season is determined to be infeasible, then SPR BIO-10 will be implemented. ▶ To avoid impacts on ringtail, a limited operating period for manual treatment, mechanical treatments, and prescribed burning activities from April 15 to June 30 will be implemented, if feasible. If conducting some manual treatments, mechanical treatments,	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
and prescribed burning treatments outside of the ringtail maternity season is determined to be infeasible for certain treatments, then SPR BIO-10 will be implemented. ▶ To avoid impacts on special-status bat maternity colonies, a limited operating period for mechanical treatments, manual treatments, and prescribed burning from April 1 to August 31 will be implemented, if feasible. If it is infeasible to follow the limited operating period, focused or protocol-level surveys will be required per SPR BIO-10. ▶ Because there is no reliable season during which all impacts on Alameda whipsnake, California red-legged frog, western pond turtle, Crotch's bumble bee, western bumble bee, monarch, American badger, mountain lion, or San Francisco dusky-footed woodrat could be avoided and avoidance of all habitat is not feasible due to these species' variable habitat preferences, implementation of SPR BIO-10 would be required before all treatment activities.			
SPR BIO-2: Require Biological Resource Training for Workers. The project proponent will require crew members and contractors to receive training from a qualified RPF or biologist prior to beginning a treatment project. The training will describe the appropriate work practices necessary to effectively implement the biological SPRs and mitigation measures and to comply with the applicable environmental laws and regulations. The training will include the identification, relevant life history information, and avoidance of pertinent special-status species; identification and avoidance of sensitive natural communities and habitats with the potential to occur in the treatment area; impact minimization procedures; and reporting requirements. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during treatment activities to leave the area unharmed and when it is necessary to report encounters to a qualified RPF, biologist, or biological technician. The qualified RPF, biologist, or biological technician will immediately contact CDFW or USFWS, as appropriate, if any wildlife protected by the California Endangered Species Act (CESA) or Federal Endangered Species Act (ESA) is encountered and cannot leave the site on its own (without being handled). This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
Sensitive Natural Communities and Other Sensitive Habitats			
SPR BIO-3: Survey Sensitive Natural Communities and Other Sensitive Habitats. If SPR BIO-1 determines that sensitive natural communities or sensitive habitats may be present and adverse effects cannot be avoided, the project proponent will: ▶ require a qualified RPF or biologist to perform a protocol-level survey following the CDFW "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities" (current version dated March 20, 2018) of the treatment area prior to the start of treatment activities for sensitive natural communities and sensitive habitats. Sensitive natural communities will be identified using the best means possible, including keying them out using the most current edition of *A Manual of California Vegetation* (including updated natural communities data at http://vegetation.cnps.org/), or referring to relevant reports (e.g., reports found on the VegCAMP website). ▶ map and digitally record, using a Global Positioning System (GPS), the limits of any potential sensitive habitat and sensitive natural community identified in the treatment area. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to treatment	East Bay Regional Park District	East Bay Regional Park District
SPR BIO-4: Design Treatment to Avoid Loss or Degradation of Riparian Habitat Function. Project proponents, in consultation with a qualified RPF or qualified biologist, will design treatments in riparian habitats to retain or improve habitat functions by implementing the following within riparian habitats:	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
▶ Retain at least 75 percent of the overstory and 50 percent of the understory canopy of native riparian vegetation within the limits of riparian habitat identified and mapped during surveys conducted pursuant to SPR BIO-3. Native riparian vegetation will be retained in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of treatment activities. ▶ Treatments will be limited to removal of uncharacteristic fuel loads (e.g., removing dead or dying vegetation), trimming/limbing of woody species as necessary to reduce ladder fuels, and select thinning of vegetation to restore densities that are characteristic of healthy stands of the riparian vegetation types characteristic of the region. This includes hand removal (or mechanized removal where topography allows) of dead or dying riparian trees and shrubs, invasive plant removal, selective thinning, and removal of encroaching upland species. ▶ Removal of large, native riparian hardwood trees (e.g., willow, ash, maple, oak, alder, sycamore, cottonwood) will be minimized to the extent feasible and 75 percent of the pretreatment native riparian hardwood tree canopy will be retained. Because tree size varies depending on vegetation type present and site conditions, the tree size retention parameter will be determined on a site-specific basis depending on vegetation type present and setting; however, 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. A scientifically-based, project-specific explanation substantiating the retention size parameter for native riparian hardwood tree removal will be provided in the Biological Resources Discussion of the PSA. Consideration of factors such as site hydrology, erosion potential, suitability of wildlife habitat, presence of sufficient seed trees, light availability, and changes in stream shading may inform the tree size retention requirements. ▶ Removed trees will be felled away from adjacent streams or waterbodies and piled outside of the riparian vegetation zone (unless there is an ecological reason to do otherwise that is approved by applicable regulatory agencies, such as adding large woody material to a stream to enhance fish habitat, e.g., see *Accelerated Wood Recruitment and Timber Operations: Process Guidance from the California Timber Harvest Review Team Agencies and National Marine Fisheries Service*). ▶ Vegetation removal that could reduce stream shading and increase stream temperatures will be avoided. ▶ Ground disturbance within riparian habitats will be limited to the minimum necessary to implement effective treatments. This will consist of the minimum disturbance area necessary to reduce hazardous fuels and return the riparian community to a natural fire regime (i.e., Condition Class 1) considering historic fire return intervals, climate change, and land use constraints. ▶ Only hand application of herbicides approved for use in aquatic environments will be allowed and only during low-flow periods or when seasonal streams are dry. ▶ The project proponent will notify CDFW when required by California Fish and Game Code Section 1602 prior to implementing any treatment activities in riparian habitats. Notification will identify the treatment activities, map the vegetation to be removed, identify the impact avoidance identification methods to be used (e.g., flagging), and appropriate protections for the retention of shaded riverine habitat, including buffers and other applicable measures to prevent erosion into the waterway. ▶ In consideration of spatial variability of riparian vegetation types and condition and consistent with California Forest Practice Rules Section 916.9(v) (February 2019 version), a different set of vegetation retention standards and protection measures from those specified in the above bullets may be implemented on a site-specific basis if the qualified RPF and the project proponent demonstrate through substantial evidence that alternative design measures provide a more effective means of achieving the treatment objectives and would result in effects to the Beneficial Functions of Riparian Zones equal or more favorable than those			

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
expected to result from application of the above measures. Deviation from the above design specifications, different protection measures and design standards will only be approved when the treatment plan incorporates an evaluation of beneficial functions of the riparian habitat and with written concurrence from CDFW. This SPR applies to all treatment activities and treatment types, including treatment maintenance.			
SPR BIO-5: **Avoid Environmental Effects of Type Conversion and Maintain Habitat Function in Chaparral and Coastal Sage Scrub.** The project proponent will design treatment activities to avoid type conversion where native coastal sage scrub and chaparral are present. An ecological definition of type conversion is used in the CalVTP PEIR for assessment of environmental effects: a change from a vegetation type dominated by native shrub species that are characteristic of chaparral and coastal sage scrub vegetation alliances to a vegetation type characterized predominantly by weedy herbaceous cover or annual grasslands. For the PEIR, type conversion is considered in terms of habitat function, which is defined here as the arrangement and capability of habitat features to provide refuge, food source, and reproduction habitat to plants and animals, and thereby contribute to the conservation of biological and genetic diversity and evolutionary processes (de Groot et al. 2002). Some modification of habitat characteristics may occur provided habitat function is maintained (i.e., the location, essential habitat features, and species supported are not substantially changed). During the reconnaissance-level survey required in SPR BIO-1, a qualified RPF or biologist will identify chaparral and coastal sage scrub vegetation to the alliance level and determine the condition class and fire return interval departure of the chaparral and/or coastal sage scrub present in each treatment area. For all treatment types in chaparral and coastal sage scrub, the project proponent, in consultation with a qualified RPF or qualified biologist will: ▶ Develop a treatment design that avoids environmental effects of type conversion in chaparral and coastal sage scrub vegetation alliances, which will include evaluating and determining the appropriate spatial scale at which the proponent would consider type conversion, and substantiating its appropriateness. The project proponent will demonstrate with substantial evidence that the habitat function of chaparral and coastal sage scrub would be at least maintained within the identified spatial scale at which type conversion is evaluated for the specific treatment project. Consideration of factors such as site hydrology, erosion potential, suitability of wildlife habitat, spatial needs of sensitive species, presence of sufficient seed plants and nurse plants, light availability, and edge effects may inform the determination of an appropriate spatial scale. ▶ The treatment design will maintain a minimum percent cover of mature native shrubs within the treatment area to maintain habitat function; the appropriate percent cover will be identified by the project proponent in the development of treatment design and be specific to the vegetation alliances that are present in the identified spatial scale used to evaluate type conversion. Mature native shrubs that are retained will be distributed contiguously or in patches within the stand. If the stand consists of multiple age classes, patches representing a range of middle to old age classes will be retained to maintain and improve heterogeneity, to the extent needed to avoid type conversion. These SPR requirements apply to all treatment activities and all treatment types, including treatment maintenance. Additional measures will be applied to ecological restoration treatment types: ▶ For ecological restoration treatment types, complete removal of the mature shrub layer will not occur in native chaparral and coastal sage scrub vegetation types.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
▶ Ecological restoration treatments will not be implemented in vegetation types that are within their natural fire return interval (i.e., time since last burn is less than the average time listed as the fire return interval range in Table 3.6-1) unless the project proponent demonstrates with substantial evidence that the habitat function of chaparral and coastal sage scrub would be improved. ▶ A minimum of 35 percent relative cover of existing shrubs and associated native vegetation will be retained at existing densities in patches distributed in a mosaic pattern within the treated area or the shrub canopy will be thinned by no more than 20 percent from baseline density (i.e., if baseline shrub canopy density is 60 percent, post treatment shrub canopy density will be no less than 40 percent). A different percent relative cover can be retained if the project proponent demonstrates with substantial evidence that alternative treatment design measures would result in effects on the habitat function of chaparral and coastal sage scrub that are equal or more favorable than those expected to result from application of the above measures. Biological considerations that may inform a deviation from the minimum 35 percent relative cover retention include but are not limited to soil moisture requirements, increased soil temperatures, changes in light/shading, presence of sufficient seed plants and nurse plants, erosion potential, and site hydrology. ▶ If the stand within the treatment area consists of multiple age classes, patches representing a range of middle to old age classes will be retained to maintain and improve heterogeneity. These SPR requirements apply to all treatment activities and only the ecosystem restoration treatment type, including treatment maintenance. A determination of compliance with the SB 1260 prohibition of type conversion in chaparral and coastal sage scrub is a statutory issue separate from CEQA compliance that may involve factors additional to the ecological definition and habitat functions presented in the PEIR, such as geographic context. It is beyond the legal scope of the PEIR to define SB 1260 type conversion and statutory compliance. The project proponent, acting as lead agency for the proposed later treatment project, will be responsible for defining type conversion in the context of the project and making the finding that type conversion would not occur, as required by SB 1260. The project proponent will determine its criteria for defining and avoiding type conversion and, in making its findings, may draw upon information presented in this PEIR.			
SPR BIO-6: Prevent Spread of Plant Pathogens. When working in sensitive natural communities, riparian habitats, or oak woodlands that are at risk from plant pathogens (e.g., Ione chaparral, blue oak woodland), the project proponent will implement the following best management practices to prevent the spread of *Phytophthora* and other plant pathogens (e.g., pitch canker (*Fusarium*), goldspotted oak borer, shot hole borer, bark beetle): ▶ clean and sanitize vehicles, equipment, tools, footwear, and clothes before arriving at a treatment site and when leaving a contaminated site, or a site in a county where contamination is a risk; ▶ include training on *Phytophthora* diseases and other plant pathogens in the worker awareness training; ▶ minimize soil disturbance as much as possible by limiting the number of vehicles, avoiding off-road travel as much as possible, and limiting use of mechanized equipment; ▶ minimize movement of soil and plant material within the site, especially between areas with high and low risk of contamination; ▶ clean soil and debris from equipment and sanitize hand tools, buckets, gloves, and footwear when moving from high risk to low risk areas or between widely separated portions of a treatment area; and ▶ follow the procedures listed in Guidance for plant pathogen prevention when working at contaminated restoration sites or with rare plants and sensitive habitat (Working Group for *Phytophthoras* in Native Habitats 2016). This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
SPR BIO-7: Survey for Special-Status Plants. If SPR BIO-1 determines that suitable habitat for special-status plant species is present and cannot be avoided, the project proponent will require a qualified RPF or botanist to conduct protocol-level surveys for special-status plant species with the potential to be affected by a treatment prior to initiation of the treatment. The survey will follow the methods in the current version of CDFW's "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities." Surveys to determine the presence or absence of special-status plant species will be conducted in suitable habitat that could be affected by the treatment and timed to coincide with the blooming or other appropriate phenological period of the target species (as determined by a qualified RPF or botanist), or all species in the same genus as the target species will be assumed to be special-status. If potentially occurring special-status plants are listed under CESA or ESA, protocol-level surveys to determine presence/absence of the listed species will be conducted in all circumstances, unless determined otherwise by CDFW or USFWS. For other special-status plants not listed under CESA or ESA, as defined in Section 3.6.1 of this PEIR, surveys will not be required under the following circumstances: ▶ If protocol-level surveys, consisting of at least two survey visits (e.g., early blooming season and later blooming season) during a normal weather year, have been completed in the 5 years before implementation of the treatment project and no special-status plants were found, and no treatment activity has occurred following the protocol-level survey, treatment may proceed without additional plant surveys. ▶ If the target special-status plant species is an herbaceous annual, stump-sprouting, or geophyte species, the treatment may be carried out during the dormant season for that species or when the species has completed its annual lifecycle without conducting presence/absence surveys provided the treatment will not alter habitat or destroy seeds, stumps, or roots, rhizomes, bulbs and other underground parts in a way that would make it unsuitable for the target species to reestablish following treatment. This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR BIO-7** ▶ For special-status plants not listed under ESA or CESA, if the limited operating period for annual and perennial geophyte species (i.e., non-ground-disturbing treatment activities conducted during the dormant season) is determined to be infeasible, then protocol-level surveys for these species will be conducted prior to implementation of treatments. ▶ Protocol-level surveys will be conducted for special-status plants listed under ESA or CESA and perennial non-listed species prior to implementation of treatments.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
Invasive Plants and Wildlife			
SPR BIO-9: Prevent Spread of Invasive Plants, Noxious Weeds, and Invasive Wildlife. The project proponent will take the following actions to prevent the spread of invasive plants, noxious weeds, and invasive wildlife (e.g., New Zealand mudsnail): ▶ clean clothing, footwear, and equipment used during treatments of soil, seeds, vegetative matter, other debris or seed-bearing material, or water (e.g., rivers, streams, creeks, lakes) before entering the treatment area or when leaving an area with infestations of invasive plants, noxious weeds, or invasive wildlife; ▶ for all heavy equipment and vehicles traveling off road, pressure wash, if feasible, or otherwise appropriately decontaminate equipment at a designated weed-cleaning station prior to entering the treatment area from an area with infestations of invasive	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
plants, noxious weeds, or invasive wildlife. Anti-fungal wash agents will be specified if the equipment has been exposed to any pathogen that could affect native species; ▶ inspect all heavy equipment, vehicles, tools, or other treatment-related materials for sand, mud, or other signs that weed seeds or propagules could be present prior to use in the treatment area. If the equipment is not clean, the qualified RPF or biological technician will deny entry to the work areas; ▶ stage equipment in areas free of invasive plant infestations unless there are no uninfested areas present within a reasonable proximity to the treatment area; ▶ identify significant infestations of invasive plant species (i.e., those rated as invasive by Cal-IPC or designated as noxious weeds by California Department of Food and Agriculture) during reconnaissance-level surveys and target them for removal during treatment activities. Treatment methods will be selected based on the invasive species present and may include herbicide application, manual or mechanical treatments, prescribed burning, and/or herbivory, and will be designed to maximize success in killing or removing the invasive plants and preventing reestablishment based on the life history characteristics of the invasive plant species present. Treatments will be focused on removing invasive plant species that cause ecological harm to native vegetation types, especially those that can alter fire cycles; ▶ treat invasive plant biomass onsite to eliminate seeds and propagules and prevent reestablishment or dispose of invasive plant biomass offsite at an appropriate waste collection facility (if not kept on site); transport invasive plant materials in a closed container or bag to prevent the spread of propagules during transport; and ▶ implement Fire and Fuel Management BMPs outlined in the "Preventing the Spread of Invasive Plants: Best Management Practices for Land Mangers" (Cal-IPC 2012, or current version). This SPR applies to all treatment activities and treatment types, including treatment maintenance.			
Wildlife			
SPR BIO-10: Survey for Special-Status Wildlife and Nursery Sites. If SPR BIO-1 determines that suitable habitat for special-status wildlife species or nurseries of any wildlife species is present and cannot be avoided, the project proponent will require a qualified RPF or biologist to conduct focused or protocol-level surveys for special-status wildlife species or nursery sites (e.g., bat maternity roosts, deer fawning areas, heron or egret rookeries, monarch overwintering sites) with potential to be directly or indirectly affected by a treatment activity. The survey area will be determined by a qualified RPF or biologist based on the species and habitats and any recommended buffer distances in agency protocols. The qualified RPF or biologist will determine if following an established protocol is required, and the project proponent may consult with CDFW and/or USFWS for technical information regarding appropriate survey protocols. Unless otherwise specified in a protocol, the survey will be conducted no more than 14 days prior to the beginning of treatment activities. Focused or protocol surveys for a special-status species with potential to occur in the treatment area may not be required if presence of the species is assumed. This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR BIO-10** ▶ Implementation of Mitigation Measure BIO-2a would be required before all treatment activities because there is no reliable season during which all impacts on Alameda whipsnake could be avoided and avoidance of habitat suitable for the species is not feasible	No more than 14 days prior to treatment, unless otherwise specified. Surveys would occur immediately prior to implementation for Alameda whipsnake and western pond turtle.	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
due to the species' variable habitat preferences. Alameda whipsnake will generally be assumed present in all scrub communities, adjacent grasslands, adjacent woodlands, and open woodland habitat, as determined by a qualified biologist or RPF. ▶ A qualified RPF or qualified biologist will conduct protocol-level surveys for California red-legged frog pursuant to the *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog* (USFWS 2005) within habitat potentially suitable for the species, or presence of the species would be assumed and Mitigation Measure BIO-2a would be implemented. If protocol-level surveys are conducted and California red-legged frogs are not detected within the treatment areas, then no mitigation for the species would be required and the buffers would not be required. If California red-legged frogs are detected or assumed, Mitigation Measure BIO-2a would be implemented. ▶ Because no-disturbance buffers for western pond turtle are not feasible, to avoid impacts on western pond turtle, focused visual encounter surveys for the species and for potentially suitable burrows will be conducted within habitat areas suitable for the species prior to treatment activities within approximately 1,500 feet of aquatic habitat (i.e., streams, ponds). If burrows potentially suitable for western pond turtle are detected, the RPF or qualified biologist will inspect the burrow to determine whether it is occupied (e.g., using a burrow scope). If western pond turtles are identified during focused surveys, Mitigation Measure BIO-2b for this species will be implemented. ▶ If the limited operating period for nesting birds is determined to be infeasible, to avoid impacts on special-status birds (i.e., American peregrine falcon, bald eagle, burrowing owl, golden eagle, grasshopper sparrow, loggerhead shrike, tricolored blackbird, Vaux's swift, white-tailed kite, willow flycatcher, yellow warbler, and yellow-breasted chat), focused surveys (i.e., nest searches) for nests of these species will be conducted prior to implementing treatment activities during the nesting bird season (February 1–August 31). If active special-status bird nests are observed during focused surveys, then mitigation measures BIO-2a (for American peregrine falcon, bald eagle, golden eagle, white-tailed kite, willow flycatcher) and BIO-2b (for burrowing owl, grasshopper sparrow, loggerhead shrike, tricolored blackbird, Vaux's swift, yellow warbler, and yellow-breasted chat) will be implemented. ▶ Because limited operating periods for special-status bumble bees are not feasible to avoid impacts on bumble bees, a focused survey for the species will be conducted prior to implementing treatments in habitat suitable for the species, or potential presence of the species will be assumed in habitat suitable for the species. The survey protocol for rusty-patched bumble bee (USFWS 2018) may be adapted for the special-status bumble bees in the project area. If special-status bumble bees are detected during focused surveys or assumed to be present in the project area, Mitigation Measure BIO-2g would be implemented. ▶ Because monarchs may use habitat in the project area for large portions of the year, a limited operating period or no-disturbance buffer would not be feasible to avoid impacts on monarchs. Focused noninvasive visual surveys for butterflies will be conducted during the flight season or presence would be assumed. If the presence of monarch butterflies is assumed or the species is detected during focused surveys, Mitigation Measure BIO-2e will be implemented. ▶ Because no-disturbance buffers and limited operating periods for American badgers are not feasible to avoid impacts on American badgers, a focused survey for the species and for potential dens will be conducted prior to implementing treatments in habitat suitable for the species (i.e., grassland, open woodland). If American badger dens are detected during focused surveys, Mitigation Measure BIO-2b will be implemented. ▶ Because no-disturbance buffers and limited operating periods for mountain lion are not feasible, to avoid impacts on mountain lion, the following measures will be conducted by a qualified RPF or biologist prior to implementing noise-generating manual	Surveys would occur no more than 14 days prior to treatment for nesting birds and roosting bats.		

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
treatments (e.g., using chainsaws), mechanical treatments, prescribed burning, and prescribed herbivory treatments using herding dogs within nursery habitat suitable for mountain lions: ▪ **Detailed Habitat Analysis**. Nursery habitat suitable for the species will be determined through desktop analysis (e.g., land cover, slope, distance from development), coordination with local experts studying or tracking the species (if available), and field surveys. Potential mountain lion nursery dens will include caves, large natural cavities within rocky areas, or thickets deemed appropriate for use by mountain lions based on size and other characteristics (e.g., proximity to human development, surrounding habitat). The qualified RPF or biologist will survey for signs of mountain lion (e.g., tracks, scat, prey items) in the vicinity of potential nursery habitat to help determine whether an area may contain a mountain lion nursery. ▪ **Nursery Surveys**. If signs of a mountain lion nursery are found during surveys or monitoring, further investigation will be required to determine if a mountain lion nursery is present. No treatment will occur in the area while further investigation is occurring. Survey methods will include the use of trail cameras, track plates, hair snares, and/or other noninvasive methods. Surveys using these noninvasive methods will be conducted for three days and three nights to determine whether a nursery may be present (e.g., lactating mother or kittens detected by camera, growls heard). As an alternative to surveys, if available, the project proponent will coordinate with local experts tracking the species to identify a likely nursery (e.g., a female mountain lion in one location for multiple days) or a confirmed nursery in the area. If mountain lion nursery dens are detected/known or assumed to be present during focused surveys, Mitigation Measure BIO-2a will be implemented. ▸ If the limited operating period for ringtail is determined to be infeasible, to avoid impacts on the species, focused surveys for ringtail, including non-invasive survey methods (e.g., trail cameras, track plates, hair snares), will be conducted prior to implementing manual treatments, mechanical treatments, and prescribed burning during the ringtail maternity season (April 15–June 30), or the potential presence of ringtail would be assumed. If presence of ringtail is assumed or an active den is identified during focused surveys by a qualified RPF or biologist, Mitigation Measure BIO-2a will be implemented. ▸ If the limited operating period for special-status bats is determined to be infeasible, to avoid impacts on special-status bats (i.e., pallid bat, Townsend's big-eared bat, western mastiff bat, western red bat), focused surveys for maternity roosts of these species will be conducted prior to implementing manual, mechanical, and prescribed burning treatment activities during the bat maternity season (April 1–August 31). If special-status bat roosts are identified during focused surveys, Mitigation Measure BIO-2b for special-status bats will be implemented. ▸ Because no-disturbance buffers and limited operating periods for San Francisco dusky-footed woodrat are not feasible, to avoid impacts on San Francisco dusky-footed woodrat, a focused survey for the species and for potential nests will be conducted prior to implementing treatments all work areas. If San Francisco dusky-footed woodrat nests are detected during focused surveys, Mitigation Measure BIO-2b will be implemented.			
SPR BIO-11. Install Wildlife-Friendly Fencing (Prescribed Herbivory). If temporary fencing is required for prescribed herbivory treatment, a wildlife-friendly fencing design will be used. The project proponent will require a qualified RPF or biologist to review and approve the design before installation to minimize the risk of wildlife entanglement. The fencing design will meet the following standards: ▸ Minimize the chance of wildlife entanglement by avoiding barbed wire, loose or broken wires, or any material that could impale or snag a leaping animal; and, if feasible, keeping electric netting-type fencing electrified at all times or laid down while not in use.	During treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
▶ Charge temporary electric fencing with intermittent pulse energizers; continuous output fence chargers will not be permitted. ▶ Allow wildlife to jump over easily without injury by installing fencing that can flex as animals pass over it and installing the top wire low enough (no more than approximately 40 inches high on flat ground) to allow adult ungulates to jump over it. The determination of appropriate fence height will consider slope, as steep slopes are more difficult for wildlife to pass. ▶ Be highly visible to birds and mammals by using high-visibility tape or wire, flagging, or other markers. This SPR applies only to prescribed herbivory and all treatment types, including treatment maintenance.			
SPR BIO-12. Protect Common Nesting Birds, Including Raptors. The project proponent will schedule treatment activities to avoid the active nesting season of common native bird species, including raptors, that could be present within or adjacent to the treatment site, if feasible. Common native birds are species not otherwise treated as special status in the CalVTP PEIR. The active nesting season will be defined by the qualified RPF or biologist. If active nesting season avoidance is not feasible, a qualified RPF or biologist will conduct a survey for common nesting birds, including raptors. Existing records (e.g., CNDDB, eBird database, State Wildlife Action Plan) should be reviewed in advance of the survey to identity the common nesting birds, including raptors, that are known to occur in the vicinity of the treatment site. The survey area will encompass reasonably accessible areas of the treatment site and the immediately surrounding vicinity viewable from the treatment site. The survey area will be determined by a qualified RPF or biologist, based on the potential species in the area, location of suitable nesting habitat, and type of treatment. For vegetation removal or project activities that would occur during the nesting season, the survey will be conducted at a time that balances the effectiveness of detecting nests and the reasonable consideration of potential avoidance strategies. Typically, this timeframe would be up to 3 weeks before treatment. The survey will occur in a single survey period of sufficient duration to reasonably detect nesting birds, including raptors, typically one day for most treatment projects (depending on the size, configuration, and vegetation density in the treatment site), and conducted during the active time of day for target species, typically close to dawn and/or dusk. The survey may be conducted concurrently with other biological surveys, if they are required by other SPRs. Survey methods will be tailored by the qualified RPF or biologist to site and habitat conditions, typically involving walking throughout the survey area, visually searching for nests and birds exhibiting behavior that is typical of breeding (e.g., delivering food). If an active nest is observed (i.e., presence of eggs and/or chicks) or determined to likely be present based on nesting bird behavior, the project proponent will implement a feasible strategy to avoid disturbance of active nests, which may include, but is not limited to, one or more of the following: ▶ **Establish Buffer.** The project proponent will establish a temporary, species-appropriate buffer around the nest sufficient to reasonably expect that breeding would not be disrupted. Treatment activities will be implemented outside of the buffer. The buffer location will be determined by a qualified RPF or biologist. Factors to be considered for determining buffer location will include: presence of natural buffers provided by vegetation or topography, nest height above ground, baseline levels of noise and human activity, species sensitivity, and expected treatment activities. Nests of common birds within the buffer need not be monitored during treatment. However, buffers will be maintained until young fledge or the nest becomes inactive, as determined by the qualified RPF, biologist, or biological technician. ▶ **Modify Treatment.** The project proponent will modify the treatment in the vicinity of an active nest to avoid disturbance of active nests (e.g., by implementing manual treatment methods, rather than mechanical treatment methods). Treatment modifications will be determined by the project proponent in coordination with the qualified RPF or biologist.	Conduct a survey for common nesting birds (if needed) at a time that balances the effectiveness of detecting nests and the reasonable consideration of potential avoidance strategies no more than 14 days prior to treatment. If an active nest is observed, implement avoidance strategies prior to and during treatment.	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
▶ **Defer Treatment.** The project proponent will defer the timing of treatment in the portion(s) of the treatment site that could disturb the active nest. If this avoidance strategy is implemented, treatment activity will not commence until young fledge or the nest becomes inactive, as determined by the qualified RPF, biologist, or biological technician. Feasible actions will be taken by the project proponent to avoid loss of common native bird nests. The feasibility of implementing the avoidance strategies will be determined by the project proponent based on whether implementation of this SPR will preclude completing the treatment project within the reasonable period of time necessary to meet CalVTP program objectives, including, but not limited to, protection of vulnerable communities. Considerations may include limitations on the presence of environmental and atmospheric conditions necessary to execute treatment prescriptions (e.g., the limited seasonal windows during which prescribed burning can occur when vegetation moisture, weather, wind, and other physical conditions are suitable). If it is infeasible to avoid loss of common bird nests (not including raptor nests), the project proponent will document the reasons implementation of the avoidance strategies is infeasible in the PSA. After completion of the PSA and prior to or during treatment implementation, if there is any change in the feasibility of avoidance strategies from those explained in the PSA, this will be documented in the post-project implementation report (referred to by CAL FIRE as a Completion Report). The following avoidance strategies may also be considered together with or in lieu of other actions for implementation by a project proponent to avoid disturbance to raptor nests: ▶ **Monitor Active Raptor Nest During Treatment**. A qualified RPF, biologist, or biological technician will monitor an active raptor nest during treatment activities to identify signs of agitation, nest defense, or other behaviors that signal disturbance of the active nest is likely (e.g., standing up from a brooding position, flying off the nest). If breeding raptors are showing signs of nest disturbance, one of the other avoidance strategies (establish buffer, modify treatment or defer treatment) will be implemented or a pause in the treatment activity will occur until the disturbance behavior ceases. ▶ **Retention of Raptor Nest Trees**. Trees with visible raptor nests, whether occupied or not, will be retained. This SPR applies to all treatment activities and treatment types, including treatment maintenance.			
Geology, Soils, Paleontology, and Mineral Resource Standard Project Requirements			
SPR GEO-1 Suspend Disturbance during Heavy Precipitation: The project proponent will suspend mechanical, prescribed herbivory, and herbicide treatments if the National Weather Service forecast is a "chance" (30 percent or more) of rain within the next 24 hours. Activities that cause mechanical soil disturbance may resume when precipitation stops and soils are no longer saturated (i.e., when soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur). Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials. This SPR applies only to mechanical, prescribed herbivory, and herbicide treatment activities and all treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR GEO-1** The following guidance satisfies and replaces the requirements of SPR GEO-1. To prevent herbicides from being mobilized and soil from being compacted which increases runoff and erosion risk, the project proponent will suspend mechanical, prescribed herbivory, and herbicide treatments if: (1) it is raining, (2) soils are saturated, and/or (3) soils are wet enough to mobilize herbicides or be compacted by	During treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
mechanical or prescribed herbivory activities. The project proponent will be prepared to completely suspend mechanical and herbicide treatment activities prior to the initiation of the rain event. Activities that cause mechanical soil disturbance may resume when precipitation stops and soils are no longer very wet or saturated (i.e., when soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur). Indicators of very wet or saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, (5) inadequate traction without blading wet soil or surfacing materials, or (6) tire track imprints or hoof marks in the soil. This SPR applies only to mechanical and herbicide treatment activities and all treatment types, including treatment maintenance.			
SPR GEO-2 Limit High Ground Pressure Vehicles: The project proponent will limit heavy equipment that could cause soil disturbance or compaction to be driven through treatment areas when soils are wet and saturated to avoid compaction and/or damage to soil structure. Saturated soil means that soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur. If use of heavy equipment is required in saturated areas, other measures such as operating on organic debris, using low ground pressure vehicles, or operating on frozen soils/snow covered soils will be implemented to minimize soil compaction. Existing compacted road surfaces are exempted as they are already compacted from use. This SPR applies only to mechanical treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR GEO-3 Stabilize Disturbed Soil Areas: The project proponent will stabilize soil disturbed during mechanical, prescribed herbivory treatments, and prescribed burns that result in exposure of bare soil over 50 percent or more of the treatment area with mulch or equivalent immediately after treatment activities, to the maximum extent practicable, to minimize the potential for substantial sediment discharge. If mechanical, prescribed herbivory, or prescribed burn treatment activities could result in substantial sediment discharge from soil disturbed by machinery, animal hooves, or being bare, organic material from mastication or mulch will be incorporated onto at least 75 percent of the disturbed soil surface where the soil erosion hazard is moderate or high, and 50 percent of the disturbed soil surface where soil erosion hazard is low to help prevent erosion. Where slash mulch is used, it will be packed into the ground surface with heavy equipment so that it is sufficiently in contact with the soil surface. This SPR only applies to mechanical, prescribed herbivory, and prescribed burns that result in exposure of bare soil over 50 percent of the project area treatment activities and all treatment types, including treatment maintenance.	During mechanical and prescribed burn treatment activities that result in exposure of bare soil over 50 percent or more of the treatment area	East Bay Regional Park District	East Bay Regional Park District
SPR GEO-4 Erosion Monitoring: The project proponent will inspect treatment areas for the proper implementation of erosion control SPRs and mitigations prior to the rainy season. If erosion control measures are not properly implemented, they will be remediated prior to the first rainfall event per SPR GEO-3 and GEO-8. Additionally, the project proponent will inspect for evidence of erosion after the first large storm or rainfall event (i.e., ≥ 1.5 inches in 24 hours) as soon as is feasible after the event. Any area of erosion that will result in substantial sediment discharge will be remediated within 48 hours per the methods stated in SPRs GEO-3 and GEO-8. This SPR applies only to mechanical, prescribed herbivory, and prescribed burning treatment activities and all treatment types, including treatment maintenance.	Prior to and during treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR GEO-5 Drain Stormwater via Water Breaks: The project proponent will drain compacted and/or bare linear treatment areas capable of generating storm runoff via water breaks using the spacing and erosion control guidelines contained in Sections 914.6, 934.6, and 954.6(c) of the California Forest Practice Rules (February 2019 version). Where waterbreaks cannot effectively disperse surface runoff,	During mechanical, manual, and	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
including where waterbreaks cause surface run-off to be concentrated on downslopes, other erosion controls will be installed as needed to maintain site productivity by minimizing soil loss. This SPR applies only to mechanical, manual, and prescribed burn treatment activities and all treatment types, including treatment maintenance.	prescribed burn treatment activities		
SPR GEO-6 Minimize Burn Pile Size: The project proponent will not create burn piles that exceed 20 feet in length, width, or diameter, except when on landings, road surfaces, or on contour to minimize the spatial extent of soil damage. In addition, burn piles will not occupy more than 15 percent of the total treatment area (Busse et al. 2014). The project proponent will not locate burn piles in a Watercourse and Lake Protection Zone as defined in SPR HYD-4. This SPR applies to mechanical, manual, and prescribed burning treatment activities and all treatment types, including treatment maintenance.	During mechanical, manual, and prescribed burn treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR GEO-7 Minimize Erosion: To minimize erosion, the project proponent will: (1) Prohibit use of heavy equipment where any of the following conditions are present: (i) Slopes steeper than 65 percent. (ii) Slopes steeper than 50 percent where the erosion hazard rating is high or extreme. (iii) Slopes steeper than 50 percent that lead without flattening to sufficiently dissipate water flow and trap sediment before it reaches a watercourse or lake. (2) On slopes between 50 percent and 65 percent where the erosion hazard rating is moderate, and all slope percentages are for average slope steepness based on sample areas that are 20 acres, or less, heavy equipment will be limited to: (i) Existing tractor roads that do not require reconstruction, or (ii) New tractor roads flagged by the project proponent prior to the treatment activity. (3) Prescribed herbivory treatments will not be used in areas with over 50 percent slope. This SPR applies to all treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR GEO-8 Steep Slopes: The project proponent will require a Registered Professional Forester (RPF) or licensed geologist to evaluate treatment areas with slopes greater than 50 percent for unstable areas (areas with potential for landslide) and unstable soils (soil with moderate to high erosion hazard). If unstable areas or soils are identified within the treatment area, are unavoidable, and will be potentially directly or indirectly affected by the treatment, a licensed geologist (P.G. or C.E.G.) will determine the potential for landslide, erosion, of other issue related to unstable soils and identity measures (e.g., those in SPR GEO-7) that will be implemented by the project proponent such that substantial erosion or loss of topsoil would not occur. This SPR applies only to mechanical treatment activities and WUI fuel reduction, non-shaded fuel breaks, and ecological restoration treatment types, including treatment maintenance.	Prior to and during treatment on slopes greater than 50 percent	East Bay Regional Park District	East Bay Regional Park District
Hazardous Material and Public Health and Safety Standard Project Requirements			
SPR HAZ-1 Maintain All Equipment: The project proponent will maintain all diesel- and gasoline-powered equipment per manufacturer's specifications, and in compliance with all state and federal emissions requirements. Maintenance records will be available for verification. Prior to the start of treatment activities, the project proponent will inspect all equipment for leaks and inspect everyday thereafter until	Prior to and during treatment activities	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
equipment is removed from the site. Any equipment found leaking will be promptly removed. This SPR applies to all treatment activities and treatment types, including treatment maintenance.			
SPR HAZ-2 Require Spark Arrestors: The project proponent will require mechanized hand tools to have federal- or state-approved spark arrestors. This SPR applies only to manual treatment activities and all treatment types, including treatment maintenance.	During manual treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR HAZ-3 Require Fire Extinguishers: The project proponent will require tree cutting crews to carry one fire extinguisher per chainsaw. Each vehicle would be equipped with one long-handled shovel and one axe or Pulaski consistent with PRC Section 4428. This SPR applies only to manual treatment activities and all treatment types, including treatment maintenance.	During manual treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR HAZ-4 Prohibit Smoking in Vegetated Areas: The project proponent will require that smoking is only permitted in designated smoking areas barren or cleared to mineral soil at least 3 feet in diameter (PRC Section 4423.4). This SPR applies to all treatment activities and treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR HAZ-5 Spill Prevention and Response Plan: The project proponent or licensed Pest Control Advisor (PCA) will prepare a Spill Prevention and Response Plan (SPRP) prior to beginning any herbicide treatment activities to provide protection to onsite workers, the public, and the environment from accidental leaks or spills of herbicides, adjuvants, or other potential contaminants. The SPRP will include (but not be limited to): ▶ a map that delineates staging areas, and storage, loading, and mixing areas for herbicides; ▶ a list of items required in an onsite spill kit that will be maintained throughout the life of the activity; ▶ procedures for the proper storage, use, and disposal of any herbicides, adjuvants, or other chemicals used in vegetation treatment. This SPR applies only to herbicide treatment activities and all treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR HAZ-5** The following guidance supplements SRP HAZ-5. The SPRP will include instructions as to how to determine appropriate staging, storage, loading, and mixing areas for herbicides. A site-specific, suitable location for each treatment area will be determined according to the SPRP instructions after the SPRP is prepared but prior to herbicide treatment.	Prepare SPRP prior to beginning any herbicide treatment activities; implement measures during herbicide treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR HAZ-6 Comply with Herbicide Application Regulations: The project proponent will coordinate pesticide use with the applicable County Agricultural Commissioner(s), and all required licenses and permits will be obtained prior to herbicide application. The project proponent will prepare all herbicide applications to do the following: ▶ Be implemented consistent with recommendations prepared annually by a licensed PCA. ▶ Comply with all appropriate laws and regulations pertaining to the use of pesticides and safety standards for employees and the public, as governed by the EPA, DPR, and applicable local jurisdictions. ▶ Adhere to label directions for application rates and methods, storage, transportation, mixing, container disposal, and weather limitations to application such as wind speed, humidity, temperature, and precipitation. ▶ Be applied by an applicator appropriately licensed by the State. This SPR applies only to herbicide treatment activities and all treatment types, including treatment maintenance.	Prior to herbicide treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
SPR HAZ-7 Triple Rinse Herbicide Containers: The project proponent will triple rinse all herbicide and adjuvant containers with clean water at an approved site, and dispose of rinsate by placing it in the batch tank for application per 3 CCR Section 6684. The project proponent will puncture used containers on the top and bottom to render them unusable, unless said containers are part of a manufacturer's container recycling program, in which case the manufacturer's instructions will be followed. Disposal of non-recyclable containers will be at legal dumpsites. Equipment will not be cleaned, and personnel will not be washed in a manner that would allow contaminated water to directly enter any body of water within the treatment area or adjacent watersheds. Disposal of all herbicides will follow label requirements and waste disposal regulations. This SPR applies only to herbicide treatment activities and all treatment types, including treatment maintenance.	During herbicide treatment	East Bay Regional Park District	East Bay Regional Park District
SPR HAZ-8 Minimize Herbicide Drift to Public Areas: The project proponent will employ the following herbicide application parameters during herbicide application to minimize drift into public areas: ▶ application will cease when weather parameters exceed label specifications or when sustained winds at the site of application exceeds 7 miles per hour (whichever is more conservative); ▶ spray nozzles will be configured to produce the largest appropriate droplet size to minimize drift; ▶ low nozzle pressures (30-70 pounds per square inch) will be utilized to minimize drift; and ▶ spray nozzles will be kept within 24 inches of vegetation during spraying. This SPR applies only to herbicide treatment activities and all treatment types, including treatment maintenance.	During herbicide treatment	East Bay Regional Park District	East Bay Regional Park District
SPR HAZ-9 Notification of Herbicide Use in the Vicinity of Public Areas: For herbicide applications occurring within or adjacent to public recreation areas, residential areas, schools, or any other public areas within 500 feet, the project proponent will post signs at each end of herbicide treatment areas and any intersecting trails notifying the public of the use of herbicides. The signs will include the signal word (i.e., Danger, Warning or Caution), product name, and manufacturer; active ingredient; EPA registration number; target pest; treatment location; date and time of application; restricted entry interval, if applicable per the label requirements; date which notification sign may be removed; and a contact person with a telephone number. Signs will be posted prior to the start of treatment and notification will remain in place for at least 72 hours after treatment ceases. This SPR applies only to herbicide treatment activities and all treatment types, including treatment maintenance.	During herbicide treatment activities occurring within or adjacent to public recreation areas, residential areas, schools, or any other public areas within 500 feet	East Bay Regional Park District	East Bay Regional Park District
Hydrology and Water Quality Standard Project Requirements			
SPR HYD-1 Comply with Water Quality Regulations: Project proponents must also conduct proposed vegetation treatments in conformance with appropriate RWQCB timber, vegetation and land disturbance related Waste Discharge Requirements (WDRs) and/or related Conditional Waivers of Waste Discharge Requirements (Waivers), and appropriate Basin Plan Prohibitions. Where these regulatory requirements differ, the most restrictive will apply. If applicable, this includes compliance with the conditions of general waste discharge requirements (WDR) and waste discharge requirement waivers for timber or silviculture activities where these waivers are designed to apply	During treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
to non-commercial fuel reduction and forest health projects. In general, WDR and Waivers of waste discharge requirements for fuel reduction and forest health activities require that wastes, including but not limited to petroleum products, soil, silt, sand, clay, rock, felled trees, slash, sawdust, bark, ash, and pesticides must not be discharged to surface waters or placed where it may be carried into surface waters; and that Water Board staff must be allowed reasonable access to the property in order to determine compliance with the waiver conditions. The specifications for each WDR and Waiver vary by region. Regions 2 (San Francisco Bay), 4 (Los Angeles), 8 (Santa Ana), and 7 (Colorado River) are highly urban or minimally forested and do not offer WDRs or Waivers for fuel reduction or vegetation management activities. The current applicable WDRs and Waivers for timber and vegetation management activities are included in Appendix HYD-1. This SPR applies to all treatment activities and treatment types, including treatment maintenance. **Project-Specific Guidance to Implement SPR HYD-1** Vegetation treatment activities may result in discharges to waters of the state; therefore; compliance with Water Code sections 13260(a)(1) and 13264 are required. The project proponent will use the State Water Board's Vegetation Treatment General Order, which provides a mechanism for Water Code compliance for projects that prepare a CalVTP PSA or PSA/Addendum. The project will be automatically enrolled (through implementation of SPR AD-7) in the State Water Board's Vegetation Treatment General Order. The project's automatic enrollment satisfies the requirements of SPR HYD-1.			
SPR HYD-2 Avoid Construction of New Roads: The project proponent will not construct or reconstruct (i.e., cutting or filling involving less than 50 cubic yards/0.25 linear road miles) any new roads (including temporary roads). This SPR applies to all treatment activities and treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR HYD-3 Water Quality Protections for Prescribed Herbivory: The project proponent will include the following water quality protections for all prescribed herbivory treatments: ▶ Environmentally sensitive areas such as waterbodies, wetlands, or riparian areas will be identified in the treatment prescription and excluded from prescribed herbivory project areas using temporary fencing or active herding. A buffer of approximately 50 feet will be maintained between sensitive and actively grazed areas. ▶ Water will be provided for grazing animals in the form of an on-site stock pond or a portable water source located outside of environmentally sensitive areas. ▶ Treatment prescriptions will be designed to protect soil stability. Grazing animals will be herded out of an area if accelerated soil erosion is observed. This SPR applies to prescribed herbivory treatment activities and all treatment types, including treatment maintenance.	Prior to and during prescribed herbivory treatments	East Bay Regional Park District	East Bay Regional Park District
SPR HYD-4 Identify and Protect Watercourse and Lake Protection Zones: The project proponent will establish Watercourse and Lake Protection Zones (WLPZs) on either side of watercourses as defined in the table below, which is based on 14 CCR Section 916 .5 of the California Forest Practice Rules (February 2019 version). WLPZ's are classified based on the uses of the stream and the presence of aquatic life. Wider WLPZs are required for steep slopes.	Establish WLPZs during design of treatment project; implement WLPZ protections during treatment	East Bay Regional Park District	East Bay Regional Park District

Procedures for Determining Watercourse and Lake Protection Zone (WLPZ) widths

Water Class	Class I	Class II	Class III	Class IV
Water Class Characteristics or Key Indicator Beneficial Use	1) Domestic supplies, including springs, on site and/or within 100 feet downstream of the operations area and/or 2) Fish always or seasonally present onsite, includes habitat to sustain fish migration and spawning.	1) Fish always or seasonally present offsite within 1000 feet downstream and/or 2) Aquatic habitat for nonfish aquatic species. 3) Excludes Class III waters that are tributary to Class I waters.	No aquatic life present, watercourse showing evidence of being capable of sediment transport to Class I and II waters under normal high-water flow conditions after completion of timber operations.	Man-made watercourses, usually downstream, established domestic, agricultural, hydroelectric supply or other beneficial use.
WLPZ Width (ft) – Distance from top of bank to the edge of WLPZ				
< 30 % Slope	75	50	Sufficient to prevent the degradation of downstream beneficial uses of water. Determined on a site-specific basis.	
30-50 % Slope	100	75		
>50 % Slope	150	100		

Source: 14 CCR Section 916.5 [936.5, 956.5] (February 2019 version)

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
The following WLPZ protections will be applied for all treatments: ▶ Treatment activities with WLPZs will retain at least 75 percent surface cover and undisturbed area to act as a filter strip for raindrop energy dissipation and for wildlife habitat. If this percentage is reduced a qualified RPF will provide the project proponent with a site- and/or treatment activity-specific explanation for the percent surface cover reduction, which will be included in the PSA. After completion of the PSA and prior to or during treatment implementation, if there is any deviation (e.g., further reduction) from the reduced percent as explained in the PSA, this will be documented in the post-project implementation report (referred to by CAL FIRE as a Completion Report). This requirement is based on 14 CCR Section 916.4 [936.4, 956.4] Subsection (b)(6) (February 2019 version) and 14 CCR Section 916.5 (February 2019 version). ▶ Equipment, including tractors and vehicles, must not be driven in wet areas or WLPZs, except over existing roads or watercourse crossings where vehicle tires or tracks remain dry. ▶ Equipment used in vegetation removal operations will not be serviced in WLPZs, within wet meadows or other wet areas, or in locations that would allow grease, oil, or fuel to pass into lakes, watercourses, or wet areas. ▶ WLPZs will be kept free of slash, debris, and other material that harm the beneficial uses of water. Accidental deposits will be removed immediately. ▶ Burn piles will be located outside of WLPZs. ▶ No fire ignition (nor use of associated accelerants) will occur within WLPZs however low intensity backing fires may be allowed to enter or spread into WLPZs. ▶ Within Class I and Class II WLPZs, locations where project operations expose a continuous area of mineral soil 800 square feet or larger shall be treated for reduction of soil loss. Treatment shall occur prior to October 15th and disturbances that are created after October 15th shall be treated within 10 days. Stabilization measures shall be selected that will prevent significant movement of soil into water bodies and may include but are not limited to mulching, rip-rap, grass seeding, or chemical soil stabilizers. ▶ Where mineral soil has been exposed by project operations on approaches to watercourse crossings of Class I, II, or III within a WLPZ, the disturbed area shall be stabilized to the extent necessary to prevent the discharge of soil into watercourses or lakes in amounts that would adversely affect the quality and beneficial uses of the watercourse. ▶ Where necessary to protect beneficial uses of water from project operations, protection measures such as seeding, mulching, or replanting shall be used to retain and improve the natural ability of the ground cover within the WLPZ to filter sediment, minimize soil erosion, and stabilize banks of watercourses and lakes. ▶ Equipment limitation zones (ELZs) will be designated adjacent to Class III and Class IV watercourses with minimum widths of 25 feet where side-slope is less than 30 percent and 50 feet where side-slope is 30 percent or greater. An RPF will describe the limitations of heavy equipment within the ELZ and, where appropriate, will include additional measures to protect the beneficial uses of water. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Establish WLPZs during design of treatment project; implement WLPZ protections during treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
SPR HYD-5 Protect Non-Target Vegetation and Special-status Species from Herbicides: The project proponent will implement the following measures when applying herbicides: ▶ Locate herbicide mixing sites in areas devoid of vegetation and where there is no potential of a spill reaching non-target vegetation or a waterway. ▶ Use only herbicides labeled for use in aquatic environments when working in riparian habitats or other areas where there is a possibility the herbicide could come into direct contact with water. Only hand application of herbicides will be allowed in riparian habitats and only during low-flow periods or when seasonal streams are dry. ▶ No terrestrial or aquatic herbicides will be applied within WLPZs of Class I and II watercourses, if feasible. If this is not feasible, hand application of herbicides labeled for use in aquatic environments may be used within the WLPZ provided that the project proponent notifies the applicable regional water quality control board no fewer than 15 days prior to herbicide application. The feasibility of avoiding herbicide application within WLPZ of Class I and II watercourses will be determined by the project proponent and may be based on whether doing so will preclude achieving CalVTP program objectives, including, but not limited to, protection of vulnerable communities. The reasons for infeasibility will be documented in the PSA. ▶ No herbicides will be applied within a 50-foot buffer of ESA or CESA listed plant species or within 50 feet of dry vernal pools. ▶ For spray applications in and adjacent to habitats suitable for special-status species, use herbicides containing dye (registered for aquatic use by DPR, if warranted) to prevent overspray. ▶ Application will cease when weather parameters exceed label specifications or when sustained winds at the site of application exceeds 7 miles per hour (whichever is more conservative). ▶ No herbicide will be applied during precipitation events or if precipitation is forecast 24 hours before or after project activities. This SPR applies to herbicide treatment activities and all treatment types, including treatment maintenance.	During herbicide treatment activities	East Bay Regional Park District	East Bay Regional Park District
SPR HYD-6 Protect Existing Drainage Systems: If a treatment activity is adjacent to a roadway with stormwater drainage infrastructure, the existing stormwater drainage infrastructure will be marked prior to ground disturbing activities. If a drainage structure or infiltration system is inadvertently disturbed or modified during project activities, the project proponent will coordinate with owner of the system or feature to repair any damage and restore pre-project drainage conditions. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	Prior to ground disturbing activities; after ground disturbing activities if required	East Bay Regional Park District	East Bay Regional Park District
Noise Standard Project Requirements			
SPR NOI-1 Limit Heavy Equipment Use to Daytime Hours: The project proponent will require that operation of heavy equipment associated with treatment activities (heavy off-road equipment, tools, and delivery of equipment and materials) will occur during daytime hours if such noise would be audible to receptors (e.g., residential land uses, schools, hospitals, places of worship). Cities and counties in the treatable landscape typically restrict construction-noise (which would apply to vegetation treatment noise) to particular daytime hours. If the project proponent is subject to local noise ordinance, it will adhere to those to the extent the project is subject to them. If the applicable jurisdiction does not have a noise ordinance or policy restricting the time-of-day when noise-generating activity can occur noise-generating vegetation treatment activity will be limited to the hours of 7:00 a.m. to 6:00 p.m.,	During treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday and federal holidays. If the project proponent is not subject to local ordinances (e.g., CAL FIRE), it will adhere to the restrictions stated above or may elect to adhere to the restrictions identified by the local ordinance encompassing the treatment area. This SPR applies to all treatment activities and treatment types, including treatment maintenance.			
SPR NOI-2 Equipment Maintenance: The project proponent will require that all powered treatment equipment and power tools will be used and maintained according to manufacturer specifications. All diesel- and gasoline-powered treatment equipment will be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. This SPR applies to all activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR NOI-3 Engine Shroud Closure: The project proponent will require that engine shrouds be closed during equipment operation. This SPR applies only to mechanical treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR NOI-4 Locate Staging Areas Away from Noise-Sensitive Land Uses: The project proponent will locate treatment activities, equipment, and equipment staging areas away from nearby noise-sensitive land uses (e.g., residential land uses, schools, hospitals, places of worship), to the extent feasible, to minimize noise exposure. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR NOI-5 Restrict Equipment Idle Time: The project proponent will require that all motorized equipment be shut down when not in use. Idling of equipment and haul trucks will be limited to 5 minutes. This SPR applies to all treatment activities and all treatment types, including treatment maintenance.	During treatment	East Bay Regional Park District	East Bay Regional Park District
SPR NOI-6 Notify Nearby Off-Site Noise-Sensitive Receptors: For treatment activities utilizing heavy equipment, the project proponent will notify noise-sensitive receptors (e.g., residential land uses, schools, hospitals, places of worship) located within 1,500 feet of the treatment activity. Notification will include anticipated dates and hours during which treatment activities are anticipated to occur and contact information, including a daytime telephone number, of the project representative. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) will also be included in the notification. This SPR applies only to mechanical treatment activities and all treatment types, including treatment maintenance.	Prior to mechanical treatment activities within 1,500 feet of noise-sensitive receptors	East Bay Regional Park District	East Bay Regional Park District
Recreation Standard Project Requirements			
SPR REC-1 Notify Recreational Users of Temporary Closures. If a treatment activity would require temporary closure of a public recreation area or facility, the project proponent will coordinate with the owner/manager of that recreation area or facility. If temporary closure of a recreation area or facility is required, the project proponent will work with the owner/manager to post notifications of the closure at least 2 weeks prior to the commencement of the treatment activities. Additionally, notification of the treatment activity will be provided to the Administrative Officer (or equivalent official responsible for distribution of public information) of the county(ies) in which the affected recreation area or facility is located. This SPR applies to all treatment activities and treatment types, including treatment maintenance.	If a temporary closure of a public recreation area or facility is required, post notifications at least 14 days prior to treatment	East Bay Regional Park District	East Bay Regional Park District

Standard Project Requirements	Timing	Implementing Entity	Verifying/ Monitoring Entity
Transportation Standard Project Requirements			
SPR TRAN-1 Implement Traffic Control during Treatments: Prior to initiating vegetation treatment activities the project proponent will work with the agency(ies) with jurisdiction over affected roadways to determine if a Traffic Management Plan (TMP) is needed. A TMP will be needed if traffic generated by the project would result in obstructions, hazards, or delays exceeding applicable jurisdictional standards along access routes for individual vegetation treatments. If needed, a TMP will be prepared to provide measures to reduce potential traffic obstructions, hazards, and service level degradation along affected roadway facilities. The scope of the TMP will depend on the type, intensity, and duration of the specific treatment activities under the CalVTP. Measures included in the TMP could include (but are not be limited to) construction signage to provide motorists with notification and information when approaching or traveling along the affected roadway facilities, flaggers for lane closures to provide temporary traffic control along affected roadway facilities, treatment schedule restrictions to avoid seasons or time periods of peak vehicle traffic, haul-trip, delivery, and/or commute time restrictions that would be implemented to avoid peak traffic days and times along affected roadway facilities. If the TMP identifies impacts on transportation facilities outside of the jurisdiction of the project proponent, the TMP will be submitted to the agency with jurisdiction over the affected roadways prior to commencement of vegetation treatment projects. This SPR applies to all treatment activities and treatment types, including treatment maintenance. Smoke generated during prescribed burn operations could potentially affect driver visibility and traffic operations along nearby roadways. Direct smoke impacts to roadway visibility and indirect impacts related to driver distraction will be considered during the planning phase of burning operations. Smoke impacts and smoke management practices specific to traffic operations during prescribed fire operations will be identified and addressed within the TMP. The TMP will include measures to monitor smoke dispersion onto public roadways, and traffic control operations will be initiated in the event burning operations could affect traffic safety along any roadways. This SPR applies only to prescribed burn treatment activities and all treatment types, including treatment maintenance.	Prepare TMP prior to treatment and implement during treatment	East Bay Regional Park District	East Bay Regional Park District
Public Services and Utilities Standard Project Requirements			
SPR UTIL-1: Solid Organic Waste Disposition Plan. For projects requiring the disposal of material outside of the treatment area, the project proponent will prepare an Organic Waste Disposition Plan prior to initiating treatment activities. The Solid Organic Waste Disposition Plan will include the amount (e.g., tons) of solid organic waste to be managed onsite (i.e., scattering of wood materials, generating unburned piles, and pile burning) and transported offsite for processing (i.e., biomass power plant, wood product processing facility, composting). If the project proponent intends to transport solid organic waste offsite, the Solid Organic Waste Disposition Plan will clearly identify the location and capacity of the intended processing facility, consistent with local and state regulations to demonstrate that adequate capacity exists to accept the treated materials. This SPR applies only to mechanical and manual treatment activities and all treatment types, including treatment maintenance.	Prepare an Organic Waste Disposition Plan prior to mechanical or manual treatment activities; implement plan during mechanical or manual treatment activities	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
Air Quality			
Mitigation Measure AQ-1: Implement On-Road Vehicle and Off-Road Equipment Exhaust Emission Reduction Techniques Where feasible, project proponents will implement emission reduction techniques to reduce exhaust emissions from off-road equipment. It is acknowledged that due to cost, availability, and the limits of current technology, there may be circumstances where implementation of certain emission reduction techniques will not feasible. The project proponent will document the emission reduction techniques that will be applied and will explain the reasons other techniques that could reduce emissions are infeasible. Techniques for reducing emissions may include, but are not limited to, the following: ▶ Diesel-powered off-road equipment used in construction will meet EPA's Tier 4 emission standards as defined in 40 CFR 1039 and comply with the exhaust emission test procedures and provisions of 40 CFR Parts 1065 and 1068. Tier 3 models can be used if a Tier 4 version of the equipment type is not yet produced by manufacturers. This measure can also be achieved by using battery-electric off-road equipment as it becomes available. Prior to implementation of treatment activities, the project proponent will demonstrate the ability to supply the compliant equipment. A copy of each unit's certified tier specification or model year specification and operating permit (if applicable) will be available upon request at the time of mobilization of each unit of equipment. ▶ Use renewable diesel fuel in diesel-powered construction equipment. Renewable diesel fuel must meet the following criteria: ▪ meet California's Low Carbon Fuel Standards and be certified by CARB Executive Officer; ▪ be hydrogenation-derived (reaction with hydrogen at high temperatures) from 100 percent biomass material (i.e., non-petroleum sources), such as animal fats and vegetables; ▪ contain no fatty acids or functionalized fatty acid esters; and ▪ have a chemical structure that is identical to petroleum-based diesel and complies with American Society for Testing and Materials D975 requirements for diesel fuels to ensure compatibility with all existing diesel engines. ▶ Electric- and gasoline-powered equipment will be substituted for diesel-powered equipment. ▶ Workers will be encouraged to carpool to work sites, and/or use public transportation for their commutes. Off-road equipment, diesel trucks, and generators will be equipped with Best Available Control Technology for emission reductions of NO_X and PM.	During treatment	East Bay Regional Park District	East Bay Regional Park District
Archaeological, Historical, and Tribal Cultural Resources			
Mitigation Measure CUL-2: Protect Inadvertent Discoveries of Unique Archaeological Resources or Subsurface Historical Resources If any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, are discovered during ground-disturbing activities, all ground-disturbing activity within 100 feet of the resources will be halted and a qualified archaeologist will assess the significance of the find. The qualified archaeologist will work with the project proponent to develop a primary records report that will comply with applicable state or local agency procedures. If the archaeologist determines that further information is needed to evaluate significance, a data recovery plan will be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find constitutes a unique archaeological resource, subsurface historical resource, or tribal cultural resource), the archaeologist will work with the project proponent to develop appropriate procedures to protect the integrity of the resource. Procedures could include preservation in place (which is the preferred manner of	During ground-disturbing activities	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
mitigating impacts to archaeological sites), archival research, subsurface testing, or recovery of scientifically consequential information from and about the resource. Any find will be recorded standard DPR Primary Record forms (Form DPR 523) will be submitted to the appropriate regional information center.			
Biological Resources			
Mitigation Measure BIO-1a: Avoid Loss of Special-Status Plants Listed under ESA or CESA If listed plants are determined to be present through application of SPR BIO-1 and SPR BIO-7, the project proponent will avoid and protect these species by establishing a no-disturbance buffer around the area occupied by listed plants and marking the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway), exceptions to this requirement are listed later in this measure. The no-disturbance buffers will generally be a minimum of 50 feet from listed plants, but the size and shape of the buffer zone may be adjusted if a qualified RPF or botanist determines that a smaller buffer will be sufficient to avoid killing or damaging listed plants or that a larger buffer is necessary to sufficiently protect plants from the treatment activity. The appropriate buffer size will be determined based on plant phenology at the time of treatment (e.g., whether the plants are in a dormant, vegetative, or flowering state), the individual species' vulnerability to the treatment method being used, and environmental conditions and terrain. For example, paint-on or wicking application of herbicides to invasive plants may be implemented within 50 feet of listed plant species without posing a risk, especially if the listed plants are dormant at the time of application. Consideration of factors such as site hydrology, changes in light, edge effects, and potential introduction of invasive plants and noxious weeds may inform the determination of buffer width. If a no-disturbance buffer is reduced below 50 feet from a listed plant, a qualified RPF or botanist will provide the project proponent with a site- and/or treatment activity-specific explanation for the buffer reduction, which will be included in the PSA. After completion of the PSA and prior to or during treatment implementation, if there is any deviation (e.g., further reduction) from the reduced buffer as explained in the PSA, this will be documented in the post-project implementation report (referred to by CAL FIRE as a Completion Report) with a science-based justification for the deviation. No fire ignition (and associated use of accelerants) will occur within 50 feet of listed plants. For species listed under ESA or CESA, if the project proponent cannot avoid loss by implementing no-disturbance buffers, the project proponent will implement Mitigation Measure BIO-1c. The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or botanist, in consultation with CDFW and USFWS, as appropriate depending on species status and location, that the listed plants would benefit from treatment in the occupied habitat area even though some of the listed plants may be lost during treatment activities. For a treatment to be considered beneficial to listed special-status plants, the qualified RPF or botanist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the PSA. If it is determined that treatment activities would be beneficial to listed plants, no compensatory mitigation for loss of individuals will be required.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
Mitigation Measure BIO-1b: Avoid Loss of Special-Status Plants Not Listed Under ESA or CESA If non-listed special-status plant species (i.e., species not listed under ESA or CESA, but meeting the definition of special-status as stated in Section 3.6.1 of the Program EIR) are determined to be present through application of SPR BIO-1 and SPR BIO-7, the project proponent will implement the following measures to avoid loss of individuals and maintain habitat function of occupied habitat:	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▶ Physically avoid the area occupied by the special-status plants by establishing a no-disturbance buffer around the area occupied by 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 generally be a minimum of 50 feet from special-status plants, but the size and shape of the buffer zone may be adjusted if a qualified RPF or botanist determines that a smaller buffer will be sufficient to avoid loss of or damaging to special-status plants or that a larger buffer is necessary to sufficiently protect plants from the treatment activity. The appropriate size and shape of the buffer zone will be determined by a qualified RPF or botanist and will depend on plant phenology at the time of treatment (e.g., whether the plants are in a dormant, vegetative, or flowering state), the individual species' vulnerability to the treatment method being used, and environmental conditions and terrain. Consideration of factors such as site hydrology, changes in light, edge effects, and potential introduction of invasive plants and noxious weeds may inform an appropriate buffer size and shape. ▶ Treatments may be conducted within this buffer if the potentially affected special-status plant species is a geophytic, stump-sprouting, or annual species, and the treatment can be conducted outside of the growing season (e.g., after it has completed its annual life cycle) or during the dormant season using only treatment activities that would not damage the stump, root system or other underground parts of special-status plants or destroy the seedbank. ▶ Treatments will be designed to maintain the function of special-status plant habitat. For example, for a fuel break proposed in treatment areas occupied by special-status plants, if the removal of shade cover would degrade the special-status plant habitat despite the requirement to physically or seasonally avoid the special-status plant itself, habitat function would be diminished and the treatment would need to be modified or precluded from implementation. ▶ No fire ignition (and associated use of accelerants) will occur within the special-status plant buffer. A qualified RPF or botanist with knowledge of the special-status plant species habitat and life history will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA because implementation of the treatment would not maintain habitat function of the special-status plant habitat (i.e., the habitat would be rendered unsuitable) or because the loss of special-status plants would substantially reduce the number or restrict the range of a special-status plant species. If the project proponent determines the impact on special-status plants would be less than significant, no further mitigation will be required. If the project proponent determines that the loss of special-status plants or degradation of occupied habitat would be significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure BIO-1c will be implemented. The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or botanist that the special-status plants would benefit from treatment in the occupied habitat area even though some of the non-listed special-status plants may be killed during treatment activities. For a treatment to be considered beneficial to non-listed special-status plants, the qualified RPF or botanist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the PSA. If it is determined that treatment activities would be beneficial to special-status plants, no compensatory mitigation will be required.			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
Mitigation Measure BIO-2a: Avoid Mortality, Injury, or Disturbance and Maintain Habitat Function for Listed Wildlife Species and California Fully Protected Species (All Treatment Activities) If California Fully Protected Species or species listed under ESA or CESA are observed during reconnaissance surveys (conducted pursuant to SPR BIO-1) or focused or protocol-level surveys (conducted pursuant to SPR BIO-10), or if the species is assumed present, the project proponent will avoid adverse effects to the species by implementing the following. <u>Avoid Mortality, Injury, or Disturbance of Individuals</u> The project proponent will implement one of the following 2 measures to avoid mortality, injury, or disturbance of individuals: 1. Treatment will not be implemented within the occupied habitat. Any treatment activities outside occupied habitat will be a sufficient distance from the occupied habitat such that mortality, injury, or disturbance of the species will not occur, as determined by a qualified RPF or biologist using the most current and commonly-accepted science and considering published agency guidance; OR 2. Treatment will be implemented outside the sensitive period of the species' life history (e.g., outside the breeding or nesting season) during which the species may be more susceptible to disturbance, or disturbance could result in loss of eggs or young. For species present year-round, CDFW and/or USFWS/NOAA Fisheries will be consulted to determine if there is a period of time within which treatment could occur that would avoid mortality, injury, or disturbance of the species. ▪ For species listed under ESA or CESA, if the project proponent cannot avoid mortality, injury, or disturbance by implementing one of the two options listed above, the project proponent will implement Mitigation Measure BIO-2c. Injury or mortality of California Fully Protected Species is prohibited pursuant to Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code and will be avoided. <u>Maintain Habitat Function</u> The project proponent will design treatment activities to maintain the habitat function, by implementing the following: ▪ While performing review and surveys for SPR BIO-1 and SPR BIO-10, a qualified RPF or biologist will identify any habitat features that are necessary for survival (e.g., habitat necessary for breeding, foraging, shelter, movement) of the affected wildlife species (e.g., trees with complex structure, trees with large cavities, trees with nesting platforms; dens; tree snags; large raptor nests [including inactive nests]; downed woody debris; food sources). These habitat features will be marked and treatments applied to the features will be designed to minimize or avoid the loss or degradation of suitable habitat for listed species during treatments. Identification and treatment of these features will be based on the life history and habitat requirements of the affected species and the most current, commonly accepted science. ▪ If it is determined during implementation of SPR BIO-1 and SPR BIO-10 that listed or fully protected wildlife with specific requirements for high canopy cover (e.g., Humboldt marten, fisher, spotted owl, coastal California gnatcatcher, riparian woodrat) are present within a treatment area, then tree or shrub canopy cover within existing suitable areas will be retained at the percentage preferred by the species (as determined by expert opinion, published habitat association information, or other documented standards that are commonly accepted [e.g., 50 percent for coastal California gnatcatcher]) such that habitat function is maintained.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
A qualified RPF or biologist of the lead agency will determine if, after implementation of the impact avoidance measures listed above, the habitat function will remain for the affected species after implementation of the treatment. Because this measure pertains to species listed under CESA or ESA or are fully protected, the qualified RPF or biologist will consult with CDFW and/or USFWS/NOAA Fisheries regarding the determination that habitat function is maintained. If the lead agency determines after consultation that the treatment will not maintain habitat function for the special-status species, the project proponent will implement Mitigation Measure BIO-2c. **Project-Specific Guidance to Implement Mitigation Measure BIO-2a** If California Fully Protected Species or species listed under ESA or CESA are observed during focused or protocol-level surveys (conducted pursuant to SPR BIO-10) or assumed present, the project proponent will avoid adverse effects to the species by implementing the following. <u>Alameda whipsnake</u> Alameda whipsnake will generally be assumed present in all areas identified by the qualified RPF or biologist as Alameda whipsnake habitat, which generally is defined as native core scrub communities, adjacent grasslands, adjacent woodlands, and open woodland habitat. Alameda whipsnake core scrub habitat is composed of variable native communities including maritime chaparral, coastal scrub, coyote brush scrub, or serpentine scrub, where habitat patch sizes is at least 0.5 acre in size. Avoidance of mortality or disturbance to individual Alameda whipsnakes will be achieved through the following strategies which are applicable to manual treatment, mechanical treatment, and prescribed burning in all areas where the qualified RPF or biologist has determined that habitat is suitable for Alameda whipsnake: ▪ **Pretreatment Survey**: A qualified RPF or biologist will conduct a pre-treatment survey for Alameda whipsnake immediately prior to manual, mechanical, broadcast burn, and pile burn treatment activities occurring in habitat determined by the qualified RPF or biologist as suitable for the species. Survey methodology would conform with techniques discussed in *Alameda Whipsnake (*Masticophis lateralis euryxanthus*) 5-year Review: Summary and Evaluation* (USFWS 2011) and *Habitat Use and Management Considerations for the Threatened Alameda whipsnake* (Masticophis lateralis euryxanthus*) in Central California* (Miller and Alvarez 2016). ▪ **Biological Monitoring**: A qualified RPF or biologist will monitor all manual and mechanical treatment activities and prescribed burning. The qualified RPF or biologist will conduct ongoing surveys ahead of all manual and mechanical work in suitable Alameda whipsnake core scrub habitat areas and adjacent dispersal or foraging habitat, as determined by the qualified RPF or biologist. Survey methodology was adapted from techniques discussed in "*Alameda Whipsnake* (Masticophis lateralis euryxanthus) *5-year Review: Summary and Evaluation*" (USFWS 2011) and "*Habitat Use and Management Considerations for the Threatened Alameda whipsnake* (Masticophis lateralis euryxanthus) *in Central California*" (Miller and Alvarez 2016). ▪ Ongoing surveys will be conducted throughout the day ahead of vegetation removal to ensure that the species is not present prior to the start of work. ▪ The qualified biological monitor will survey refugia on the ground, branches and brush, and vegetative canopy for Alameda whipsnake that could be present.			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ When dense vegetation inhibits visual survey effectiveness, the biologist will work closely with the crew to ensure all cut vegetation is surveyed prior to manual and mechanical removal; the crew and qualified RPF or biologist will continuously switch between removing a small amount of vegetation, then surveying the next visible patch of vegetation. ▪ If work ceases for up to one hour, the area will be re-surveyed prior to returning to work. If the qualified RPF or biologist deems the area to be highly suitable habitat for Alameda whipsnake, they may require that the crew cuts the upper half of the canopy, pauses for survey, and then removes the lower portion of the canopy. ▪ During this survey effort, the qualified RPF or biologist will advise the crew on avoidance of potential refugia such as burrows and rock piles. ▪ **Increased qualifications for Biological Monitor:** When work would involve mechanical vegetation removal in Alameda whipsnake core scrub habitat, the following measures will apply: ▪ The qualified biological monitor will have at least one year of experience conducting monitoring for Alameda whipsnake. ▪ At the start of each day, the fuels reduction crew will receive an environmental training review that will address Alameda whipsnake ecology, survey requirements for the biological monitor, and a site-specific discussion of debris disposal which avoids burrows, rock outcrops, and core scrub vegetation. ▪ **Check Equipment**: All contractors, their employees, and agency personnel involved in the implementation of the project will check for the presence of Alameda whipsnake under or next to stationary vehicles prior to operating their vehicles. If an Alameda whipsnake is found, the qualified RPF or biologist will determine necessary next steps to avoid impact. ▪ **Seasonal Restrictions**: In habitat suitable for Alameda whipsnake suitable winter retreats (e.g., within native core scrub habitat, rock outcrops within approximately 50 feet of core scrub habitat), as determined by a qualified RPF or biologist, treatment activities involving heavy equipment and ground disturbance will not occur between approximately November 1 and March 31 (as determined by a qualified biologist based on temperature and weather conditions) in order to avoid potential disturbance of hibernating Alameda whipsnake. Manual treatment involving hand crews (i.e., work with hedge trimmers, hand-held chainsaws, weed-whippers.); prescribed burning; or mechanical treatment if heavy machinery can be operated without ground disturbance from an existing road or other disturbed area devoid of burrows or rock piles (e.g., use of an articulating arm masticator operated from an existing road or other disturbed, compacted area that contains no burrows or potential hibernaculum) may be implemented during hibernating season. ▪ **Temperature Restrictions**: Mechanical vegetation removal will be restricted to when temperatures are conducive to Alameda whipsnake movement. Within areas determined by the qualified RPF or biologist to be suitable Alameda whipsnake habitat, mechanical treatment and prescribed burning will be avoided when temperatures are determined by the qualified RPF or biologist to be too low for Alameda whipsnake movement. Manual treatments may occur in cooler conditions, after the qualified RPF or biologist has thoroughly surveyed the area (Van Dam, pers. comm., 2022). ▪ Alameda whipsnake movement is likely when cloud cover, wind, and microhabitat features are favorably warm, and when outdoor temperatures are above 45 to 55 degrees F, or when conditions are reflective of the best available current research on Alameda whipsnake movement. No mechanical vegetation removal would occur in Alameda whipsnake core scrub habitat (as determined by the qualified RPF or biologist) when outdoor temperatures are below 45 degrees F.			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ The additional biologist qualifications recommended above (see "Increased qualifications of the qualified biologist or RPF") would apply to all mechanical vegetation removal in core scrub, and therefore would apply to the qualified biologist or RPF making temperature determinations. ▪ **Debris Management**: Contractors will immediately (i.e., the same day) process (i.e., remove completely from the treatment area, chip, permanently place within the treatment area for soil stabilization) all cut materials (i.e., brush, stems, slash, logs) as they are produced to avoid attracting Alameda whipsnake to the vegetation piles. If processing within the same day is not feasible, the on-site biologist will advise crews on suitable location(s) outside of suitable core scrub and directly adjacent woodland/grassland habitat, such as within landings or temporary refuge areas, for temporary storage of cut materials that cannot be processed immediately. ▪ Chips will not be spread on burrows, rock outcrops, or other features that may be used as wildlife refugia. Chips will be spread on the ground to the specified depth limit and will not be sprayed on vegetation. No chips will be spread in native perennial grassland habitat or in habitat identified by a qualified RPF or biologist as Alameda whipsnake core scrub habitat. ▪ Chip depth will be limited to no more than 4-6 inches, and chip cover will be limited to no more than 20 percent of a given treatment area. ▪ Chip placement will be evaluated by a qualified RPF or biologist during the post-treatment inspection of the project area. The assessment will include a review of chip depth, chip percent cover, and effective avoidance of burrow, rock outcrops, native grassland, and Alameda whipsnake core scrub habitat. If chips are found to exceed depth limits or percent cover of the project area, crews will return to the site and will move chips until the chip placement objectives are achieved. ▪ **Pile Burning in Alameda Whipsnake Habitat**: If pile burning is implemented, piles will be placed away from mammal burrows, rock outcrops, or core scrub habitat which could serve as refugia for Alameda whipsnake. Burn piles will be burned gradually and lit from one end (the uphill side on slopes) to allow Alameda whipsnakes which may be using the pile for refuge to escape. When feasible, a single pile will be ignited, and all other piles in the vicinity of the burning pile will be carried to the burning pile and burned in the same location as the initial burn pile. When feasible, this strategy would minimize risk to wildlife using piles for refuge. ▪ **Understory Vegetation Treated First**: Whenever feasible in forested environments adjacent to core scrub habitat, understory vegetation will be removed first to facilitate visibility of Alameda whipsnake by a qualified RPF or biologist, followed by trees. ▪ **Individual Whipsnake Avoided**: If any Alameda whipsnake individuals are observed during surveys or monitoring, or enter the project area during project activities, all work will stop within a no-disturbance buffer of 100 feet around the individual unless the qualified RPF or biologist determines that a different sized buffer is appropriate to avoid disturbance, injury, or mortality. The RPF or biologist will direct work outside the buffer to occur away from the individual whipsnake. Treatment activities will cease within the buffer until the animal leaves on its own and the occurrence will be reported to the qualified RPF or biologist. ▪ **Vehicle Collision Prevention with Wildlife:** The following guidance will avoid vehicle collisions with whipsnake and other wildlife:			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ Operators of vehicles and equipment will avoid collisions with wildlife including snakes. The qualified RPF, biologist, and crews will frequently check for injured or killed wildlife in the path of vehicles driving within the project area. ▪ If burrows are present in unpaved roads or road shoulders, they will be marked with high-visibility flagging or spray paint and a qualified RPF or biologist will inspect burrows before heavy machinery or vehicles drives over burrows, and at the end of each work day ▪ If any equipment or vehicle's windshield is blocked by dirt, debris, or other material sufficient to impair visibility, the driver will stop the vehicle and clear debris until there is full visibility. ▪ If any wildlife is inadvertently injured or killed by any project activities involving vehicle collision, the qualified RPF or biologist will immediately be informed and the injured or killed animal will be documented and reported to East Bay Regional Park District Stewardship department. If it is determined that the injured or killed animal is state or federally listed, East Bay Regional Park District will provide all relevant reports and photographs to CDFW and/or USFWS. Habitat function will be maintained for Alameda whipsnake through the following strategies: ▪ **Create Shrub Islands:** Vegetation removal in core scrub habitat will create shrub islands. This includes all types of coastal scrub and chaparral, including coyote brush scrub. Shrub islands are described based on USFWS definition of Alameda whipsnake "core" habitat use areas (USFWS 2000). ▪ In areas identified by the qualified RPF or biologist as Alameda whipsnake habitat, shrub vegetation patches which are at least 0.5 acre in size, or 0.2 acre in size but within 50 feet of another patch of scrub at least 0.5 acre in size, will be retained. o Vegetation removal activities will retain patches of core scrub habitat in irregular, oblong shapes which maintain a natural looking condition on the landscape. ▪ **Protection of Refugia Habitat**: Rock outcroppings, mammal burrows, and native shrubs within 50 feet of rock outcroppings which are suitable Alameda whipsnake refugia (as determined by the qualified RPF or biologist) will be maintained and protected from vehicles. ▪ Wood chips and debris would not be placed within 50 feet of rock outcroppings. ▪ Cut and chipped material will not be spread on any mammal burrows or rock outcrops, and would not be placed on top of vegetation in core scrub habitat. <u>California red-legged frog</u> If California red-legged frogs are assumed present or detected during protocol-level surveys, the following measures will be implemented: ▪ During the dispersal season from October 1 through April 15, pre-treatment visual surveys will be performed daily by a qualified RPF, biologist, or biological monitor, prior to implementation of any treatment activities within breeding, upland, or dispersal habitat as determined by a qualified biologist. If a California red-legged frog is found during pre-treatment surveys or enters the project site during treatment activities, all work will stop until the animal leaves on its own and the occurrence will be reported to the qualified biologist.			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ When treating live understory vegetation, if feasible, masticating heads will be kept out of the duff layer and will conduct treatments approximately 6 inches above the ground. ▪ If operators need to move or treat large woody debris greater than 12 inches in diameter, that piece of woody debris will be evaluated for California red-legged frog by a qualified biologist, qualified professional, RPF, RPF supervised designee, or a contractor who has been through the environmental awareness training. ▪ No mechanized operations year-round (including track chippers unless on an existing road) within 30 feet of a Class III or adjacent to other potential sensitive habitat areas (e.g., wet seeps). Only handwork may occur in these areas. If handwork is proposed, the area must be surveyed by a qualified biologist no more than 7 days prior to operations. <u>Special-status Birds (Listed under the state or federal ESA, or fully protected)</u> ▪ If active special-status bird nests are detected during focused surveys, a no-disturbance buffer of at least 1.0 mile will be established around active nests for golden eagle, 0.5 mile for American peregrine falcon and bald eagle, 0.25 mile for white-tailed kite nests, and at least 100 feet around the nests of other special-status birds, and no treatment activities will occur within this buffer until the chicks have fledged as determined by a qualified RPF or biologist. ▪ Additionally, trees containing bald eagle nests will not be removed pursuant to the Bald and Golden Eagle Protection Act. <u>Mountain Lion</u> To avoid mortality or injury to mountain lion the following will be implemented. ▪ **Nursery Avoidance.** If a nursery is known to occur in the area or further signs of a nursery are detected based on the surveys described under SPR BIO-10 (e.g., lactating adult females or cubs on camera, repeated detections of an adult female in the area, growls or calls from cubs), the Park District will implement a no-disturbance buffer of at least 2,000 feet (Wilmers et al. 2013) for a minimum of 10 weeks. Treatment activities will not occur within this buffer during this time to avoid disturbance, injury, or mortality of mountain lion nurseries. <u>Ringtail</u> If the limited operating period for ringtail is determined to be infeasible and ringtails are assumed present or detected during focused surveys implemented under SPR BIO-10, then the following avoidance and minimization measures will be required for mechanical and prescribed burning treatment activities: ▪ **Den Surveys**. Within seven days prior to the start of manual treatments, mechanical treatments, and prescribed burning treatments during the ringtail maternity season, a qualified RPF or biologist will conduct a den search in the treatment area to be treated the next week. The qualified RPF or biologist will search for large trees (i.e., greater than 12 inches diameter at breast height [dbh]) with appropriate cavities (i.e., holes larger than 3 inches in diameter, cavities extending approximately 12 inches down from the cavity hole). If found, the qualified RPF or biologist will inspect the cavity using a cell phone with a flash or other tools (e.g., borescopes), if feasible, to determine whether ringtails are present. Areas (e.g., large trees) with appropriate den habitat, verified as occupied or not, will be marked (i.e., with flagging, spray paint), for inspection during future sweeps (as described below) and for potential avoidance during maternity season. If it is not possible to determine if a potential den is occupied or not, due to access or safety issues, the potential den location will be flagged for avoidance and not disturbed			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity

during the maternity season. The qualified RPF or biologist will also search for dens in dense brush habitat before mechanical and prescribed burning treatments and will note any sightings of fleeing adult ringtails.
▪ **Daily Sweeps**. If active ringtail dens are not discovered during a den survey, daily sweeps will be implemented to avoid inadvertent destruction of active dens that eluded detection during the den search as well as take of adult ringtails and kits. On the first morning of work for manual or mechanical treatments, a qualified RPF or biologist will conduct a sweep of the area to be treated and will search all habitat suitable for ringtails where treatments will occur that day (i.e., larger trees, heavy brush, rock piles) for active dens or adults, including the trees with cavities previously marked by the qualified RPF or biologist. On following days, a trained contractor will search all areas previously marked by the qualified RPF or biologist for active dens (see training requirements below under "Training and Monitoring"). Before a prescribed burn, a qualified RPF or biologist will search all habitat suitable for ringtails that would be burned (i.e., heavy brush, burn piles, large trees). Any potential den structures, where the biologist, RPF, or trained contractor is not able to determine if the structure is occupied or not, due to safety or access issues, would be retained until the end of the ringtail maternity season (June 30).
▪ **Active Dens**. If active ringtail dens are discovered during a den survey or daily sweep, a no-disturbance buffer of at least 0.25 mile will be implemented around the den, and manual treatments, mechanical treatments, and prescribed burning will not proceed within the buffer until at least the end of the ringtail maternity season (June 30). The qualified RPF or biologist will confirm that the den is unoccupied before treatment activities resume. The 0.25-mile buffer would incorporate the den and an area greater than the typical ringtail home range in northern California (Wyatt, pers. comm., 2021). If an active den is discovered, CDFW will be notified of the den and buffer location. CDFW will be provided an opportunity to visit the site and provide technical information on the size and shape of the den buffer.
▪ **Training and Monitoring**. On the first morning of work for manual and mechanical treatments and before a prescribed burn is initiated, the qualified RPF or biologist will provide biological resource training (as required under CalVTP PEIR SPR BIO-2) for all contractors. In addition to standard biological resource training, the qualified RPF or biologist will provide additional training specific to ringtail that will include the following elements:
  ▪ Description of ringtail appearance (i.e., physical features, typical size); description of typical ringtail behavior; and description of denning habitat suitable for ringtail, particularly in that week's treatment area. The approximate location of large trees with cavities that were previously marked will be noted;
  ▪ Measures required during operation, including daily sweeps of habitat suitable for ringtail where mastication will occur that day (i.e., heavy brush habitat, previously marked tree cavities), and required increased vigilance when operating in heavy brush;
  ▪ Measures required if a ringtail is spotted (i.e., all work halts until a qualified RPF or biologist can conduct a den search and sweep; if the qualified RPF or biologist observes a ringtail or confirms the contractor's observation, the occurrence will be reported to CDFW);
  ▪ Measures required if a ringtail den is found (i.e., 0.25-mile no-disturbance buffer and requirements described above under "Active Dens" will be followed);			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ Definition of and legal consequences for take of ringtail (i.e., penalties for violating section 2080 range from $25,000 to $50,000 for each violation, one-year imprisonment, or both fine and imprisonment (California Fish and Game Code, Section 12008.1)); and ▪ Requirements for contacting CDFW, which include the following circumstances: ringtails observed during treatment activities (notify within 3 business days); and active ringtail den discovered (notify within 24 hours); and take of ringtail occurs (notify within 24 hours).			
Mitigation Measure BIO-2b: Avoid Mortality, Injury, or Disturbance and Maintain Habitat Function for Other Special-Status Wildlife Species (All Treatment Activities) If other special-status wildlife species (i.e., species not listed under CESA or ESA or California Fully Protected, but meeting the definition of special status as stated in Section 3.6.1 of the Program EIR) are observed during reconnaissance surveys (conducted pursuant to SPR BIO-1) or focused or protocol-level surveys (conducted pursuant to SPR BIO-10), the project proponent will avoid or minimize adverse effects to the species by implementing the following. <u>Avoid Mortality, Injury, or Disturbance of Individuals</u> The project proponent will implement the following to avoid mortality, injury, or disturbance of individuals: ▶ For all treatment activities except prescribed burning, the project proponent will establish a no-disturbance buffer around occupied sites (e.g., nests, dens, roosts, middens, burrows, nurseries). Buffer size will be determined by a qualified RPF or biologist using the most current, commonly accepted science and will consider published agency guidance; however, buffers will generally be a minimum of 100 feet, unless site conditions indicate a smaller buffer would be sufficient for protection or a larger buffer would be needed. Factors to be considered in determining buffer size will include, but not be limited to, the species' tolerance to disturbance; the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; baseline levels of noise and human activity; and treatment activity. Buffer size may be adjusted if the qualified RPF or biologist determines that such an adjustment would not be likely to adversely affect (i.e., cause mortality, injury, or disturbance to) the species within the nest, den, burrow, or other occupied site. If a no-disturbance buffer is reduced below 100 feet from an occupied site, a qualified RPF or biologist will provide the project proponent with a site- and/or treatment activity-specific explanation for the buffer reduction, which will be included in the PSA. After completion of the PSA and prior to or during treatment implementation, if there is any deviation (e.g., further reduction) from the reduced buffer as explained in the PSA, this will be documented in the post-project implementation report (referred to by CAL FIRE as a Completion Report). ▪ No-disturbance buffers will be marked with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). No activity will occur within the buffer areas until the qualified RPF or biologist has determined that the young have fledged or dispersed; the nest, den, or other occurrence is no longer active; or reducing the buffer would not likely result in disturbance, mortality, or injury. A qualified RPF, biologist, or biological technician will be required to monitor the effectiveness of the no-disturbance buffer around the nest, den, burrow, or other occurrence during treatment. If treatment activities cause agitated behavior of the individual(s), the buffer distance will be increased, or treatment activities modified until the agitated behavior stops. The qualified RPF, biologist, or biological technician will have the authority to stop any treatment activities that could result in mortality, injury or disturbance to special-status species.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
▪ For prescribed burning, the project proponent will implement the treatment outside the sensitive period of the species' life history (e.g., outside the breeding or nesting season) during which the species may be more susceptible to disturbance, or disturbance could result in loss of eggs or young. For species present year-round, the qualified RPF or biologist will determine the period of time within which prescribed burning could occur that will avoid or minimize mortality, injury, or disturbance of the species. The project proponent may consult with CDFW and/or USFWS for technical information regarding appropriate limited operating periods. <u>Maintain Habitat Function</u> ▶ For all treatment activities, the project proponent will design treatment activities to maintain the habitat function by implementing the following: ▪ While performing review and surveys for SPR BIO-1 and SPR BIO-10, a qualified RPF or biologist will identify any habitat features that are necessary for survival (e.g., habitat necessary for breeding, foraging, shelter, movement) of the affected wildlife species (e.g., trees with complex structure, trees with large cavities, trees with nesting platforms; tree snags; large raptor nests [including inactive nests]; downed woody debris). These habitat features will be marked and treatments applied to the features will be designed to minimize or avoid the loss or degradation of suitable habitat for listed species during treatments. Identification and treatment of these features will be based on the life history and habitat requirements of the affected species and the most current, commonly accepted science. ▪ If it is determined during implementation of SPR BIO-1 and SPR BIO-10 that special-status wildlife with specific requirements for high canopy cover (e.g., northern goshawk, Sierra Nevada snowshoe hare) are present within a treatment area, then tree or shrub canopy cover within existing suitable areas will be retained at the percentage preferred by the species (as determined by expert opinion, published habitat association information, or other documented standards that are commonly accepted) such that the habitat function is maintained. ▶ A qualified RPF or biologist will determine if, after implementation of the impact avoidance measures listed above, the habitat function will remain for the affected species after implementation of the treatment. The qualified RPF or biologist may consult with CDFW and/or USFWS for technical information regarding habitat function. A qualified RPF or biologist with knowledge of the special-status wildlife species habitat and life history will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA because implementation of the treatment will not maintain habitat function of the special-status wildlife species' habitat or because the loss of special-status wildlife would substantially reduce the number or restrict the range of a special-status wildlife species. If the project proponent determines the impact on special-status wildlife would be less than significant, no further mitigation will be required. If the project proponent determines that the loss of special-status wildlife or degradation of occupied habitat would be significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure BIO-2c will be implemented. The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or biologist that the non-listed special-status wildlife would benefit from treatment in the occupied habitat area even though some of the non-listed special-status wildlife may be killed, injured, or disturbed during treatment activities. For a treatment to be considered beneficial to non-listed special-status wildlife, the qualified RPF or biologist will demonstrate with substantial evidence that habitat function is reasonably expected to			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the PSA. If it is determined that treatment activities would be beneficial to special-status wildlife, no compensatory mitigation will be required. The qualified RPF or biologist may consult with CDFW and/or USFWS for technical information regarding the determination that a non-listed special-status species would benefit from the treatment. **Project-Specific Guidance to Implement Mitigation Measure BIO-2b** If other (i.e., non-listed) special-status wildlife species are observed during focused or protocol-level surveys (conducted pursuant to SPR BIO-10), the project proponent will avoid or minimize adverse effects to the species by implementing the following. ▶ If western pond turtle are detected during focused surveys, the project proponent will require flagging areas for avoidance in which no treatment activities will occur, biological monitoring, or other measures recommended by CDFW as necessary to avoid injury to or mortality of western pond turtle. If impacts will remain significant under CEQA and the project proponent determines that additional mitigation is necessary to reduce significant impacts, Mitigation Measure BIO-2c will be required, and incidental take permitting under CESA may be required pursuant to consultation with CDFW. ▶ If active special-status bird nests are detected during focused surveys, a no-disturbance buffer of at least 0.5 mile will be established around active bald eagle nests; 0.25 mile for great gray owl nests, and at least 100 feet around the nests or colonies of tricolored blackbirds, and no treatment activities will occur within this buffer until the chicks have fledged as determined by a qualified RPF or biologist. ▶ If active burrowing owl burrow(s) is(are) detected during the nesting season (April 1 – August 15) during SPR BIO-10 surveys, a no-disturbance nest buffer of 660 feet would be placed around active burrowing owl burrows. If the burrow is active during the overwintering season (October 16 – March 31), a no-disturbance nest buffer of 330 feet will be placed around the burrow. No treatment activities would occur within this buffer until all burrowing owls have left the burrow as determined by a qualified biologist or RPF. These buffer distances are recommended per the CDFW staff report on burrowing owl mitigation (CDFW 2012). The buffer distance may be modified by a qualified RPF or biologist based on presence of natural buffers provided by vegetation or topography, nest height above ground, baseline levels of noise and human activity, and expected treatment activities. ▶ If American badger are detected during focused surveys or assumed present, a no-disturbance buffer would be established around the den, the size of which would be determined by the qualified RPF or biologist, and no treatment activities would occur within this buffer. ▶ If special-status bat roosts are identified during focused surveys, a no-disturbance buffer of 250 feet would be established around active pallid bat, Townsend's big-eared bat, western mastiff bat, and western red bat roosts and mechanical treatments, manual treatments, and pile burning would not occur within this buffer. ▶ If San Francisco dusky-footed woodrat are observed during focused surveys woodrat nests will be flagged for avoidance by a qualified RPF or biologist, and a no-disturbance buffer of 3.2 feet (1 meter) would be established, and no vehicles, equipment, or personnel would enter this buffer area. If active woodrat nests within treatment areas cannot be avoided, the crew will implement phased nest relocation procedures as outlined in the Park District's protocol (EBRPD 2019), with all nest relocation procedures overseen by a qualified RPF or biologist.			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
Mitigation Measure BIO-2e: Design Treatment to Retain Special-Status Butterfly Host Plants (All Treatment Activities) If federally listed butterflies are identified as occurring or having potential to occur during review and surveys for SPR BIO-1 and confirmed during protocol-level surveys per SPR BIO-10, then the following measures will be implemented: ▶ Treatment areas within the range of these species will be surveyed for the host plant for each species (Table 3.6-34). ▶ Host plants for federally listed butterflies within the occupied habitat will be marked with high-visibility flagging, fencing, or stakes, and no treatment activities will occur within 10 feet of these plants. ▶ Because prescribed herbivory could result in the indiscriminate removal of the host plants for federally listed butterflies, this treatment type will not be used within occupied habitat of any federally listed butterfly species, unless it is known that the host plant is unpalatable to the herbivore. ▶ Treatment areas that are not occupied but are within the range of the federally listed butterfly will be divided into as many treatment units as feasible such that the entirety of the habitat is not treated within the same year. ▶ Treatments will be conducted in a patchy pattern to the extent feasible in areas that are not occupied but are within the range of the federally listed butterfly, such that the entirety of the habitat is not burned or removed, and untreated portions of suitable habitat are retained. ▶ If the project proponent cannot implement the measures above to avoid mortality, injury, or disturbance of federally listed butterflies or degradation of occupied habitat (host plants) such that its function would not be maintained, the project proponent will implement Mitigation Measure BIO-2c. ▶ **CESA and ESA Listed Species**. A qualified RPF or biologist will determine if, after implementation of any feasible impact avoidance measures (potentially including others not listed above), the treatment will result in mortality, injury, or disturbance, or if after implementation of the treatment, habitat function will remain for the affected species. For species listed under CESA or ESA or that are fully protected, the qualified RPF or biologist will consult with CDFW and/or USFWS regarding this determination. If consultation determines that mortality, injury, or disturbance of listed butterflies or degradation of occupied habitat such that its function would not be maintained would occur, the project proponent will implement Mitigation Measure BIO-2c.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Table 3.6-34 Special-status Butterflies and Associated Host Plants

Butterfly Species	Host Plants
bay checkerspot butterfly	dwarf plantain (*Plantago virginica*), purple owl's clover (*Castilleja exserta*)
Behren's silverspot butterfly	blue violet (*Viola adunca*)
callippe silverspot butterfly	California golden violet (*Viola pedunculata*)
Carson wandering skipper	salt grass (*Distichlis spicata*)
El Segundo blue butterfly	seacliff buckwheat (*Eriogonum parvifolium*)

Butterfly Species	Host Plants
Hermes copper butterfly	spiny redberry (*Rhamnus crocea*)
Kern primrose sphinx moth	plains evening-primrose (*Camissonia contorta*), field primrose (*Camissonia campestris*)
Laguna Mountains skipper	Cleveland's horkelia (*Horkelia clevelandii*), sticky cinquefoil (*Drymocallis glandulosa*)
Lange's metalmark butterfly	naked-stemmed buckwheat (*Eriogonum nudum*)
lotis blue butterfly	seaside bird's foot trefoil (*Hosackia gracilis*)
Mission blue butterfly	lupine (*Lupinus* spp.)
Myrtle's silverspot butterfly	blue violet
Oregon silverspot butterfly	blue violet
Palos Verdes blue butterfly	Santa Barbara milkvetch (*Astragalus trichopodus*), common deerweed (*Acmispon glaber*)
San Bruno elfin butterfly	broadleaf stonecrop (*Sedum spathulifolium*), manzanita (*Arctostaphylos* spp.), huckleberry (*Vaccinuum* spp.)
Smith's blue butterfly	seacliff buckwheat, seaside buckwheat (*Eriogonum latifolium*)
Quino checkerspot butterfly	dwarf plantain, purple owl's clover

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
Other Special-status Species. A qualified RPF or biologist with knowledge of the special-status species' habitat and life history will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA, because implementation of the treatment will not maintain habitat function of the special-status species' habitat or because the loss of special-status individuals would substantially reduce the number or restrict the range of a special-status species. If the project proponent determines the impact on special-status butterflies would be less than significant, no further mitigation will be required. If the project proponent determines that the loss of special-status butterflies or degradation of occupied habitat would be significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure BIO-2c will be implemented. The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or biologist that the special-status butterfly species would benefit from treatment in the occupied habitat area even though some may be killed, injured or disturbed during treatment activities. For a treatment to be considered beneficial to special-status butterfly species, the qualified RPF or biologist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources). If it is determined that treatment activities would be beneficial to special-status butterflies, no compensatory mitigation will be required. **Project-Specific Guidance to Implement Mitigation Measure BIO-2e** To avoid impacts on monarch butterfly, the following measures will be implemented: ▶ Treatments will be designed to retain locally native milkweed (*Asclepias* spp.) plants in the project area as feasible. Large patches of locally native milkweed plants in a treatment area will be marked with high-visibility flagging, fencing, stakes, or other methods, and these plants will not be removed or trampled during treatment activities. ▶ Broadcast burning and mowing in habitat suitable for monarch (i.e., areas containing both host plants for monarch caterpillars, which are primarily locally native milkweeds [*Asclepias* spp.] within the family Apocynaceae upon which adult monarchs lay eggs; and nectar-producing flowering plants of many other species that provide food for adult butterflies) will be restricted to October 31- March 15. ▶ Treatments will be conducted in a patchy pattern in habitat suitable for monarch, such that the entirety of the habitat is not burned or removed, and untreated portions of suitable habitat are retained. ▶ Although no overwintering sites are known to occur in the project area, if monarch overwintering sites are located during pre-activity surveys, a no-activity buffer of at least 500 feet will be established around the overwintering site and no project activities will occur in the buffer until a qualified biologist has determined that all overwintering monarch butterflies have left the area (generally October 31 – March 15).			
Mitigation Measure BIO-2g: Design Treatment to Avoid Mortality, Injury, or Disturbance and Maintain Habitat Function for Special-Status Bumble Bees (All Treatment Activities) If special-status bumble bees are identified as occurring during review and surveys under SPR BIO-1 and confirmed during protocol-level surveys per SPR BIO-10, or if suitable habitat for special-status bumble bees is identified during review and surveys under SPR	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
BIO-1 (e.g., wet meadow, forest meadow, riparian, grassland, or coastal scrub habitat containing sufficient floral resources within the range of the species), then the project proponent will implement the following measures, as feasible: ▶ Prescribed burning (broadcast burning) within occupied or suitable habitat for special-status bumble bees will occur from October through February to avoid the bumble bee flight season. ▶ Treatment areas in occupied or suitable habitat will be divided into a sufficient number of treatment units such that the entirety of the habitat is not treated within the same year; the objective of this measure is to provide refuge for special-status bumble bees during treatment activities and temporary retention of suitable floral resources proximate to the treatment area. ▶ Treatments will be conducted in a patchy pattern to the extent feasible in occupied or suitable habitat, such that the entirety of the habitat is not burned or removed and untreated portions of occupied or suitable habitat are retained (e.g., fire breaks will be aligned to allow for areas of unburned floral resources for special-status bumble bees within the treatment area). ▶ Herbicides will not be applied to flowering native plants within occupied or suitable habitat to the extent feasible during the flight season (March through September). **CESA and ESA Listed Species.** A qualified RPF or biologist will determine if, after implementation of feasible avoidance measures (potentially including others not listed above), the treatment will result in mortality, injury, or disturbance to the species, or if after implementation of the treatment, habitat function will remain for the affected species. For species listed under CESA or ESA or that are fully protected, the qualified RPF or biologist will consult with CDFW and/or USFWS regarding this determination. If consultation determines that mortality, injury, or disturbance of listed bumble bees (in the event the Candidate listing is confirmed) or degradation of occupied (or assumed to be occupied) habitat such that its function would not be maintained would occur, the project proponent will implement Mitigation Measure BIO-2c. **Other Special-status Species.** A qualified RPF or biologist with knowledge of the special-status species' habitat and life history will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA because implementation of the treatment will not maintain habitat function of the special-status species' habitat or because the loss of special-status individuals would substantially reduce the number or restrict the range of a special-status species. If the project proponent determines the impact on special-status bumble bees would be less than significant, no further mitigation will be required. If the project proponent determines that the loss of special-status bumble bees or degradation of occupied (or assumed to be occupied) habitat would be significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure BIO-2c will be implemented. The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or biologist that the special-status bumble bee species would benefit from treatment in the occupied (or assumed to be occupied) habitat area even though some of the non-listed special-status bumble bees may be killed, injured, or disturbed during treatment activities. For a treatment to be considered beneficial to special-status bumble bee species, the qualified RPF or biologist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the PSA. If it is determined that treatment activities would be beneficial to special-status bumble bees, no compensatory mitigation will be required.			

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
Mitigation Measure BIO-3a: Design Treatments to Avoid Loss of Sensitive Natural Communities and Oak Woodlands The project proponent will implement the following measures when working in treatment areas that contain sensitive natural communities identified during surveys conducted pursuant to SPR BIO-3: ▶ Reference the *Manual of California Vegetation*, Appendix 2, Table A2, *Fire Characteristics* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/) or other best available information to determine the natural fire regime of the specific sensitive natural community type (i.e., alliance) present. The condition class and fire return interval departure of the vegetation alliances present will also be determined. ▶ Design treatments in sensitive natural communities and oak woodlands to restore the natural fire regime and return vegetation composition and structure to their natural condition to maintain or improve habitat function of the affected sensitive natural community. Treatments will be designed to replicate the fire regime attributes for the affected sensitive natural community or oak woodland type including seasonality, fire return interval, fire size, spatial complexity, fireline intensity, severity, and fire type as described in *Fire in California's Ecosystems* (Van Wagtendonk et al. 2018) and the *Manual of California Vegetation* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/). Treatments will not be implemented in sensitive natural communities that are within their natural fire return interval (i.e., time since last burn is less than the average time required for that vegetation type to recover from fire) or within Condition Class 1. ▶ To the extent feasible, no fuel breaks will be created in sensitive natural communities with rarity ranks of S1 (critically imperiled) and S2 (imperiled). ▶ To the extent feasible, fuel breaks will not remove more than 20 percent of the native vegetation relative cover from a stand of sensitive natural community vegetation in sensitive natural communities with a rarity rank of S3 (vulnerable) or in oak woodlands. In forest and woodland sensitive natural communities with a rarity rank of S3, and in oak woodlands, only shaded fuel breaks will be installed, and they will not be installed in more than 20 percent of the stand of sensitive natural community or oak woodland vegetation (i.e., if the sensitive natural community covers 100 acres, no more than 20 acres will be converted to create the fuel break). ▶ Use prescribed burning as the primary treatment activity in sensitive natural communities that are fire dependent (e.g., closed-cone forest and woodland alliances, chaparral alliances characterized by fire-stimulated, obligate seeders), to the extent feasible and appropriate based on the fire regime attributes as described in *Fire in California's Ecosystems* (Van Wagtendonk et al. 2018) and the *Manual of California Vegetation* (Sawyer et al. 2009 or current version, including updated natural communities data at http://vegetation.cnps.org/). ▶ Time prescribed herbivory to occur when non-target vegetation is not susceptible to damage (e.g. non-target vegetation is dormant or has completed its reproductive cycle for the year). For example, use herbivores to control invasive plants growing in sensitive habitats or sensitive natural communities when sensitive vegetation is dormant but invasive plants are growing. Timing of herbivory to avoid non-target vegetation will be determined by a qualified botanist, RPF, or biologist based on the specific vegetation alliance being treated, the life forms and life conditions of its characteristic plant species, and the sensitivity of the non-target vegetation to the effects of herbivory. ▶ The feasibility of implementing the avoidance measures will be determined by the project proponent based on whether implementation of this mitigation measure will preclude completing the treatment project within the reasonable period of time necessary to meet CalVTP program objectives, including, but not limited to, protection of vulnerable communities. If the	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
avoidance measures are determined by the project proponent to be infeasible, the project proponent will document the reasons implementation of the avoidance strategies are infeasible in the PSA. After completion of the PSA and prior to or during treatment implementation, if there is any change in the feasibility of avoidance strategies from those explained in the PSA, this will be documented in the post-project implementation report (referred to by CAL FIRE as a Completion Report). A qualified RPF or botanist with knowledge of the affected sensitive natural community will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA because implementation of the treatment will not maintain habitat functions of the sensitive natural community or oak woodland. If the project proponent determines the impact on sensitive natural communities or oak woodlands would be less than significant, no further mitigation will be required. If the project proponent determines that the loss or degradation of sensitive natural communities or oak woodlands would be significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure BIO-3b will be implemented. The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or botanist that the sensitive natural community or oak woodland would benefit from treatment in the occupied habitat area even though some loss may occur during treatment activities. For a treatment to be considered beneficial to a sensitive natural community or oak woodland, the qualified RPF or botanist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the community (or similar community) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the PSA. If it is determined that treatment activities would be beneficial to sensitive natural communities or oak woodlands, no compensatory mitigation will be required.			
Mitigation Measure BIO-3b: Compensate for Loss of Sensitive Natural Communities and Oak Woodlands If significant impacts on sensitive natural communities or oak woodlands cannot feasibly be avoided or reduced as specified under Mitigation Measure BIO-3a, the project proponent will implement the following actions: ▶ Compensate for unavoidable losses of sensitive natural community and oak woodland acreage and function by: ▪ restoring sensitive natural community or oak woodland functions and acreage within the treatment area; ▪ restoring degraded sensitive natural communities or oak woodlands outside of the treatment area at a sufficient ratio to offset the loss of acreage and habitat function; or ▪ preserving existing sensitive natural communities or oak woodlands of equal or better value to the sensitive natural community lost through a conservation easement at a sufficient ratio to offset the loss of acreage and habitat function. ▶ The project proponent will prepare a Compensatory Mitigation Plan that identifies the residual significant effects on sensitive natural communities or oak woodlands that require compensatory mitigation and describes the compensatory mitigation strategy being implemented to reduce residual effects, and: 1. For preserving existing habitat outside of the treatment area in perpetuity, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands (e.g., the number and type of credits, location of mitigation bank or easement), parties responsible for the long-term management of the land, and the legal and funding mechanism for long-term conservation (e.g., holder of conservation easement or fee title). The project proponent will submit evidence that the necessary	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
mitigation has been implemented or that the project proponent has entered into a legal agreement to implement it and that compensatory habitat will be preserved in perpetuity. 2. For restoring or enhancing habitat within the treatment area or outside of the treatment area, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored or enhanced habitat. The project proponent will consult with CDFW and/or any other applicable responsible agency prior to finalizing the Compensatory Mitigation Plan in order to satisfy that responsible agency's requirements (e.g., permits, approvals) within the plan.			
Mitigation Measure BIO-3c: Compensate for Unavoidable Loss of Riparian Habitat If, after implementation of SPR BIO-4, impacts to riparian habitat remain significant under CEQA, the project proponent will implement the following: ▶ Compensate for unavoidable losses of riparian habitat acreage and function by: ▪ restoring riparian habitat functions and acreage within the treatment area; ▪ restoring degraded riparian habitat outside of the treatment area; ▪ purchasing riparian habitat credits at a CDFW-approved mitigation bank; or ▪ preserving existing riparian habitat of equal or better value to the riparian habitat lost through a conservation easement at a sufficient ratio to offset the loss of riparian habitat function and value. ▶ The project proponent will prepare a Compensatory Mitigation Plan that identifies the residual significant effects on riparian habitat that require compensatory mitigation and describes the compensatory mitigation strategy being implemented to reduce residual effects, and: 1. For preserving existing riparian habitat outside of the treatment area in perpetuity, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands (e.g., the number and type of credits, location of mitigation bank or easement), parties responsible for the long-term management of the land, and the legal and funding mechanism for long-term conservation (e.g., holder of conservation easement or fee title). The project proponent will submit evidence that the necessary mitigation has been implemented or that the project proponent has entered into a legal agreement to implement it and that compensatory plant populations will be preserved in perpetuity. 2. For restoring or enhancing riparian habitat within the treatment area or outside of the treatment area, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored or enhanced habitat. The project proponent will consult with CDFW and/or any other applicable responsible agency prior to finalizing the Compensatory Mitigation Plan to satisfy that responsible agency's requirements (e.g., permits, approvals) within the plan. Compensatory mitigation may be satisfied through compliance with permit conditions, or other authorizations obtained by the project proponent (e.g., Lake and Streambed Alteration Agreement), if these requirements are equally or more effective than the mitigation identified above.	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
Mitigation Measure BIO-4: Avoid State and Federally Protected Wetlands Impacts to wetlands will be avoided using the following measures: ▶ The qualified RPF or biologist will delineate the boundaries of federally protected wetlands according to methods established in the USACE wetlands delineation manual (Environmental Laboratory 1987) and the appropriate regional supplement for the ecoregion in which the treatment is being implemented. ▶ The qualified RPF or biologist will delineate the boundaries of wetlands that may not meet the definition of waters of the United States, but would qualify as waters of the state, according to the state wetland procedures (California Water Boards 2019 or current procedures). ▶ A qualified RPF or biologist will establish a buffer around wetlands and mark the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). The buffer will be a minimum width of 25 feet but may be larger if deemed necessary. The appropriate size and shape of the buffer zone will be determined in coordination with the qualified RPF or biologist and will depend on the type of wetland present (e.g., seasonal wetland, wet meadow, freshwater marsh, vernal pool), the timing of treatment (e.g., wet or dry time of year), whether any special-status species may occupy the wetland and the species' vulnerability to the treatment activities, environmental conditions and terrain, and the treatment activity being implemented. ▶ A qualified RPF or biological technician will periodically inspect the materials demarcating the buffer to confirm that they are intact and visible, and wetland impacts are being avoided. ▶ Within this buffer, herbicide application is prohibited. ▶ Within this buffer, soil disturbance is prohibited. Accordingly, the following activities are not allowed within the buffer zone: mechanical treatments, prescribed herbivory, equipment and vehicle access or staging. ▶ Only prescribed (broadcast) burning may be implemented in wetland habitats if it is determined by a qualified RPF or biologist that: ▪ No special-status species are present in the wetland habitat ▪ The wetland habitat function would be maintained. ▪ The prescribed burn is within the normal fire return interval for the wetland vegetation types present ▪ Fire containment lines and pile burning are prohibited within the buffer ▪ No fire ignition (and associated use of accelerants) will occur within the wetland buffer	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District
Mitigation Measure BIO-5: Retain Nursery Habitat and Implement Buffers to Avoid Nursery Sites The project proponent will implement the following measures while working in treatment areas that contain nursery sites identified in surveys conducted pursuant to SPR BIO-10: **Retain Known Nursery Sites.** A qualified RPF or biologist will identify the important habitat features of the wildlife nursery and, prior to treatment activities, will mark these features for avoidance and retention during treatment. **Establish Avoidance Buffers.** The project proponent will establish a non-disturbance buffer around the nursery site if activities are required while the nursery site is active/occupied. The appropriate size and shape of the buffer will be determined by a qualified RPF or biologist, based on potential effects of project-related habitat disturbance, noise, visual disturbance, and other factors. No treatment activity will commence within the buffer area until a qualified RPF or biologist confirms that the nursery site is no longer active/occupied. Monitoring	Prior to and during treatment	East Bay Regional Park District	East Bay Regional Park District

Mitigation Measures	Timing	Implementing Entity	Verifying/ Monitoring Entity
of the effectiveness of the non-disturbance buffer around the nursery site by a qualified RPF, biologist, or biological technician during and after treatment activities will be required. If treatment activities cause agitated behavior of the individual(s), the buffer distance will be increased, or treatment activities modified until the agitated behavior stops. The qualified RPF, biologist, or biological technician will have the authority to stop any treatment activities that could result in potential adverse effects to special-status species.			
Greenhouse Gas Emissions			
Mitigation Measure GHG-2. Implement GHG Emission Reduction Techniques During Prescribed Burns When planning for and conducting a prescribed burn, project proponents implementing a prescribed burn will incorporate feasible methods for reducing GHG emissions, including the following, which are identified in the *National Wildfire Coordinating Group Smoke Management Guide for Prescribed Fire* (NWCG 2018): ▶ reduce the total area burned by isolating and leaving large fuels (e.g., large logs, snags) unburned; ▶ reduce the total area burned through mosaic burning; ▶ burn when fuels have a higher fuel moisture content; ▶ reduce fuel loading by removing fuels before ignition. Methods to remove fuels include mechanical treatments, manual treatments, prescribed herbivory, and biomass utilization; and ▶ schedule burns before new fuels appear. As the science evolves, other feasible methods or technologies to sequester carbon could be incorporated, such as conservation burning, a technique for burning woody material that reduces the production of smoke particulates and carbon released into the atmosphere and generates more biochar. Biochar is produced from the material left over after the burn and spread with compost to increase soil organic matter and soil carbon sequestration. Technologies to reduce greenhouse gas emissions may also include portable units that perform gasification to produce electricity or pyrolysis that produces biooil that can be used as liquid fuel and/or syngas that can be used to generate electricity. The project proponent will document in the Burn Plan required pursuant to SPR AQ-3 which methods for reducing GHG emissions can feasibly be integrated into the treatment design.	Prior to and during prescribed burning treatment	East Bay Regional Park District	East Bay Regional Park District
Hazardous Materials, Public Health and Safety			
Mitigation Measure HAZ-3: Identify and Avoid Known Hazardous Waste Sites Prior to the start of vegetation treatment activities requiring soil disturbance (i.e., mechanical treatments) or prescribed burning, CAL FIRE and other project proponents will make reasonable efforts to check with the landowner or other entity with jurisdiction (e.g., California Department of Park and Recreation) to determine if there are any sites known to have previously used, stored, or disposed of hazardous materials. If it is determined that hazardous materials sites could be located within the boundary of a treatment site, the project proponent will conduct a DTSC EnviroStor web search (https://www.envirostor.dtsc.ca.gov/public/) and consult DTSC's Cortese List to identify any known contamination sites within the project site. If a proposed mechanical treatment or prescribed burn is located on a site included on the DTSC Cortese List as containing potential soil contamination that has not been cleaned up and deemed closed by DTSC, the area will be marked and no prescribed burning or soil disturbing treatment activities will occur within 100 feet of the site boundaries. If it is determined through coordination with landowners or after review of the Cortese List that no potential or known contamination is located on a project site, the project may proceed as planned.	During PSA preparation **Database searches are complete; see PSA/Addendum for results**	East Bay Regional Park District	East Bay Regional Park District

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Attachment B

Treatment Objectives and Vegetation Type Descriptions

Table B-1 Vegetation Treatment Objectives by Treatment Area

Treatment Area	Size (acres)	Treatment Type	Historic Vegetation[1]	Current Vegetation[1]	Vegetation Management Goal[1]	Treatment Guidance
Meadows Canyon	355	ER	Annual grassland, coastal scrub, riparian woodland	Annual grassland, coyote brush scrub, maritime chaparral, oak-bay woodland, coastal scrub, riparian woodland, eucalyptus forest	Annual grassland, maritime chaparral, oak-bay woodland, coastal scrub, riparian woodland	Remove eucalyptus and pine trees where feasible to prevent ember production and distribution. Create and maintain low fuel volume surface fuels, such as grasses by removing coyote brush (*Baccharis pilularis*) and French broom (*Genista monspessulana*). Prescribed burning, prescribed herbivory, and mechanical treatment (i.e., masticating, mowing) are suitable to maintain the vegetation on this site.
Nimitz Way	73	FB	Annual grassland, coastal scrub, riparian woodland	Coyote brush scrub, coastal scrub, nonnative coniferous forest, riparian woodland	Oak-bay woodland, coastal scrub, riparian woodland, annual grassland	Remove eucalyptus and pine trees where feasible to prevent ember production and distribution. Create and maintain low fuel volume surface fuels, such as grasses by removing coyote brush and French broom. Prescribed burning, prescribed herbivory, and mechanical treatment (i.e., masticating, mowing) are suitable to maintain the vegetation on this site.
Lake Anza	97	ER	Annual grassland, coastal scrub, riparian woodland, oak-bay woodland	Eucalyptus forest, oak-bay woodland, riparian woodland, nonnative coniferous forest, developed/disturbed/ landscaped	Annual grassland, coastal scrub, oak-bay woodland, riparian woodland, oak-bay woodland	Emphasize surface fuel volume reduction by removing dead branches, bark, and forest litter under eucalyptus trees. Thin eucalyptus trees and those over-shading developed oak-bay woodland. Prune lower branches of all retained trees. All treatment activities are possible. Screen visual resources from and around Lake Anza when conducting treatments, where feasible. Enhance and maintain defensible space according to performance standards.
Tilden South	465	ER	Annual grassland, coastal scrub, oak-bay woodland	Eucalyptus forest, oak-bay woodland, coyote brush scrub, maritime chaparral, coastal scrub, annual grassland	Annual grassland, oak-bay woodland, maritime chaparral, coastal scrub, oak-bay woodland	Remove eucalyptus and pine trees where feasible to improve Alameda whipsnake habitat, and prevent ember production and distribution. Create and maintain low fuel volume surface fuels, such as grasses by removing coyote brush and French broom. Prescribed burning, prescribed herbivory, and mechanical treatment (i.e., masticating, mowing) are suitable to maintain the vegetation on this site.
Fish Ranch	32	ER	Annual grassland, oak-bay woodland	Annual grassland, coyote brush scrub, coastal scrub, oak-bay woodland	Annual grassland, coastal scrub, oak-bay woodland	Invasives are a concern in this treatment area due to existing seedbed. Emphasize surface fuel volume reduction by removing understory shrubs, dead branches, bark, and forest litter under eucalyptus trees. Remove shrubs under hardwoods as well. Prune lower branches of all trees.
Sibley Wildlife Corridor	133	ER	Annual grassland, coastal scrub, oak-bay woodland	Oak-bay woodland, nonnative coniferous forest, coyote brush scrub	Annual grassland, oak-bay woodland, coastal scrub, oak-bay woodland	Invasives are a concern at this treatment area due to existing seedbed. Remove understory shrubs and young pine and low hanging branches beneath mature pines; also remove all hazardous and structurally-weak mature pines. Emphasize surface fuel volume reduction by removing dead branches, bark, and forest litter under eucalyptus trees. Thin eucalyptus trees and those above developed oak-bay woodland. Prune lower branches of all retained trees. All treatment activities are possible.

Treatment Area	Size (acres)	Treatment Type	Historic Vegetation[1]	Current Vegetation[1]	Vegetation Management Goal[1]	Treatment Guidance
Sibley Western Hills	163	WUI	Annual grassland, coastal scrub, oak-bay woodland	Annual grassland, oak-bay woodland, coastal scrub	Annual grassland, oak-bay woodland, coastal scrub, oak-bay woodland	Steep slopes and invasive plant species (e.g., French broom) are a concern. Remove all eucalyptus trees. Reduce shrubby fuels. All treatment activities (including prescribed herbivory) are possible for surface fuel management, but steep slopes may require additional measures if mechanical treatments are used. Where necessary, may employ cable yarding systems or other methods suitable for steep slopes.
Old Tunnel	15	FB	Annual grassland, coastal scrub, oak-bay woodland	Oak-bay woodland, nonnative coniferous forest, coyote brush scrub	Annual grassland, oak-bay woodland, oak-bay woodland	Create and maintain defensible space around structures and strategic access routes. Remove coyote brush to restore annual grasslands within 200 feet of structures and roads, or where feasible.
Sibley North	101	ER	Annual grassland, coastal scrub, oak-bay woodland, maritime chaparral	Annual grassland, eucalyptus forest, oak-bay woodland, riparian woodland, nonnative coniferous forest, coyote brush scrub, coastal scrub,	Annual grassland, oak-bay woodland, riparian woodland, oak-bay woodland, coastal scrub, maritime chaparral	Presence of steep slopes likely preclude certain areas of off-road mechanical treatments. Remove shrubs near emerging oak-bay trees to speed succession to oak-bay woodland within 100 feet of roads. Remove French broom, prune up low hanging branches, and remove dead and downed material. Use prescribed herbivory and/or manual treatment to maintain the site.
Sibley South	25	ER	Annual grassland, closed cone pine-cypress	Annual grassland, closed cone pine-cypress, eucalyptus forest, oak-bay woodland, coastal scrub	Annual grassland closed cone pine-cypress, oak-bay woodland, coastal scrub	Thin eucalyptus and pines to 25-foot spacing, selecting for removal those trees located above well-developed oak-bay woodlands, and elsewhere, remove those trees that are smaller, unhealthy or have multiple trunks. Emphasize surface fuel reduction under retained trees, prune trees to 8-foot height in thinned areas. Mechanical treatments are most suitable for tree removal, but all treatment activities are suitable for surface fuel treatment.
Stream Trail	37	ER	Oak woodland, riparian woodland	Eucalyptus forest, oak-bay woodland, coastal scrub, annual grassland	Oak-bay woodland, coastal scrub, riparian woodland	Emphasize understory and surface fuel treatments by removing forest litter, dead bark and branches, and understory shrubs. All treatment activities are suitable. Remove eucalyptus sprouts, re-sprouts, and French broom. Enhance conditions for Oakland Star tulip and western leatherwood where appropriate.
French Trail	72	ER	Annual grassland, oak-bay woodland, redwood forest, closed cone pine-cypress	Nonnative coniferous forest, maritime chaparral, oak-bay woodland, annual grassland	Maritime chaparral, oak-bay woodland, annual grassland, redwood forest, closed cone pine-cypress	Presence of steep slopes likely preclude certain areas of off-road mechanical treatments. Remove shrubs near emerging oak-bay trees to speed succession to oak-bay woodland within 100 feet of road. Remove French broom, prune up low hanging branches, and remove dead and downed material. Use prescribed herbivory or manual treatment to maintain the site.

Treatment Area	Size (acres)	Treatment Type	Historic Vegetation[1]	Current Vegetation[1]	Vegetation Management Goal[1]	Treatment Guidance
Serpentine Prairie Ridge	48	ER	Annual grassland, serpentine hardwoods, serpentine scrub	Oak-bay woodland, redwood forest, coyote brush scrub, sagebrush scrub, serpentine scrub, serpentine hardwoods,	Annual grassland, serpentine hardwoods, serpentine scrub	Remove dead and stressed pines and acacia stands. Use manual treatment or prescribed herbivory (i.e., goats) to create and maintain open areas, and to remove understory shrubs for oak woodlands. Remove French broom. Create defensible space adjacent to private land according to performance standards. Existing oak-bay woodland areas will be assessed before treatment to determine whether they meet the membership criteria of a sensitive natural community per the requirements of SPR BIO-3 (Table 4.5-3), and if sensitive natural communities are present, treatment will proceed with implementation of Mitigation Measure BIO-3a.
Redwood Canyon	118	ER	Annual grassland, coastal scrub, oak-bay woodland	Eucalyptus forest, annual grassland, oak-bay woodland, riparian woodland, coastal scrub, nonnative coniferous forest, coyote brush scrub,	Annual grassland, oak-bay woodland, riparian woodland, coastal scrub, oak-bay woodland	Thin eucalyptus and pines to 25-foot spacing, selecting for removal those trees located above well-developed oak-bay woodlands, and elsewhere, remove those trees that are smaller, unhealthy or have multiple trunks. Prune trees to 8 feet. Thin eucalyptus groves of smaller trees.
Redwood Canyon WUI	57	WUI	Annual grassland, coastal scrub, oak-bay woodland	Oak-bay woodland, nonnative coniferous forest, coastal scrub, riparian woodland, annual grassland, coyote brush scrub	Oak-bay woodland, redwood forest, coastal scrub, riparian woodland, annual grassland	Create and maintain defensible space around structures and strategic access routes. Remove coyote brush to restore annual grasslands within 200 feet of structures and roads, or where feasible. Remove nonnative coniferous trees and retain redwoods in coniferous forest areas.
AC Soap Plant	59	WUI	Annual grassland, maritime chaparral, oak-bay woodland	Coyote brush scrub, coastal scrub, annual grassland	Coastal scrub, annual grassland, maritime chaparral	Steep slopes and invasive plant species (e.g., French broom) are a concern. Remove all eucalyptus trees. Reduce shrubby fuels. All treatment activities (including prescribed herbivory) are possible for surface fuel management, but steep slopes may require additional measures if mechanical treatments are used. Where necessary, may employ cable yarding systems or other methods suitable for steep slopes.
Bort Meadow	142	ER	Annual grassland, coastal scrub, oak-bay woodland	Eucalyptus forest, oak-bay woodland	Annual grassland, coastal scrub, oak-bay woodland	Steep slopes on east side limit the types of tree cutting and removal operations possible. Treat and monitor invasive species annually, where needed. Remove dead and dying trees throughout, leaving snags where feasible. On ridgetops, remove eucalyptus to minimize ember production and distribution. Prune all trees retained. Throughout, graze where feasible to limit shrub encroachment and apply herbicides to invasives. Remove understory shrubs from oak woodland to limit torching potential and provide more growing space for emerging native trees. Also create grassy openings in shrub patches consistent with SPR BIO-5 specifications. Remove French broom. All treatment activities are acceptable due to wide range of terrain, access, and species distribution/composition.

Treatment Area	Size (acres)	Treatment Type	Historic Vegetation[1]	Current Vegetation[1]	Vegetation Management Goal[1]	Treatment Guidance
Redwood Road Fuel Break	36	FB	Annual grassland, oak-bay woodland	Nonnative coniferous forest, annual grassland, oak-bay woodland	Annual grassland, oak-bay woodland	Treat and monitor invasive species annually, where needed. Remove dead and dying trees throughout, leaving snags where feasible. On ridgetops, remove eucalyptus to minimize ember production and distribution. Limb up all trees retained. Throughout, graze where feasible to limit shrub encroachment and apply herbicides to invasives. Remove understory shrubs from oak woodland to limit torching potential and provide more growing space for emerging trees. Also create grassy openings in shrub patches. Remove French broom. All treatment activities are acceptable due to wide range of terrain, access, and species distribution/composition.
AC Grass Valley	129	WUI	Annual grassland, oak-bay woodland	Eucalyptus forest, annual grassland, oak-bay woodland, coastal scrub	Annual grassland, oak-bay woodland, coastal scrub	Treat and monitor invasive species annually, where needed. Remove dead and dying trees throughout, leaving snags where feasible. Throughout, graze where feasible to limit shrub encroachment and apply herbicides to invasives. Remove understory shrubs from oak woodland to limit torching potential and provide more growing space for emerging trees. Also create grassy openings in shrub patches consistent with SPR BIO-5 specifications. Remove French broom.
Cow Hollow	87	ER	Annual grassland, oak-bay woodland	Coyote brush scrub, annual grassland, coastal scrub, oak-bay woodland	Annual grassland, coastal scrub, oak-bay woodland	Treat and monitor invasive species annually, where needed. Remove dead and dying trees throughout, leaving snags where feasible. Throughout, graze where feasible to limit shrub encroachment and apply herbicides to invasives. Remove understory shrubs from oak woodland to limit torching potential and provide more growing space for emerging trees. Also create grassy openings in shrub patches. Remove French broom.
Ten Hills	34	FB	Montane hardwood, annual grassland	Coastal scrub, oak-bay woodland	Coastal scrub, oak-bay woodland, annual grassland	Create and maintain defensible space around structures and strategic access routes. Treat and monitor invasive species annually, where needed. Remove dead and dying trees throughout, leaving snags where feasible. Prune all trees retained. Throughout, graze where feasible to limit shrub encroachment and apply herbicides to invasives. Remove understory shrubs from oak woodland to limit torching potential and provide more growing space for emerging trees. Also create grassy openings in shrub patches. Remove French broom. All treatment activities are acceptable due to wide range of terrain, access, and species distribution/composition.
Total Acres	**2,280**					

ER = Ecological restoration; FB = Fuel break, WUI = Wildland-urban interface fuel reduction

[1] Vegetation is classified in Table B-1 using EBRPD's vegetation types. See Table B-2 for vegetation type definitions. The historic vegetation is defined by the Wieslander Vegetation Type Mapping using data from the 1920s and 1930s (Kelly and Kobzina 2005).

Source: Vegetation types provided by EBRPD in 2022.

Table B-2 Vegetation Description and Treatment Objectives by Vegetation Type

Vegetation Type (EBRPD Habitat Types)	Vegetation Type in CLN and CWHR Classification System[1]	Veg Type Presence in Treatment Types	Vegetation Type Description	General Objectives	Other Considerations
Annual grassland	Moderate grassland (CLN) Annual grassland (CWHR)	ER, FB, WUI	Grasslands dominated by annuals, with varying amounts of native perennials, where July maximum temperatures are between 27° and 31° C.	Control infestations of invasive nonnative (ruderal) species. Maintain and enhance habitat for special-status plants and wildlife.	Max standing height of dead nonnative grasses should be maintained at 4–6 inches. In mixed native grass stands, maintain a max of 30 percent dead material by volume. Do not reduce native grasses to less than 4 inches. Prioritize ladder-fuel grasses to reduce torching and ember production.
Maritime chaparral	Chamise, lower montane mixed chaparral (CLN) Mixed chaparral, chamise-redshank chaparral (CWHR)	ER	Dense to moderate stands of chamise, ceanothus, manzanitas, and shrubby California buckeye.	Inhibit replacement of sensitive species by shade-tolerant species utilizing fire and fire surrogates. Reduce fuels to be more readily able to utilize prescribed burning and to control wildfire.	Anticipate a 5- to7- year treatment cycle to manage treated areas to standards of chaparral with young shrubs, short mature shrubs, or patchy islands. Utilize best practices to control pathogen spread that can kill sensitive and/or desired native species. Treatment will be consistent with SPR BIO-5 specifications.
Coastal scrub	California sagebrush (CLN) Coastal scrub (CWHR)	ER, FB, WUI	Low to moderate-height shrubs with moderate to dense canopy cover composed of vegetation with flexible branches and semi-woody stems growing from a woody base and shallow root system, typically between one and 7 feet in height. MCV alliances (Sawyer et al. 2009) observed during the reconnaissance survey included bush monkeyflower scrub, California buckwheat scrub, poison oak scrub, California sagebrush scrub.	Maintain and enhance scrub habitat values for a diverse assemblage of native plant and wildlife species, as well as increase diversity of age dynamics of scrub within a single-species stand. Shift species composition towards native scrub species or restore grasslands, where appropriate on historic grassland sites, or oak-bay woodland in steep drainages and north- or east-facing slopes. Control infestations of invasive species.	Create coastal scrub islands two times as wide as the height of tallest shrub through mosaic thinning or patch retention thinning. Clumps should be natural in appearance and include specimens of variable age classes. Species which are generally a high priority for removal are: coyote brush, poison oak (*Toxicodendron diversilobum*), and Himalayan blackberry (*Rubus armeniacus*).

Vegetation Type (EBRPD Habitat Types)	Vegetation Type in CLN and CWHR Classification System[1]	Veg Type Presence in Treatment Types	Vegetation Type Description	General Objectives	Other Considerations
Coyote brush scrub	Coyote brush (CLN) Coastal scrub (CWHR)	ER, FB, WUI	Dense to open canopy dominated by coyote brush.	Maintain and enhance habitat for special-status plants and wildlife. Restore to native grassland or encourage succession to oak-bay woodland, where appropriate. Remove dead material and individual specimens to reduce the overall number of plants and fuel quantity. Control infestations of invasive species.	Follow prescriptions for coastal scrub where trees do not exist. Initial treatment will be the most time-, resource-, and cost-intensive operation, followed by annual mowing of grass between clumps. A treatment cycle of 5 to 7 years will be necessary to maintain shrub clumps in treeless areas, and 3 to 5 years to maintain areas surrounding emerging trees. As tree canopies touch (within 10 years in most cases), maintenance requirements will dramatically decline.
Serpentine scrub	California sagebrush (CLN) Coastal scrub (CWHR)	ER	Coastal or semi-desert scrub on serpentine rock. In the project area, this habitat type supports a variety of special-status plants and sensitive natural communities. MCV alliances (Sawyer et al. 2009) observed during the reconnaissance survey included California sagebrush scrub.	Remove dead and stressed pines and acacia stands. Remove French broom.	Found only in Serpentine Prairie Ridge treatment area. Treatment will be assessed to determine whether habitats on site meet the membership criteria of a sensitive natural community before treatment per the requirements of SPR BIO-3 (Table 4.5-3), and if sensitive natural communities are present, treatment will proceed with implementation of Mitigation Measure BIO-3a. Treatment within coastal sage scrub will be consistent with SPR BIO-5 specifications.

Vegetation Type (EBRPD Habitat Types)	Vegetation Type in CLN and CWHR Classification System[1]	Veg Type Presence in Treatment Types	Vegetation Type Description	General Objectives	Other Considerations
Eucalyptus forest	Eucalyptus (CLN) Eucalyptus (CWHR)	ER, WUI	Dense planted stands of blue gum eucalyptus with some occurrences of red gum eucalyptus.	Remove dead and extremely stressed stems/trees. Target eucalyptus trees on ridgelines for removal, as they are more prone to cast embers long distances. Eucalyptus trees with one to two stems should be prioritized for retention. Thin eucalyptus stands to reduce overall fuel load. Thin to a spacing of approximately 20–35 feet. Convert mature eucalyptus forests to a more fire-safe vegetation type.	Fuel reduction efforts should include creating vertical separation between the tree canopy and surface fuels below (including young trees) and removing dead materials and decreasing duff layer. Avoid creating second growth eucalyptus forests by conducting successive treatments until fire hazards are sufficiently reduced or other desired plant communities are established. Control invasive nonnative species in the understory and encourage establishment of native grassland plants as part of the treatment prescription. Protect large native trees or shrubs.
Nonnative coniferous forest	Nonnative/ornamental conifer, mixed conifer-pine (CLN) Closed-cone pine-cypress, montane hardwood (CWHR)	ER, FB, WUI	In the project area, this vegetation type is typically composed of planted Monterey pine.	Remove dead and extremely stressed trees. Spacing of retained mature trees should be 25–30 feet depending on retained amounts of other species. Encourage the conversion of Monterey pine forest to more native fire-safe vegetation types such as oak-bay woodland or redwood forest where feasible. Create a separation between groupings of trees to inhibit rapid fire spread from crown to crown. Increase spacing or entirely remove stands on ridge tops or near the WUI to reduce fire spread through spotting. Thin stands to reduce overall rates of fuel production.	Fuel reduction efforts should include creating vertical separation between the tree canopy and surface fuels below (including shorter trees), removing dead materials, and decreasing the underlying duff layer. In thinning treatments, biomass from pine left on-site must be chipped or mulched, or de-barked to reduce material in which pests (such as bark beetles) feed and grow to reproductive age.

Vegetation Type (EBRPD Habitat Types)	Vegetation Type in CLN and CWHR Classification System[1]	Veg Type Presence in Treatment Types	Vegetation Type Description	General Objectives	Other Considerations
Oak-bay woodland	Coast live oak, blue oak (CLN) Coastal oak woodland (CWHR)	ER, FB, WUI	Dense to moderate stands of coast live oak, California bay, and other oak species, often with no single dominant species.	Treatment of oak-bay woodlands should be limited to understory thinning of scrub vegetation, thinning dense stands of young native trees and saplings, removing invasive nonnative vegetation, and replanting these areas with native vegetation. Encourage a dense, healthy canopy to shade out more flammable and invasive understory species. Encourage and maintain canopy closure of emerging tree species. Leave all trees greater than 8 inches diameter at breast height (dbh). Leave one-third of the trees less than 8 inches dbh to retain a range of size categories. Remove all but the most mature and healthy eucalyptus specimens, and all *Acacia*.	Fuel reduction efforts should include reducing understory fuels, creating vertical separation between the tree canopy and surface fuels, removing dead materials in the understory and canopy, such as dead branches still attached to live trees, to reduce the available fuel load and increase vertical separation. A treatment cycle from 3 to 10 years in length should be anticipated depending on stand age structure and composition. Implement Best Management Practices (BMPs) for treatments in *Phytophthora*-infected oak-bay woodlands to minimize the risk of spreading this pathogen to uninfected areas.
Redwood forest	Redwood, redwood – Douglas fir (CLN) Redwood forest (CWHR)	ER	Forest characterized by at least 50 percent redwood tree canopy cover, with other conifer and hardwood species. The herbaceous understory layer varies in density and composition.	Vegetation management actions should encourage and protect this vegetation type. Encourage a dense, healthy canopy to shade out flammable understory plants and invasive species. Encourage a closed canopy where feasible. Minimize understory competition by removing basal sprouts. Maintain and encourage redwood tree growth, and remove or control invasive or nonnative species.	Treatment cycles in redwood forests are generally 10–15 years, as understories in these forests tend to develop slowly and large amounts of dead material are required to trigger required treatment. Redwood forest with closed canopy should be managed similarly to closed canopy oak woodland. Refer to resource protection BMPs for historic old growth redwood stumps.

Vegetation Type (EBRPD Habitat Types)	Vegetation Type in CLN and CWHR Classification System[1]	Veg Type Presence in Treatment Types	Vegetation Type Description	General Objectives	Other Considerations
Riparian woodland	Riparian mixed hardwood (CLN) Valley foothill riparian, coastal oak woodland (CWHR)	ER, FB, WUI	Dense to moderate stands of forest surrounding riparian areas. Tree canopy is typically composed of willow, cottonwood, white alder, and red alder, with no single dominant species.	Only in rare circumstances would riparian forest be identified for treatment; such circumstances may include the build-up of suspended dead material from high water flows (i.e., "jackpots") or the development of dead stalks within the forest. Encourage a dense, healthy canopy to shade out more flammable understory plants and invasive species. Minimize maintenance activities and conduct treatments only where significant understory accumulation occurs. Restrict vegetation treatment activities to along the edges of riparian woodlands, where feasible.	Anticipate a 10- to 15- year treatment cycle, although additional treatments may be required following storms or other events that create large amounts of dead material in riparian woodlands. Protect adjacent water bodies from sedimentation or pollution that may occur as a result of treatment actions or due to the use of mechanical treatment techniques. Pre-treatment surveys should be conducted by resource professionals to ensure litter removal or other activities do not adversely affect special-status species such as the San Francisco dusky-footed woodrat. BMPs should be employed to avoid indirect impacts ono aquatic habitat and associated special-status species (specifically steelhead/rainbow trout) from erosion, sedimentation, or other forms of pollution.
Closed-cone pine cypress	Monterey cypress, non-native/ornamental conifer (CLN) Closed-cone pine cypress (CWHR)	ER	Dense forests with pines, firs, and other conifers with secondary hardwoods and shrub understory.	Thin eucalyptus and pines and remove shrubs near emerging oak-bay woodlands; remove those trees that are smaller, unhealthy or have multiple trunks. Emphasize surface fuel reduction under retained trees, prune trees to 8-foot height in thinned areas. Remove French broom, prune up low hanging branches, and remove dead and downed material	Found only in Sibley South and French Trail
Montane hardwood	Coastal mixed hardwood (CLN) Montane hardwood-conifer (CWHR)	FB	A diverse array of oaks, madrone, buckeye, bay, and other hardwoods with scattered conifers and dense canopy cover; composition varies substantially with local climate.	Retain montane hardwood habitat cover where present. Remove dead and dying trees throughout, leaving snags where feasible. Treatment should be designed to limit shrub encroachment and remove invasive species. Remove French broom.	Found only in the Ten Hills treatment area.

Vegetation Type (EBRPD Habitat Types)	Vegetation Type in CLN and CWHR Classification System[1]	Veg Type Presence in Treatment Types	Vegetation Type Description	General Objectives	Other Considerations
Serpentine hardwoods	Coastal mixed hardwood (CLN) Montane hardwood-conifer (CWHR)	ER	Montane hardwood species (oak, madrone, buckeye, bay) growing on serpentine rock.	Remove dead and stressed pines and acacia stands. Use manual treatment or prescribed herbivory (i.e., goats) to create and maintain open areas, and to remove understory shrubs for oak woodlands. Remove French broom. Create defensible space adjacent to private land according to performance standards	Found only in Serpentine Prairie Ridge treatment area.

[1] This column provides a crosswalk between East Bay Regional Park District's (EBRPD) habitat categories utilized in Table B-1 with both the Conservation Lands Network (CLN) vegetation types, which are publicly available, and the California Wildlife Habitat Relationships (CWHR) vegetation types described in the PSA/Addendum. The CLN vegetation mapping is primarily based on the US Forest Service Existing Vegetation (Eveg) map, which uses the *Classification and Assessment with Landsat of Visible Ecological Groupings* (CALVEG) vegetation classification system to describe habitat. To enhance the base vegetation mapping, CLN modifies vegetation categories and adds rare plants and vegetation types from other data sources (Bay Area Open Space Council 2019). The CWHR classification system was utilized to describe vegetation in the treatment areas (Table 4.5-1, Section 4.4, "Biological Resources") because it was determined during the reconnaissance survey (see Section 4.4, "Biological Resources") to provide the best available data for the treatment areas (Sawyer et al, 2009).

Sources: Bay Area Open Space Council 2019, data provided by EBRPD 2022; compiled by Ascent Environmental in 2022

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Attachment C

Biological Resources

Special-Status Plant Species Known to Occur in the Vicinity of the Treatment Areas and Their Potential for Occurrence in the Treatment Areas

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Adobe sanicle *Sanicula maritima*	—	SR	1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 100–790 feet in elevation. Blooms February–May. Perennial.	*Not expected to occur.* The project area is outside of the species geographical range.
Alkali milk-vetch *Astragalus tener* var. *tener*	—	—	1B.2	Alkali flats and playas, alkaline vernal pools, or seasonally flooded, alkaline clay soils in valley and foothill grassland. 0–550 feet in elevation. Blooms March–June. Annual.	*Not expected to occur.* No wetlands or vernal pools are present, and the project area is outside of the species' geographical range.
Antioch Dunes evening-primrose *Oenothera deltoides* ssp. *howellii*	FE	SE	1B.1	Remnant river bluffs and sand dunes east of Antioch. 0–100 feet in elevation. Blooms March–September. Perennial.	*Not expected to occur.* No sand dunes are present in the project area.
Beach layia *Layia carnosa*	FE	SE	1B.1	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0–100 feet in elevation. Blooms March–July. Annual.	*Not expected to occur.* No coastal dune habitat is present in the project area.
Bent-flowered fiddleneck *Amsinckia lunaris*	—	—	1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 10–2,600 feet in elevation. Blooms March–June. Annual.	*Known to occur.* This species is documented in Tilden Regional Park near Wildcat Canyon Road, and on EBMUD property within one mile of the project area (CNDDB 2022).
Big tarplant *Blepharizonia plumosa*	—	—	1B.1	Dry hills and plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 100–1660 feet in elevation. Blooms July–October. Annual.	*May occur.* Valley and foothill grasslands potentially suitable for this species are present within the project area.
Big-scale balsamroot *Balsamorhiza macrolepis*	—	—	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Usually (65 to 75 percent of occurrences) on serpentine. 115–4810 feet in elevation. Blooms March–June. Perennial.	*May occur*. Suitable chaparral, woodland, and grassland habitat is present within the project area. This species is a strong serpentine indicator, so is most likely to be encountered at Serpentine Prairie Ridge, where soils may be serpentine-derived.
Blue coast gilia *Gilia capitata ssp. chamissonis*	—	—	1B.1	Coastal dunes, coastal scrub. 10–660 feet in elevation. Blooms April–July. Annual.	*Not expected to occur.* No suitable coastal dunes habitat is present, and project area is outside of known species' range.
Bolander's water-hemlock *Cicuta maculata var. bolanderi*	—	—	2B.1	Marshes and swamps, fresh or brackish water. 0–660 feet in elevation. Blooms July–September. Perennial.	*May occur.* While no salt marsh habitat is present in the project area, freshwater marsh habitat along the margins of ponds and streams may provide habitat suitable for this species.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Brewer's western flax *Hesperolinon breweri*	—	—	1B.2	Often in rocky serpentine soil in serpentine chaparral and serpentine grassland. 640–2905 feet in elevation. Blooms May–July. Annual.	*May occur.* Chaparral, woodland, and grassland habitat potentially suitable for this species is present within the project area. This species is a strong serpentine indicator, so is most likely to be encountered at Serpentine Prairie Ridge, where soils may be serpentine-derived.
Bristly sedge *Carex comosa*	—	—	2B.1	Wetland. Lake margins, wet places; site below sea level is on a Delta Island. -20–5315 feet in elevation. Blooms May–September. Geophyte.	*Not expected to occur.* No suitable lakeside habitat is present. Wetlands and marshes will be avoided by project activities.
Brittlescale *Atriplex depressa*	—	—	1B.2	Endemic to the central valley. One occurrence in Milpitas is within three miles of the project area. Alkaline clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, or vernal pools; occasionally found in riparian marshes. 0–1070 feet in elevation. Blooms April–October. Annual.	*Not expected to occur.* Suitable meadows and grasslands with alkaline soils may be present in grassland areas throughout the project area, but project is outside of the species' known range.
California alkali grass *Puccinellia simplex*	—	—	1B.2	Meadows and seeps, chenopod scrub, saline flats and mineral springs at elevations less than 3000 feet in elevation. Blooms March–May. Annual.	*Not expected to occur.* Typical saline flat and grassland/chenopod scrub habitat is not present in the project area, and project is outside of the species' known range.
California seablite *Suaeda californica*	FE	—	1B.1	Salt marsh, coastal wetland at 0–20 feet in elevation. Blooms July–October. Perennial.	*Not expected to occur.* Suitable coastal salt marsh/wetland habitat is not present in the project area.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	—	—	1B.1	Valley and foothill grassland in alkaline clay soils. 0–1180 feet in elevation. Blooms March–April. Annual.	*May occur.* Grassland habitat potentially suitable for this species is present in the project area and the project is within species' known range. Alo, Cropley, Diablo, Danville, and Conejo soils are mapped in small patches throughout the project area, and these soil types are weakly alkaline.
Carquinez goldenbush *Isocoma arguta*	—	—	1B.1	Valley and foothill grassland on low benches near drainages and on tops and sides of mounds in swale habitat. 0–165 feet in elevation. Blooms August–December. Perennial.	*Not expected to occur.* All known occurrences of this species are documented north of the Suisun Bay, and suitable low elevation habitat is minimal in the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Chaparral harebell *Campanula exigua*	—	—	1B.2	Rocky sites, usually on serpentine in chaparral. 900–4100 feet in elevation. Blooms May–June. Annual.	*May occur.* While the only documented occurrences are outside of the project area along the Diablo foothills (CNDDB 2022), this species is a broad endemic to strong indicator of serpentine soils and suitable serpentine chaparral is present in the Serpentine Prairie Ridge treatment area. No other project areas provide suitable serpentine soil habitat (NRCS 2019).
Chaparral ragwort *Senecio aphanactis*	—	—	2B.2	Drying alkaline flats. 70–2805 feet in elevation. Blooms January–April. Annual.	*Not expected to occur.* No occurrences are documented in the project area, and no alkaline flats are present in the project area.
Choris' popcornflower *Plagiobothrys chorisianus var. chorisianus*	—	—	1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 50–525 feet in elevation. Blooms March–June. Annual.	*Not expected to occur.* The only occurrence within the vicinity of the project area (in coastal West Oakland) is documented as presumed extirpated, and no other occurrences are located within the vicinity of the project. This species' range is restricted to coastal areas.
Coastal bluff morning-glory *Calystegia purpurata ssp. saxicola*	—	—	1B.2	Coastal dunes, coastal scrub, coastal bluff scrub, north coast coniferous forest. 30–345 feet in elevation. Blooms April–September. Perennial.	*Not expected to occur.* No suitable coastal habitat is present in the project area.
Coastal triquetrella *Triquetrella californica*	—	—	1B.2	Coastal bluff scrub, coastal scrub. On gravel or thin soil over outcrops. 30–330 feet in elevation. Perennial.	*Not expected to occur.* No suitable coastal habitat is present in the project area.
Congdon's tarplant *Centromadia parryi ssp. congdonii*	—	—	1B.1	Alkaline soils, sometimes described as heavy white clay. 0–755 feet in elevation. Blooms May–October. Annual.	*May occur.* Habitat potentially suitable for Congdon's tarplant is present in scattered patches of moderately alkaline soils in the project area within grasslands (NRCS 2019).
Congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	—	—	1B.2	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 70–2130 feet in elevation. Blooms April–November. Annual.	*May occur.* Habitat suitable for congested-headed hayfield tarplant is present in the project area along grasslands and disturbed areas.
Contra Costa goldfields *Lasthenia conjugens*	FE	—	1B.1	Typically found in vernal pools, sometimes found in swales, low depressions, in open grassy areas. 0–1480 feet in elevation. Blooms March–June. Annual.	*May occur.* Habitat suitable for Contra Costa goldfields is present in the project area within low swales and seasonal wetlands in grassland habitat.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Contra Costa manzanita *Arctostaphylos manzanita* ssp. *laevigata*	—	—	1B.2	Chaparral. Rocky slopes. 490–2000 feet in elevation. Blooms January–March. Perennial.	*Not expected to occur.* This species is generally restricted to the Mount Diablo ranges in Contra Costa and Alameda counties. Therefore, the project is outside of the species expected range and is not expected to be encountered.
Dark-eyed gilia *Gilia millefoliata*	—	—	1B.2	Coastal dunes. 0–200 feet in elevation. Blooms April–July. Annual.	*Not expected to occur.* One 1863 historic occurrence in the CNDDB is mapped as a "best guess" to encompass all coastal areas of Oakland, and states that the species is presumed extirpated from the region. No suitable coastal habitat is present in the project area.
Delta mudwort *Limosella australis*	—	—	2B.1	Wetland. Riparian scrub, marshes and swamps. Usually on mud banks of the Delta in marshy or scrubby riparian associations; often with *Lilaeopsis masonii.* 0–20 feet in elevation. Blooms May–August. Perennial.	*Not expected to occur.* Riparian areas including scrub, marshes, and wetlands will be excluded from the project design.
Delta tule pea *Lathyrus jepsonii var. jepsonii*	—	—	1B.2	Coastal, estuarine marshes. 0–20 feet in elevation. Blooms May–July. Perennial.	*Not expected to occur.* Habitat suitable for delta tule pea (brackish marshes and sloughs) is not present in the project area.
Diablo helianthella *Helianthella castanea*	—	—	1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 150–3510 feet in elevation. Blooms March–June. Perennial.	*Known to occur.* Six occurrences of this species are documented near Tilden Regional Park (CNDDB 2022). Habitat suitable for Diablo helianthella is present throughout the project area, and this species is known to occur in the Tilden South treatment area.
Fragrant fritillary *Fritillaria liliacea*	—	—	1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine, various soils reported though usually on clay, in grassland. 10–1315 feet in elevation. Blooms February–April. Geophyte.	*May occur.* This species has been documented in Tilden Regional Park near the proposed treatment areas (CNDDB 2022). This species may be extirpated from the area, and the occurrence in the CNDDB states that this record needs fieldwork. Habitat suitable for fragrant fritillary is present throughout the project area
Franciscan thistle *Cirsium andrewsii*	—	—	1B.2	Ultramafic. Coastal bluff scrub, broadleaved upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps. 0–495 feet in elevation. Blooms March–July. Perennial.	*Known to occur.* This species has been documented as recently as 2006 in Tilden Regional Park within 300 feet of the South Tilden treatment area. This occurrence is noted to be threatened by lack of grazing and invasive plant impacts (CNDDB 2022).

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Hairless popcornflower *Plagiobothrys glaber*	—	—	1A	Coastal salt marshes and alkaline meadows. 20–590 feet in elevation. Blooms March–May. Annual.	*Not expected to occur.* No suitable salt marsh or alkaline meadow habitat is present, and this species is presumed extinct.
Hall's bush-mallow *Malacothamnus hallii*	—	—	1B.2	Chaparral, coastal scrub. Some populations on serpentine. 30–2395 feet in elevation. Blooms May–September. Perennial.	*May occur.* Although this species has not been documented within the project area, occurrences are documented within the project vicinity and habitat suitable for Hall's brush-mallow is present in chaparral habitat throughout site (CNDDB 2022).
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	—	—	1B.1	Alkaline depressions, vernal pools, seasonal wetlands, roadside ditches, and other wet places near the coast; occasionally in alkaline soils. 0–165 feet in elevation. Blooms July. Annual/Perennial.	*May occur.* Although no occurrences of this species are documented in the vicinity of the project area, freshwater wetland, roadside ditches, and other wet areas in the project area could potentially provide habitat suitable for this species.
Hospital Canyon larkspur *Delphinium californicum* ssp. *interius*	—	—	1B.2	General slopes in open woodlands along the eastern side of the coast ranges. 640–3595 feet in elevation. Blooms April–June. Perennial.	*May occur.* Habitat suitable for hospital canyon larkspur is present in open woodlands throughout the project.
Jepson's coyote-thistle *Eryngium jepsonii*	—	—	1B.2	Vernal pools and hydric clay soils in valley and foothill grassland. Clay. 10–985 feet in elevation. Blooms April–August. Perennial.	*May occur.* Habitat suitable for Jepson's coyote-thistle may be present in freshwater marsh habitat. Occurrences have been documented nearby at San Pablo Reservoir, just outside of the boundary of Sibley Volcanic Preserve in Orinda, and in Lake Chabot Regional Park (CNDDB 2022).
Kellogg's horkelia *Horkelia cuneata var. sericea*	—	—	1B.1	Old dunes, coastal sandhills; openings. 15–705 feet in elevation. Blooms April–September. Perennial.	*Not expected to occur.* Suitable coastal scrub on old dunes habitat is not present in the project area. The species is typically restricted to more coastal areas than those within the project area.
Large-flowered fiddleneck *Amsinckia grandiflora*	FE	SE	1B.1	Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. 900–1805 feet in elevation. Blooms April–May. Annual.	*May occur.* Habitat potentially suitable for this species is present throughout forested and grassland project sites.
Lesser saltscale *Atriplex minuscula*	—	—	1B.1	Found in alkali sink and grassland in sandy, alkaline soils. 0–740 feet in elevation. Blooms May–October. Annual.	*Not expected to occur.* Suitable alkali sink habitat is not present in the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Loma Prieta hoita *Hoita strobilina*	—	—	1B.1	Strongly associated with serpentine soils. 200–3200 feet in elevation. Blooms May–July. Perennial.	*May occur.* One historic 1865 occurrence is documented in a nonspecific area marked as "Oakland Hills" and is noted to be possibly extirpated due to development (CNDDB 2022). This species is a strong serpentine indicator, so is most likely to be encountered at Serpentine Prairie Ridge, where soils may be serpentine-derived (NRCS 2019).
Long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*	—	—	1B.2	Marshes and swamps, meadows, and seeps. Alkaline. 0–840 feet in elevation. Blooms February–May. Perennial.	*May occur*. Habitat suitable for long-styled sand-spurrey is present in pond and wet meadow habitat at Cow Hollow treatment area, and potentially along Wildcat Creek in Tilden Regional Park
Marin western flax *Hesperolinon congestum*	FT	ST	1B.1	In serpentine barrens and in serpentine grassland and chaparral. 200–1215 feet in elevation. Blooms April–July. Annual.	*Not expected to occur.* This species is restricted to Marin County and the San Francisco Peninsula. There is one documented historic (1959) occurrence of this species in Berkeley, which is noted as being grown in a greenhouse on serpentine soil at the University of California, Berkeley (CNDDB 2022).
Mason's lilaeopsis *Lilaeopsis masonii*	—	SR	1B.1	Freshwater and brackish intertidal marshes, stream banks. Tidal zones, in muddy or silty soil formed through river deposition or riverbank erosion. 0–35 feet in elevation. Blooms April–November. Geophyte.	*Not expected to occur.* No suitable tidal habitat is present in the project area.
Minute pocket moss *Fissidens pauperculus*	—	—	1B.2	Redwood. North coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 30–3360 feet in elevation. Blooms. Perennial.	*May occur.* One occurrence is documented within 500 feet of the project area in Tilden Regional Park. This occurrence from 1994 is mapped along Strawberry Canyon above the University of California, Berkeley Botanical gardens.
Most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	—	—	1B.2	Serpentine outcrops, on ridges and slopes. 310–3280 feet in elevation. Blooms April–September. Annual.	*May occur.* There is one historic (1893) occurrence of this species in Claremont Canyon near the Sibley Volcanic Regional Preserve treatment areas (CNDDB 2022). Habitat suitable for most beautiful jewelflower is present at Serpentine Prairie Ridge, where soils may be serpentine-derived.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Mt. Diablo buckwheat *Eriogonum truncatum*	—	—	1B.1	Chaparral, coastal scrub, valley and foothill grassland. Dry, exposed clay or sandy substrates. 345–1150 feet in elevation. Blooms April–September. Annual.	*Not expected to occur.* This species was believed to be extinct since 1936 until one population was rediscovered on Mount Diablo in 2005 (CNDDB 2022); no historic populations are documented outside of the Diablo Range.
Mt. Diablo fairy-lantern *Calochortus pulchellus*	—	—	1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 100–3000 feet in elevation. Blooms April–June. Geophyte.	*May occur.* Habitat suitable for Mt. Diablo fairy-lantern is present throughout the project area in riparian woodland, grassland, and chaparral, and occurrences are documented near Anthony Chabot Regional Park and Tilden Regional Park (CNDDB 2022).
Mt. Diablo jewelflower *Streptanthus hispidus*	—	—	1B.3	Valley and foothill grassland, chaparral. Talus or rocky outcrops. 800–3200 feet in elevation. Blooms March–June. Annual.	*Not expected to occur.* This species is endemic to Mount Diablo and the Diablo foothills.
Mt. Diablo manzanita *Arctostaphylos auriculata*	—	—	1B.3	In canyons and on slopes. On sandstone. 590–1850 feet in elevation. Blooms January–March. Perennial.	*Not expected to occur.* This species is endemic to Mount Diablo and the Diablo foothills.
Mt. Diablo phacelia *Phacelia phacelioides*	—	—	1B.2	Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. 1985–4415 feet in elevation. Blooms April–May. Annual.	*May occur.* Habitat suitable for Mt. Diablo phacelia is present throughout the project area in rocky outcroppings.
Napa false indigo *Amorpha californica var. napensis*	—	—	1B.2	Broadleafed upland forest, chaparral, cismontane woodland. Openings in forest or woodland or in chaparral. 100–2410 feet in elevation. Blooms April–July. Perennial.	*Not expected to occur.* This species is found north of the San Francisco Bay and is not expected to occur in the project area.
Oregon meconella *Meconella oregana*	—	—	1B.1	Coastal prairie, coastal scrub. Open, moist places. 200–2100 feet in elevation. Blooms March–April. Annual.	*May occur.* Habitat suitable for Oregon meconella is present in wet grassland and scrub habitat throughout the project area. One occurrence is documented near the French Trail and Serpentine Ridge Prairie treatment areas (CNDDB 2022).
Oregon polemonium *Polemonium carneum*	—	—	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0–6000 feet in elevation. Blooms April–September. Perennial.	*May occur.* There are five historic (i.e., 1939 or earlier) occurrences of this species in the vicinity of the project area; the closest of which are in Fremont (i.e., 13 miles south of the project area) and Marin (i.e., 14 miles west) (CNDDB 2022). Despite distance from and barriers between historic occurrences and age of these occurrences, habitat suitable for this species is present in grassland, scrubland, and forested habitat throughout the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Oval-leaved viburnum *Viburnum ellipticum*	—	—	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 705–4595 feet in elevation. Blooms May–June. Perennial.	*May occur.* The closest occurrences are in Briones regional park (7 miles east of the project area), and near Las Trampas Regional Wilderness (6 miles east of the project area) (CNDDB 2022). Habitat suitable for oval-leaved viburnum is present in chaparral and woodland throughout the project area where elevations exceed 700 feet (CCH 2022).
Pallid manzanita *Arctostaphylos pallida*	FT	SE	1B.1	Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. 590–1510 feet in elevation. Blooms December–March. Perennial.	*Known to occur.* Several populations of pallid manzanita are documented and closely monitored by EBRPD (CNDDB 2022). One transplant is present in Tilden Regional Park near Wildcat Canyon Road (EBRPD 2009). Habitat suitable for pallid manzanita is present in chaparral habitat in the project area.
Palmate-bracted salty bird's-beak *Chloropyron palmatum*	FE	SE	1B.1	Usually on Pescadero silty clay which is alkaline, with *Distichlis*, *Frankenia*, etc. 20–510 feet in elevation. Blooms May–October. Annual.	*Not expected to occur.* The project is outside of the known range of this species, which occurs in the Sacramento or San Joaquin Valley. No Pescadero silty clay was mapped in the project area (NRCS 2019).
Point Reyes salty bird's-beak *Chloropyron maritimum* ssp. *palustre*	—	—	1B.2	Coastal salt marsh. Usually in coastal salt marsh with *Salicornia*, *Distichlis*, *Jaumea*, *Spartina*, etc. 0–380 feet in elevation. Blooms June–October. Annual.	*Not expected to occur.* No suitable coastal salt marsh habitat is present in the project area.
Presidio clarkia *Clarkia franciscana*	FE	SE	1B.1	Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. 70–1000 feet in elevation. Blooms May–July. Annual.	*May occur.* Habitat suitable for presidio clarkia (serpentine soil) is present in Serpentine Ridge Prairie (NRCS 2019).
Prostrate vernal pool navarretia *Navarretia prostrata*	—	—	1B.2	Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. 10–4050 feet in elevation. Blooms April–July. Annual.	*May occur.* Habitat suitable for prostrate vernal pool navarretia is present in grassland and wet meadow habitat present throughout project area, as alkaline soils are mapped in the project area (NRCS 2019).
Robust spineflower *Chorizanthe robusta* var. *robusta*	FE	—	1B.1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 30–800 feet in elevation. Blooms April–September. Annual.	*Not expected to occur.* This species is present in Santa Cruz and Monterey Counties but is thought to be extirpated from the San Francisco Bay Area California Floristic Province, which includes Alameda and Contra Costa Counties.
Rose leptosiphon *Leptosiphon rosaceus*	—	—	1B.1	Coastal bluff scrub. 30–460 feet in elevation. Blooms April–July. Annual.	*Not expected to occur.* No suitable coastal bluff habitat occurs in the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Saline clover *Trifolium hydrophilum*	—	—	1B.2	Salt marshes, open areas in alkaline soils. 0–980 feet in elevation. Blooms April–June. Annual.	*May occur.* Although no suitable salt marsh habitat is present, open alkaline soil areas could potentially be present in the project area. Habitat suitable for saline clover may be present in treatment areas with slightly alkaline soils, which are mapped in the project area (NRCS 2019).
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	—	—	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Closely related to *Chorizanthe pungens*. Sandy soil on terraces and slopes. 10–705 feet in elevation. Blooms April–July. Annual.	*Not expected to occur.* No suitable coastal dune habitat occurs in the project area.
San Francisco popcornflower *Plagiobothrys diffusus*	—	SE	1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 150–1180 feet in elevation. Blooms March–June. Annual.	*May occur.* Habitat suitable for San Francisco popcorn flower is present in annual grassland throughout the project area.
San Joaquin spearscale *Extriplex joaquinana*	—	—	1B.2	In alkaline clay soils. Typically, in alkali grassland or meadow habitats, or on the edges of alkali sink scrub. Often with *Distichlis spicata*, *Frankenia*, and other alkali indicator species. 3–2,740 feet in elevation. Blooms April–October. Annual..	*May occur.* Habitat suitable for this species may be present in alkali soil areas in the project area. While uncommon, some alkali soils are mapped in the project area (Alo, Cropley, Diablo, Danville, and Conejo soils) (NRCS 2019). If treatment areas contain alkali soil, these areas have the potential to provide habitat suitable for this species.
Santa Cruz tarplant *Holocarpha macradenia*	FT	SE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 30–720 feet in elevation. Blooms June–October. Annual.	*Known to occur.* Habitat suitable for this species is present in coastal scrub and annual grassland throughout the project area. One population has been successfully planted at Havey Canyon Trail north of the project area (CNDDB 2022).
Soft salty bird's-beak *Chloropyron molle ssp. molle*	FE	SR	1B.2	In coastal salt marsh with *Distichlis*, *Salicornia*, *Frankenia*, etc. 0–20 feet in elevation. Blooms July–November. Annual.	*Not expected to occur.* No suitable coastal salt marsh habitat is present in the project area and the project area is outside of the known elevation range of this species.
Suisun Marsh aster *Symphyotrichum lentum*	—	—	1B.2	Marshes and swamps (brackish and freshwater). Most often seen along sloughs with *Phragmites*, *Scirpus*, blackberry, *Typha*, etc. 0–100 feet in elevation. Blooms May–November. Geophyte.	*Not expected to occur.* This species is restricted to the Suisun Marsh and Sacramento-San Joaquin River Delta and the project area is outside of the known elevation range of this species.
Tiburon buckwheat *Eriogonum luteolum var. caninum*	—	—	1B.2	Serpentine soils; sandy to gravelly sites. 0–2300 feet in elevation. Blooms May–September. Annual.	*May occur.* Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Tiburon jewelflower *Streptanthus glandulosus* ssp. *niger*	FE	SE	1B.1	Valley and foothill grassland. Shallow, rocky serpentine slopes. 100–495 feet in elevation. Blooms May–June. Annual.	*May occur.* Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Tiburon mariposa-lily *Calochortus tiburonensis*	FT	ST	1B.1	Valley and foothill grassland. On open, rocky, slopes in serpentine grassland. 160–495 feet in elevation. Blooms March–June. Geophyte.	*May occur.* Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Tiburon paintbrush *Castilleja affinis var. neglecta*	FE	ST	1B.2	Valley and foothill grassland. Rocky serpentine sites. 395–1310 feet in elevation. Blooms April–June. Perennial.	*May occur.* Habitat potentially suitable for this species is present in the serpentine soils within the Serpentine Ridge Prairie treatment area.
Two-fork clover *Trifolium amoenum*	FE	—	1B.1	Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff face. 20–1020 feet in elevation. Blooms April–June. Annual.	*May occur.* Habitat potentially suitable for this species is present in grassland throughout the project area and at the serpentine soils within the Serpentine Ridge Prairie treatment area.
Water star-grass *Heteranthera dubia*	—	—	2B.2	Marshes and swamps. Alkaline, still, or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 50–4955 feet in elevation. Blooms July–October. Perennial.	*Not expected to occur.* Although some habitat marginally suitable for water star-grass may be present in the project area, the project is outside of the known range for this species. One historic (1879) record is documented in north San Francisco. Today, this species is known only north of the San Francisco Bay (CNDDB 2022).
Western leatherwood *Dirca occidentalis*	—	—	1B.2	On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 80–1395 feet in elevation. Blooms January–March. Perennial.	*Known to occur.* There are several known occurrences within and just outside of Tilden Regional Park and Huckleberry Botanic Regional Park (CNDDB 2022, EBRPD 2009). This species was observed during SPR BIO-1 reconnaissance survey upslope from the East Bay Regional Park District Fire Department Station parking area, at the southern entrance to Vollmer Peak Trail.
White-rayed pentachaeta *Pentachaeta bellidiflora*	FE	SE	1B.1	Valley and foothill grassland, cismontane woodland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. 115–2000 feet in elevation. Blooms March–May. Annual.	*Not expected to occur.* Although habitat suitable for white-rayed pentachaeta is present in the project area, the treatment areas fall outside of this species' known range. This species has been documented in Marin County and along the San Francisco Peninsula, but no occurrences have been documented within the project area or within Contra Costa or Alameda counties (CNDDB 2022).

Species	Listing Status[1] Federal	Listing Status[1] State	CRPR	Habitat	Potential for Occurrence[2]
Woodland woollythreads *Monolopia gracilens*	—	—	1B.2	Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 330–3940 feet in elevation. Blooms March–July. Annual.	*May occur.* Habitat potentially suitable for this species is present in grassland throughout the project area and at the serpentine soils within the Serpentine Ridge Prairie treatment area.

Notes: CRPR = California Rare Plant Rank; CEQA = California Environmental Quality Act; ESA = Endangered Species Act; NPPA = Native Plant Protection Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected by ESA)

FT Federally Listed as Threatened (legally protected by ESA)

State:

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)

California Rare Plant Ranks (CRPR):

1A Plant species that are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

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)

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

2 Potential for Occurrence Definitions

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

May occur: Suitable habitat is available and there have been nearby recorded occurrences of the species.

Known to occur: The species has been observed within the treatment areas.

Sources: CCH 2022, CNPS 2022, CNDDB 2022, NRCS 2019, Sawyer 2009.

Special-Status Wildlife Species Known to Occur in the Vicinity of the Treatment Areas and Their Potential for Occurrence in the Treatment Areas

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Amphibians and Reptiles				
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT	ST	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Found primarily on south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	*Known to occur*. Reptile trapping studies in portions of the project area have documented many years of occupancy (SBI 2021). Occurrences of this species have been documented in Tilden, Sibley, Redwood, and Anthony Chabot regional parks, and recent trapping efforts have found positive detections in the Tilden South treatment area (CNDDB 2022; SBI 2021). High-quality core habitat use areas (i.e., habitat suitable for Alameda whipsnake occupancy, breeding, and foraging) is present in coastal scrub and coyote brush scrub at all project areas, especially where rocky outcrops and mammal burrows are present. Adjacent oak woodlands, grasslands, or ruderal habitat may provide suitable foraging and refugia habitat.
California red-legged frog *Rana draytonii*	FT	SSC	Aquatic, artificial flowing waters, artificial standing waters, freshwater marsh, marsh & swamp, riparian forest, riparian scrub, riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, south coast flowing waters. Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	*May occur*. No occupied breeding habitat is known to be present in the project area; however, suitable breeding, upland, dispersal, and foraging habitat is present throughout the project area. There are several documented occurrences of California red-legged frog within 1 mile of the project area, including in Wildcat Canyon Creek, San Pablo Reservoir, upland in the Sibley Volcanic Preserve, the San Leandro Creek, and north of the Cow Hollow treatment area (CNDDB 2022).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
California tiger salamander - central California DPS *Ambystoma californiense* pop. 1	FT	ST	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding. California tiger salamander area known to disperse up to 1.24 miles from aquatic habitat for foraging and dispersal (USFWS 2003).	*Not expected to occur.* No occurrences of California tiger salamander have been documented in the East Bay Hills (CNDDB 2022). One historic (1886) occurrence was documented 8 miles from the treatment areas on the island of Alameda, and the species is currently thought to be extirpated from this portion of their range (CNDDB 2022). Extant populations in Mount Diablo and its foothills are divided from the project area by significant barriers including I-680, SR 24, I-580, and extensive development. The project area contains suitable upland refugia habitat and scattered ponds which could be suitable for breeding and may have supported California tiger salamander historically. However, no known populations are documented within a feasible dispersal distance (1.24 miles; USFWS 2003) and the species is not expected to occur in the vicinity of the project area. There are documented unverified occurrences of this species as close as Las Trampas Regional Wilderness and Briones Regional Park; however, California tiger salamanders are not known to occur on the west side of San Pablo Dam Road or Bollinger Canyon Road (iNaturalist 2022).
Coast horned lizard *Phrynosoma blainvillii*	—	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	*Not expected to occur.* The project area is outside of the species historic and current range; although coast horned lizard is known in Alameda and Contra Costa counties, these populations are restricted to the Mt. Diablo foothills and the San Jose Hills, and no populations have been documented in the East Bay Hills where the project is located (CNDDB 2022, iNaturalist 2022). This may be due to the absence of the native ant species that horned lizard is reliant on as prey.
Foothill yellow-legged frog *Rana boylii*	—	SE SSC	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	*Not expected to occur.* Although the project is within the species' historic range, documented occurrences of foothill yellow-legged frog within three miles of the project area all occurred greater than 50 years ago, and the species is thought to be extirpated from the area. Stream habitat suitable for foothill yellow-legged frogs is not present in the project area.
Northern California legless lizard *Anniella pulchra*	—	SSC	Chaparral. Coastal dunes. Coastal scrub. Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	*Not expected to occur.* Though the project area is within the species' historic range, no occurrences are documented within the vicinity of the project area in the past fifty years, suitable sandy-soil habitat is not present in the project area, and the species' current range is restricted to east of I-680 (entirely outside the project area).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Western pond turtle *Emys marmorata*	—	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	*Known to occur*. This species is known to occur in Jewel Lake and surrounding upland and aquatic habitat at Tilden Regional Park. Portions of Sibley Volcanic Preserve and Anthony Chabot Regional Park may also provide habitat suitable for western pond turtle.
Birds				
Alameda song sparrow *Melospiza melodia pusillula*	—	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	*Not expected to occur.* Suitable coastal salt marsh habitat is not present in the project area.
American peregrine falcon *Falco peregrinus anatum*	FD	SD FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	*May occur*. This species is not known to nest in any treatment area (Van Dam, pers. comm., 2022). However, habitat suitable for nesting and foraging is present in cliffs and hills throughout the project area.
American white pelican *Pelecanus erythrorhynchos*	—	SSC	Colonial nester on large interior lakes. Nests on large lakes, providing safe roosting and breeding places in the form of well-sequestered islets.	*Not expected to occur.* American white pelican may potentially fly overhead en route from inland breeding sites to the coast. However, no suitable breeding habitat for American white pelican is present in the project area.
Ashy storm-petrel *Hydrobates homochroa*	—	SSC	Colonial nester on off-shore islands. Usually nests on driest part of islands. Forages over open ocean. Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.	*Not expected to occur*. No suitable breeding habitat (i.e., coastal islands) is present in the project area.
Bald eagle *Haliaeetus leucocephalus*	FD	SE FP	Lower montane coniferous forest, old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	*May occur.* Suitable nesting habitat for bald eagle is present in Tilden Regional Park near San Pablo Reservoir, along the Upper San Leandro Reservoir in Reinhardt Redwood Regional Park, and along Lake Chabot in Anthony Chabot Regional Park.
Barrow's goldeneye *Bucephala islandica*	—	SSC	Breeds in high central and northern Sierra Nevada mountains, near wooded mountain lakes or large streams. Nest in tree cavities, such as a deserted nest-hole of a pileated woodpecker or flicker; also use nest boxes.	*Not expected to occur*. Barrow's goldeneye may potentially fly overhead during migration. Foraging and overwintering habitat is present in and around the estuaries and creeks. However, the project area is outside of the species' known breeding range, and suitable breeding habitat is not present in the project area.
Black skimmer *Rynchops niger*	—	SSC	Alkali playa, sand shore. Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	*Not expected to occur*. No suitable breeding habitat (gravel bars or sandy beaches) or foraging habitat (aquatic habitat) is present in the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Burrowing owl *Athene cunicularia*	—	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	*May occur*. The treatment areas are within the known burrowing owl breeding and overwintering range. Although no occurrences are documented within the treatment area, 18 occurrences were documented in the vicinity of the project based on the 21-quad search (CNDDB 2022). Open grassy areas within the treatment areas may provide suitable breeding and/or overwintering habitat suitable for burrowing owls.
California least tern *Sternula antillarum browni*	FE	SE FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	*Not expected to occur*. No suitable breeding habitat is present in the project area.
California (Ridgway's) clapper rail *Rallus obsoletus obsoletus*	FE	SE FP	Brackish marsh, marsh and swamp, salt marsh, wetlands. Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottomed sloughs.	*Not expected to occur*. No suitable breeding habitat (i.e., coastal brackish marsh, wetland) is present in the project area.
Golden eagle *Aquila chrysaetos*	—	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	*Known to occur*. Golden eagle has been documented nesting in Sibley Regional Park, and potential habitat is also present throughout the project area (Van Dam 2022, pers. comm). Suitable nesting habitat may potentially be present in large diameter trees within grassland, conifer forest, or woodland forest throughout the project area.
Grasshopper sparrow *Ammodramus savannarum*	—	SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs. Loosely colonial when nesting.	*May occur*. Suitable nesting habitat is present in native grassland habitat throughout the project area. While there are no documented occurrences of this species within the project area (CNDDB 2022; Van Dam 2022, pers. comm), populations documented in Orinda, Oakland, and Castro Valley have the potential to migrate and breed in the project area.
Loggerhead shrike *Lanius ludovicianus*	—	SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and dense shrubs and brush for nesting.	*May occur*. Suitable nesting habitat is present in the project area, and while infrequent, loggerhead shrike is documented year-round in the vicinity (eBird 2022).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Long-eared owl *Asio otus*	—	SSC	Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	*Not expected to occur*. While long-eared owl may use the project area for overwintering or as a migration corridor, the project area is considered the species non-breeding habitat.
Northern spotted owl *Strix occidentalis caurina*	FT	ST SSC	North coast coniferous forest, old growth, redwood. Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris and space under canopy.	*Not expected to occur*. The project area is outside of this species' range.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	—	SSC	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	*Not expected to occur*. No suitable breeding habitat (i.e., marsh and wetland with dense emergent vegetation) is present in the project area.
San Pablo song sparrow *Melospiza melodia samuelis*	—	SSC	Salt marsh. Resident of salt marshes along the north side of San Francisco and San Pablo bays. Inhabits tidal sloughs in the *Salicornia* marshes; nests in *Grindelia* bordering slough channels.	*Not expected to occur*. No suitable breeding habitat (i.e., coastal brackish marsh, wetland) is present in the project area.
Short-eared owl *Asio flammeus*	—	SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	*Not expected to occur*. Although short-eared owl may occasionally fly over the project area en route to overwintering sites, the project area is outside of the species known breeding range, and no suitable breeding habitat is present in the project area.
Song sparrow ("Modesto" population) *Melospiza melodia*	—	SSC	Marsh and swamp, wetlands. Emergent freshwater marshes, riparian willow thickets, riparian forests of valley oak (*Quercus lobata*), and vegetated irrigation canals and levees.	*Not expected to occur*. The project area is outside of this species' known range, which is restricted to the Sacramento Valley, Sacramento-San Joaquin River Delta, and northern San Joaquin Valley.
Suisun song sparrow *Melospiza melodia maxillaris*	—	SSC	Marsh and swamp, wetlands. Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules, and other sedges, and Salicornia; also known to frequent tangles bordering sloughs.	*Not expected to occur*. The project area is outside of this species known range, which is restricted to tidal marshes along the Suisun Marsh from the Carquinez Strait to the Sacramento and San Joaquin River confluence near Antioch (northern Contra Costa County).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Swainson's hawk *Buteo swainsoni*	—	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	*Not expected to occur*. The project area is outside of this species known breeding range. Although Swainson's hawks may occasionally fly over the project area, they are an infrequent visitor and are not expected to breed in the project area.
Tricolored blackbird *Agelaius tricolor*	—	ST SSC	Freshwater marsh or wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within one mile of the colony.	*May occur*. Suitable nesting habitat may be present in the wet margins of waterways and ponds in the project area, especially in wet areas within one mile of adjacent to permanent waters of Lake Chabot, the Upper San Leandro Reservoir, Lake Anza, and Jewel Lake.
Tule greater white-fronted goose *Anser albifrons elgasi*	—	SSC	Breeds in tundra near wetlands, rivers, and ponds, and forage year-round in wet meadows, mudflats, ponds, lakes, and wetlands. Nests on the ground in dense patches of grasses, sedge, or other dwarf shrubs in marsh and upland tundra. This subspecies of the greater white-fronted goose winters in the Sacramento Valley and uses marshes (typically tule rushes) more than other subspecies which prefer open fields for foraging.	*Not expected to occur*. California contains nonbreeding and migration habitat for greater white-fronted goose; however, this species does not breed in California. Some overwintering individuals may fly over the project area, but suitable overwintering marsh habitat is not present in the project area.
Vaux's swift *Chaetura vauxi*	—	SSC	Nests in large hollow trees and snags in coniferous forests. Often nests in large flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.	*May occur.* Suitable overwintering roosting habitat may be present in large diameter trees in the project area. However, nesting is not expected in the project area as the project area is entirely outside of the breeding range for this species.
Western snowy plover *Charadrius nivosus nivosus*	FT	SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	*Not expected to occur*. Suitable sandy beach habitat is not present in the project area.
White-tailed kite *Elanus leucurus*	—	FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	*May occur.* Suitable nesting habitat is present within the entire project area, and the species is known to nest in the vicinity.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Willow flycatcher *Empidonax traillii*	—	SE	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2,000-8,000 feet elevation Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.	*May occur.* Suitable nesting habitat is present along the edges of riparian areas throughout the project area.
Yellow rail *Coturnicops noveboracensis*	—	SSC	. Summer resident in eastern Sierra Nevada in Mono County. Fresh-water marshlands.	*Not expected to occur.* While yellow rail is an infrequent overwintering species in parts of the San Francisco Bay Area, the project area is outside of the current known breeding range for this species.
Yellow warbler *Setophaga petechia*	—	SSC	Riparian plant associations near water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	*May occur.* Suitable nesting habitat is present along the edges of riparian areas throughout the project area.
Yellow-breasted chat *Icteria virens*	—	SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	*May occur.* Suitable nesting habitat is present along the edges of riparian areas throughout the project area.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	—	SSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.	*Not expected to occur.* Migrating individuals of this species have been documented along the San Francisco Peninsula and Richmond/San Rafael area, but no occurrences are documented in Contra Costa or Alameda counties. In addition, no suitable breeding habitat is present in the project area, and the East Bay Hills are outside of the species' known breeding range.
Fish				
Central California roach *Hesperoleucus symmetricus symmetricus*	—	SSC	Generally found in small streams of the Sierra Nevada foothills flowing into the Central Valley and are particularly well adapted to life in intermittent watercourses; dense populations are frequently observed in isolated pools. Rarely above 3,200 feet in elevation. Tolerant of wide temperature ranges and dissolved oxygen levels. Most abundant when only species present, occupying large pools in open water. With other fish, found in shallow margins, pool edges, or dense cover.	*Not expected to occur.* The project area is outside of the species' known range. This species is restricted to the Sierra Nevada foothills and Central Valley.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Chinook salmon - Central Valley fall / late fall-run ESU *Oncorhynchus tshawytscha* pop. 13	—	SSC	Sacramento/San Joaquin flowing waters. Populations spawning in the Sacramento and San Joaquin rivers and their tributaries.	*Not expected to occur.* This species may pass through the Delta north of the project area; but, due to physical barriers, there is no aquatic connectivity or potential for dispersal into the project area for salmon species into the East Bay Hills.
Chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha* pop. 11	FT	ST	Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps greater than 27 degrees C are lethal to adults. Federal listing refers to populations spawning in Sacramento River and tributaries.	*Not expected to occur.* This species may pass through the Delta north of the project, but due to physical barriers, there is no aquatic connectivity or potential for dispersal into the project area for salmon species into the East Bay Hills. However, portions of Tilden, Sibley, and Redwood regional parks are mapped as Chinook Salmon Essential Fish Habitat by NOAA Fisheries, and these areas may provide habitat suitable for chinook salmon with removal of dams and other habitat enhancements (NOAA 2022).
Chinook salmon - Sacramento River winter-run ESU *Oncorhynchus tshawytscha* pop. 7	FE	SE	Sacramento/San Joaquin flowing waters. Sacramento River below Keswick Dam. Spawns in the Sacramento River, but not in tributary streams. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 C for spawning.	*Not expected to occur.* This species may pass through the Delta north of the project, but due to physical barriers, there is no aquatic connectivity or potential for dispersal into the project area for salmon species into the East Bay Hills. However, portions of Tilden, Sibley, and Redwood regional parks are mapped as Chinook Salmon Essential Fish Habitat by NOAA Fisheries, and these areas may provide habitat suitable for chinook salmon with removal of dams and other habitat enhancements (NOAA 2022).
Coho salmon - central California coast ESU *Oncorhynchus kisutch* pop. 4	FE	SE	Aquatic. Federal listing applies to populations between Punta Gorda and San Lorenzo River. State listing includes populations south of Punta Gorda. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen.	*Not expected to occur.* While the project is within the historic range, the species is now restricted to between Humboldt County to Sonoma County and is not expected in the waterways within the project area. However, the entire project area is mapped as Coho Salmon Essential Fish Habitat by NOAA Fisheries, and these areas may provide habitat suitable for coho salmon with removal of dams and other habitat enhancements (NOAA 2022)
Delta smelt *Hypomesus transpacificus*	FT	SE	Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities greater than 10 ppt. Most often at salinities less than 2 ppt.	*Not expected to occur.* Delta smelt occur in San Francisco Bay north and west of the project area, but no suitable saline habitat is present within the vicinity of the project.
Eulachon *Thaleichthys pacificus*	FT	—	Found in Klamath River, Mad River, Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris	*Not expected to occur.* The project area is outside of the known range for this species, and no habitat suitable for eulachon is present within the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Green sturgeon *Acipenser medirostris*	FT	SSC	Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers. Spawns at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	*Not expected to occur.* The project area is outside of the known range for this species, and no habitat suitable for green sturgeon is present within the project area.
Longfin smelt *Spirinchus thaleichthys*	FC	ST SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	*Not expected to occur.* No suitable aquatic estuarine habitat is present within the project area, and no aquatic connectivity is available for fish to travel from downstream aquatic areas into the project area.
Pacific lamprey *Entosphenus tridentatus*	—	SSC	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining. Swift-current gravel-bottomed areas for spawning with water temperatures between 12-18 degrees	*May occur.* Some suitable flowing aquatic habitat is present at Wildcat Canyon Creek, which runs through a portion of Tilden Regional Park. Minimal aquatic connectivity is available for fish to travel from downstream aquatic areas into the project area.
Sacramento hitch *Lavinia exilicauda exilicauda*	—	SSC	Warm, lowland freshwater streams, sloughs, lakes, and reservoirs, typically with aquatic vegetation. Require mud or small gravel substrate and can endure high temperatures for short periods of time.	*Not expected to occur.* The project area is outside of the known range for this species, and no habitat suitable for Sacramento hitch is present within the project area.
Sacramento perch *Archoplites interruptus*	—	SSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.	*May occur*. This species has been documented in portions of Wildcat Creek in Wildcat Canyon Regional Park, which flows from portions of the project area at Tilden Regional Park.
Sacramento splittail *Pogonichthys macrolepidotus*	—	SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes. Slow-moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	*Not expected to occur.* The project is outside of the species' known range. The closest occurrences are all located in the Suisun and San Pablo bays north of the project area (CNDDB 2022).
Steelhead - central California coast DPS *Oncorhynchus mykiss irideus* pop. 8	FT	—	Aquatic. Sacramento/San Joaquin flowing waters. From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	*Not expected to occur.* Although the project area is within the boundary for this distinct population segment (DPS) of steelhead, there is no aquatic connectivity to flowing streams in the project area, and this species is not expected to occur (NOAA 2013a).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Steelhead - Central Valley DPS *Oncorhynchus mykiss irideus* pop. 11	FT	—	Aquatic. Sacramento/San Joaquin flowing waters. Populations in the Sacramento and San Joaquin rivers and their tributaries.	*Not expected to occur*. The project area is outside of the historic and current range for this species (NOAA 2013b).
Tidewater goby *Eucyclogobius newberryi*	FE	SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	*Not expected to occur*. The closest documented occurrences are in the Berkeley Marina and Lake Merritt (CNDDB 2022). No suitable brackish aquatic habitat is present, and no aquatic connectivity to the project area.
Western brook lamprey *Lampetra richardsoni*	—	SSC	Require clear, cold water in minimally disturbed watershed with clean gravel near cover for spawning. Most individuals are nonpredatory and restricted to freshwater habitat, but some individuals develop predatory behaviors and can migrate to saline environments. Nest at low-velocity sites with gravel riffles at a depth of about 15 cm (Vladykov and Follet 1965).	*May occur*. Habitat suitable for western brook lamprey may be present in portions of Wildcat Creek in Tilden Regional Park.
White sturgeon *Acipenser transmontanus*	—	SSC	Live in estuaries of large rivers, moving into freshwater to spawn. Most abundant in brackish portions of estuaries. In estuaries adults concentrate in deep areas with soft bottoms.	*Not expected to occur*. The project area is outside of the known range for this species, and no habitat suitable for white sturgeon is present within the project area.
Invertebrates				
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	—	Coastal dunes, ultramafic, valley and foothill grassland. Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *Orthocarpus purpurscens* are the secondary host plants.	*Not expected to occur*. Although two occurrences are documented near Redwood Regional Park, the species is now considered extirpated from this area. The details of the occurrences note that the colony disappeared during the 1970s due to habitat modification (CNDDB 2022).
Callippe silverspot butterfly *Speyeria callippe callippe*	FE	—	Restricted to the northern coastal scrub of the San Francisco peninsula. Hostplant is Viola pedunculata. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	*Not expected to occur*. The project area is outside of the species' range. While the historic range of this species included much of Contra Costa and Alameda counties, the current range is restricted to areas north of San Pablo Bay and South San Francisco (USFWS 2020).
Conservancy fairy shrimp *Branchinecta conservatio*	FE	—	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	*Not expected to occur*. The project area is outside of the species' range, and habitat suitable for conservancy fairy shrimp is not present in the project area.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Crotch's bumble bee *Bombus crotchii*	—	SC	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	*May occur.* There are several occurrences of Crotch's bumble bee documented near the Tilden South and Fish Ranch treatment areas in 2015 (CNDDB 2022).
Monarch *Danaus plexippus*	FC	—	Closed-cone coniferous forest. Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	*May occur.* The project falls within the area mapped as "early breeding zone," and this region is a high-priority site for monarch protection (Xerces Society 2016, Xerces Society 2017). There are several overwintering population occurrences within three miles of the project area, along the coast of San Francisco Bay from Berkeley to Hayward; the closest is a 2017 record 2 miles west of the northern end of the project area (CNDDB 2022). Monarchs may roost in forested habitat throughout site, and monarchs may lay eggs in milkweed areas in grassland and scrubland.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	—	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	*Not expected to occur.* The project area is outside of the species known range, and no occurrences are documented within the vicinity of the project. Additionally, no suitable vernal pool habitat is present in the project area.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	—	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	*Not expected to occur.* The project area is outside of the species known range, and no occurrences are documented within the vicinity of the project. Additionally, no suitable vernal pool habitat is present in the project area.
Western bumble bee *Bombus occidentalis*	—	SC	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	*May occur.* There are several documented occurrences within treatment areas at Tilden Regional Park, Redwood Regional Park, and Lake Chabot Regional Park in 1984, 1966 and 1994, respectively, and species is considered presumed extant in the area.
Mammals				
Alameda Island mole *Scapanus latimanus parvus*	—	SSC	Valley and foothill grassland. Only known from Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. avoids flooded soils.	*Not expected to occur.* This species is restricted to Alameda Island. The project area is entirely outside of the known range of this species.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
American badger *Taxidea taxus*	—	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows. Adapted to a variety of habitat types.	*May occur.* Two historic (1925 and 1930) records of this species are documented in the areas near Anthony Chabot Regional Par (CNDDB 2022). Although these records are historic, the species is potentially extant in the area because this species is under-documented in the database, and habitat potentially suitable for American badger is present throughout grassland, scrub, and forested habitats in the project area
Big free-tailed bat *Nyctinomops macrotis*	—	SSC	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	*Not expected to occur.* This species' range is restricted to Southern California. Three occurrences of this species are documented in the CNDDB of this species in the San Francisco Bay Area, but they are all historic (greater than 100 years of age) and are noted in the CNDDB as "unknown" specific locations (CNDDB 2022). These records likely represent either vagrant individuals documented outside of their normal range, or represent the historic range of this species which is no longer recognized as occupied. This species is not expected to occur because the project area is entirely outside of the known range of this species.
Mountain lion *Puma concolor*	—	SC	Mountain lions inhabit a wide range of ecosystems, including mountainous regions, forests, deserts, and wetlands. Mountain lions establish and defend large territories and can travel large distances in search of prey or mates. The Central Coast and Southern California Evolutionarily Significant Units (ESUs) were granted emergency listing status in April of 2020, and California Department of Fish and Wildlife (CDFW) is currently reviewing a petition to list these ESUs as threatened under CESA.	*Known to occur*. Mountain lions have been documented via scat, tracks, and motion-activated wildlife cameras in the project areas, and it is likely that the treatment areas occupy a portion of the home range of many individual lions (iNaturalist 2022, Yovovich et al. 2020). Although denning in treatment areas is unlikely, potential den habitat (e.g., caves, cavities, thickets) may be present within treatment areas.
Pallid bat *Antrozous pallidus*	—	SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	*May occur.* Pallid bat may establish maternity or overwintering roosts in abandoned buildings, caves, or large diameter trees in the project area.
Ringtail *Bassariscus astutus*	—	FP	Riparian habitats, forest habitats, and shrub habitats in lower to middle elevations.	*May occur.* Suitable riparian habitat is present across the project area, and the entire project falls within range for this species. There are four unverified occurrences of ringtail within the vicinity of the project area; however, these records are based on scat only (iNaturalist 2022).

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE	SE, FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, build loosely organized nests. Requires higher areas for flood escape.	*Not expected to occur.* Suitable saline emergent wetland habitat is not present in the project area.
Salt-marsh wandering shrew *Sorex vagrans halicoetes*	—	SSC	Marsh and swamp, wetland. Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 feet above sea level where abundant driftwood is scattered among Salicornia.	*Not expected to occur.* Suitable saline emergent wetland habitat is not present in the project area.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	—	SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest-building materials.	*Known to occur.* San Francisco dusky-footed woodrat middens were observed during the reconnaissance surveys throughout all project sites, especially in dense wooded wet or riparian oak woodland, bay forest, and chaparral.
San Joaquin kit fox *Vulpes macrotis mutica*	FE	ST	Chenopod scrub, valley and foothill grassland. Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	*Not expected to occur.* San Joaquin Kit Fox are documented as recently occurring in the vicinity of Dublin and San Ramon to the south and Livermore to the east, but they are not known to occur north of I-80 or west of I-680 (CNDDB 2022, iNaturalist 2022). The project is outside of the species known range (USGS 2001).
San Pablo vole *Microtus californicus sanpabloensis*	—	SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges, and herbs. Forms a network of runways leading from the burrow	*Not expected to occur.* This species is restricted to the salt marshes of San Pablo Creek. The project area is entirely outside of known range.
Southern sea otter *Enhydra lutris nereis*	FT	FP	Nearshore marine environments from about Año Nuevo, San Mateo County to Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	*Not expected to occur.* This species is restricted to fully aquatic environments. The project area contains no habitat suitable for southern sea otter.
Suisun shrew *Sorex ornatus sinuosus*	—	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Require dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging.	*Not expected to occur.* This species is restricted to the salt marshes of San Pablo and Suisun bays. The project area is entirely outside of known range.

Species	Listing Status[1] Federal	Listing Status[1] State	Habitat	Potential for Occurrence[2]
Townsend's big-eared bat *Corynorhinus townsendii*	—	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	*May occur.* This species may roost in large diameter trees, abandoned buildings, or caves within the project area.
Western mastiff bat *Eumops perotis californicus*	—	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	*May occur.* Habitat potentially suitable for western mastiff bat is present in forested areas of the project area.
Western red bat *Lasiurus blossevillii*	—	SSC	Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	*May occur.* Habitat potentially suitable for western red bat is present in forested areas of the project area.

Notes: CNDDB = California Natural Diversity Database; CEQA = California Environmental Quality Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected)
FT Federally Listed as Threatened (legally protected)
FD Federally Delisted
FP Proposed for Listing under the federal Endangered Species Act

State:

FP Fully Protected (legally protected)
SSC Species of Special Concern (no formal protection other than CEQA consideration)
SE State Listed as Endangered (legally protected)
ST State Listed as Threatened (legally protected)
SC State Candidate for listing (legally protected)
SD State Delisted

2 Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present because of poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.
May occur: Suitable habitat is available; however, there are little to no other indicators that the species might be present.
Known to occur: Species has been documented within the treatment site.

Sources: CNDDB 2022, Cornell University 2022, eBird 2022, iNaturalist 2022, Vladykov and William 1965, Xerces 2016, Yovovich 2020

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CCH. *See* Consortium of California Herbaria.

CNDDB. *See* California Natural Diversity Database.

CNPS. *See* California Native Plant Society.

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USFWS. *See* US Fish and Wildlife Service.

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Attachment D

Hazardous Materials

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ENVIROSTOR

PROJECT SEARCH RESULTS

STATUS: Active GO

SEARCH CRITERIA: ALAMEDA, , FEDERAL SUPERFUND SITES (NPL), STATE RESPONSE SITES

24 RECORDS FOUND EXPORT TO EXCEL PAGE 1 OF 1

		SITE / FACILITY NAME	ESTOR / EPA ID	PROGRAM TYPE	STATUS	ADDRESS DESCRIPTION	CITY	ZIP	CALENVIROSCREEN SCORE	COUNTY
[REPORT]	[MAP]	1901 LIVINGSTON STREET	60002824	STATE RESPONSE	ACTIVE	1901 LIVINGSTON STREET	OAKLAND	94606	85-90%	ALAMEDA
[REPORT]	[MAP]	ACTS COMMUNITY DEVELOPMENT	60003038	STATE RESPONSE	ACTIVE	1001 77TH AVENUE	OAKLAND	94621	90-95%	ALAMEDA
[REPORT]	[MAP]	ALAMEDA NAS	01970005	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	2,616 ACRES IN ALAMEDA, CALIFORNIA	ALAMEDA	94501	75-80%	ALAMEDA
[REPORT]	[MAP]	AMCO CHEMICAL	01390001	FEDERAL SUPERFUND - LISTED	ACTIVE	1414 THIRD STREET	OAKLAND	94607	90-95%	ALAMEDA
[REPORT]	[MAP]	CAL TECH METAL FINISHERS	01340118	STATE RESPONSE	ACTIVE	825, 829, 841 31ST STREET	OAKLAND	94608	80-85%	ALAMEDA
[REPORT]	[MAP]	COMMERCIAL BUILDINGS	01720110	STATE RESPONSE	ACTIVE	1250-1276, 1284 W. GRAND & 2232 POPLAR	OAKLAND	94607	85-90%	ALAMEDA
[REPORT]	[MAP]	DWA PLUME	01990002	STATE RESPONSE	ACTIVE	SAN LEANDRO (GROUNDWATER CONTAMINATION)	SAN LEANDRO	94578	75-80%	ALAMEDA
[REPORT]	[MAP]	E-D COAT INC	60002501	STATE RESPONSE	ACTIVE	715 4TH STREET	OAKLAND	94607	NA	ALAMEDA
[REPORT]	[MAP]	FORMER J. H. BAXTER FACILITY, ALAMEDA	01240036	STATE RESPONSE	ACTIVE	2189, 2199, 2201, 2229 CLEMENT AVENUE	ALAMEDA	94501	65-70%	ALAMEDA
[REPORT]	[MAP]	GENERAL ELECTRIC - OAKLAND	01360059	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	5441 INTERNATIONAL BOULEVARD	OAKLAND	94601	95-100%	ALAMEDA
[REPORT]	[MAP]	HARD CHROME ENGINEERING	01870003	STATE RESPONSE	ACTIVE	750 107TH AVENUE	OAKLAND	94603	70-75%	ALAMEDA
[REPORT]	[MAP]	HARRIS DRY CLEANERS	01720109	STATE RESPONSE	ACTIVE	2801 MARTIN LUTHER KING JR. WAY	OAKLAND	94609	80-85%	ALAMEDA
[REPORT]	[MAP]	HOWARD MARINE TERMINAL SITE	01440006	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	EMBARCADERO WEST AND MARKET STREETS	OAKLAND	94604	NA	ALAMEDA

		SITE / FACILITY NAME	ESTOR / EPA ID	PROGRAM TYPE	STATUS	ADDRESS DESCRIPTION	CITY	ZIP	CALENVIROSCREEN SCORE	COUNTY
[REPORT]	[MAP]	LANE METAL FINISHERS	60000594	STATE RESPONSE	ACTIVE	2942 SAN PABLO AVENUE	OAKLAND	94608	80-85%	ALAMEDA
[REPORT]	[MAP]	LAWRENCE LIVERMORE NATIONAL LAB (USDOE)	01730095	FEDERAL SUPERFUND - LISTED	ACTIVE	7000 EAST AVENUE	LIVERMORE	94550	25-30%	ALAMEDA
[REPORT]	[MAP]	MARCHANT/WHITNEY	60001628	STATE RESPONSE	ACTIVE	5679 HORTON STREET	EMERYVILLE	94608	40-45%	ALAMEDA
[REPORT]	[MAP]	MARSHALL STEEL CLEANERS	60000250	STATE RESPONSE	ACTIVE	20457 REDWOOD ROAD	CASTRO VALLEY	94546	50-55%	ALAMEDA
[REPORT]	[MAP]	NORTHWESTERN VENETIAN SUPPLY CORP. SITE	01340123	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	1218 24TH STREET	OAKLAND	94607	85-90%	ALAMEDA
[REPORT]	[MAP]	OAKLAND ARMY BASE	01970006	STATE RESPONSE	ACTIVE	2475-D WEST 12TH STREET	OAKLAND	94607	80-85%	ALAMEDA
[REPORT]	[MAP]	OAKLAND GATEWAY DEVELOPMENT AREA	01970016	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	700 MURMANSK STREET, SUITE 3	OAKLAND	94607	80-85%	ALAMEDA
[REPORT]	[MAP]	ONE-HOUR MARTINIZING CLEANERS	60003037	STATE RESPONSE	ACTIVE	1275 SOLANO AVENUE	ALBANY	94706	15-20%	ALAMEDA
[REPORT]	[MAP]	PARKS AIR FORCE BASE (J09CA0083)	80000158	STATE RESPONSE	ACTIVE		DUBLIN		25-30%	ALAMEDA
[REPORT]	[MAP]	PARKS RESERVE FORCES TRAINING AREA	01970012	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	BLDG. 790, 5TH STREET	DUBLIN	94568	20-25%	ALAMEDA
[REPORT]	[MAP]	UNION PACIFIC OAKLAND COLISEUM SITE	01400015	STATE RESPONSE	ACTIVE	700 73RD AVENUE	OAKLAND	94621	90-95%	ALAMEDA

Back to Top

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ENVIROSTOR

PROJECT SEARCH RESULTS

STATUS: Active GO

SEARCH CRITERIA: CONTRA COSTA, , FEDERAL SUPERFUND SITES (NPL), STATE RESPONSE SITES

15 RECORDS FOUND EXPORT TO EXCEL PAGE 1 OF 1

		SITE / FACILITY NAME	ESTOR / EPA ID	PROGRAM TYPE	STATUS	ADDRESS DESCRIPTION	CITY	ZIP	CALENVIROSCREEN SCORE	COUNTY
[REPORT]	[MAP]	BLAIR SOUTHERN PACIFIC LANDFILL	07490012	STATE RESPONSE	ACTIVE	AT THE FOOT OF SOUTH 51ST STREET	RICHMOND	94804	70-75%	CONTRA COSTA
[REPORT]	[MAP]	CONCORD NAVAL WEAPONS STATION - INLAND AREA	07970005	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	12,922 ACRES; 30 MI NE OF SAN FRANCISCO	CONCORD	94520	70-75%	CONTRA COSTA
[REPORT]	[MAP]	DELTA AUTO WRECKERS	07750026	STATE RESPONSE	ACTIVE	6 INDUSTRY ROAD	PITTSBURG	94565	80-85%	CONTRA COSTA
[REPORT]	[MAP]	ELECTRO FORMING CO. - RICHMOND	01330044	STATE RESPONSE	ACTIVE	130 NEVIN AVENUE	RICHMOND	94801	90-95%	CONTRA COSTA
[REPORT]	[MAP]	FULTON SHIPYARD	07440009	STATE RESPONSE	ACTIVE	307 FULTON SHIPYARD ROAD	ANTIOCH	94509	90-95%	CONTRA COSTA
[REPORT]	[MAP]	GBF / PITTSBURG DUMPS	07490038	FEDERAL SUPERFUND - DELISTED	ACTIVE - LAND USE RESTRICTIONS	SOMERVILLE RD & JAMES DONLON BLVD	ANTIOCH	94509	70-75%	CONTRA COSTA
[REPORT]	[MAP]	HARBORFRONT TRACT	70000178	STATE RESPONSE	ACTIVE	MEADE SOUTH 49TH EAST MONTGOMERY	RICHMOND	94804	70-75%	CONTRA COSTA
[REPORT]	[MAP]	HARBOUR WAY SOUTH	07340024	STATE RESPONSE	ACTIVE	738 HARBOUR WAY SOUTH	RICHMOND	94804	70-75%	CONTRA COSTA
[REPORT]	[MAP]	LIQUID GOLD OIL CORP	07290039	FEDERAL SUPERFUND - DELISTED	ACTIVE - LAND USE RESTRICTIONS	HOFFMAN BLVD & S 47TH ST	RICHMOND	94804	70-75%	CONTRA COSTA
[REPORT]	[MAP]	MILITARY OCEAN TERMINAL CONCORD	07970004	FEDERAL SUPERFUND - LISTED	ACTIVE	PORT CHICAGO HIGHWAY	CONCORD	94520	75-80%	CONTRA COSTA
[REPORT]	[MAP]	REACTION PRODUCTS	07280013	STATE RESPONSE	ACTIVE	840 MORTON AVENUE	RICHMOND	94806	80-85%	CONTRA COSTA
[REPORT]	[MAP]	SELBY SLAG	07330031	STATE RESPONSE	ACTIVE	SHORELINE&MARSH ADJ. TO CARQUINEZ STRAIT	SELBY	94802	85-90%	CONTRA COSTA
[REPORT]	[MAP]	UNITED HECKATHORN	07280015	FEDERAL SUPERFUND - LISTED	ACTIVE - LAND USE RESTRICTIONS	8TH & WRIGHT	RICHMOND	94804	70-75%	CONTRA COSTA

		SITE / FACILITY NAME	ESTOR / EPA ID	PROGRAM TYPE	STATUS	ADDRESS DESCRIPTION	CITY	ZIP	CALENVIROSCREEN SCORE	COUNTY
[REPORT]	[MAP]	UNIVERSITY OF CALIFORNIA, RICHMOND SE	07730003	STATE RESPONSE	ACTIVE	1301 SOUTH 46TH STREET	RICHMOND	94804	70-75%	CONTRA COSTA
[REPORT]	[MAP]	ZENECA RICHMOND AG PRODUCTS	07280002	STATE RESPONSE	ACTIVE - LAND USE RESTRICTIONS	1415 SOUTH 47TH STREET	RICHMOND	94804	70-75%	CONTRA COSTA

Back to Top

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ENVIROSTOR

Enter an address | Map Address

Map | Satellite

- Sites and Facilities
  - Cleanup Sites
    - [x] Federal Superfund
    - [x] State Response
    - [x] Voluntary Cleanup
    - [ ] School Cleanup
    - [ ] Evaluation
    - [ ] School Investigation
    - [ ] Military Evaluation
    - [ ] Tiered Permit
    - [ ] Corrective Action
    - [ ] Field Points

    STATUS: All Statuses
  - Permitted Sites
    - [x] Operating
    - [x] Post-Closure
    - [x] Non-Operating
  - Other Sites
  - GIS Layers
- Tools

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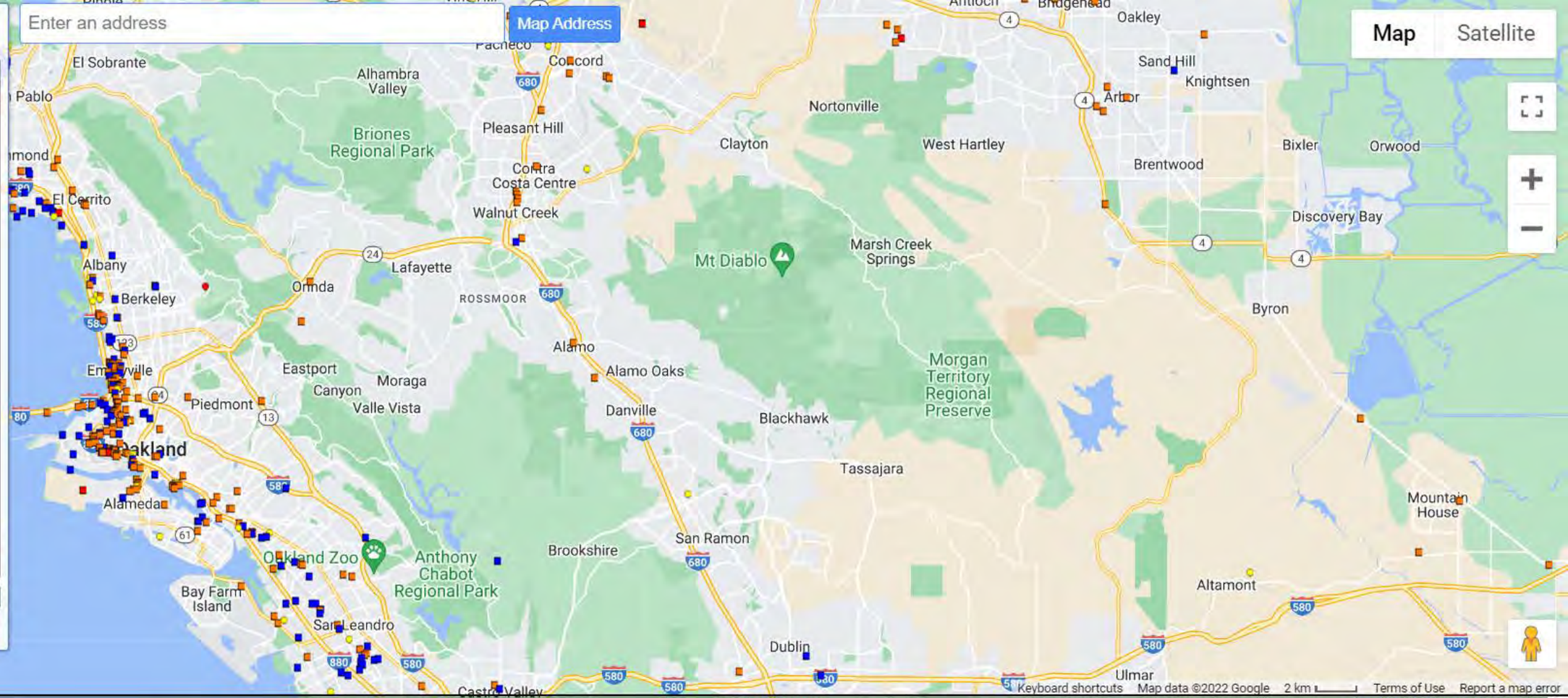
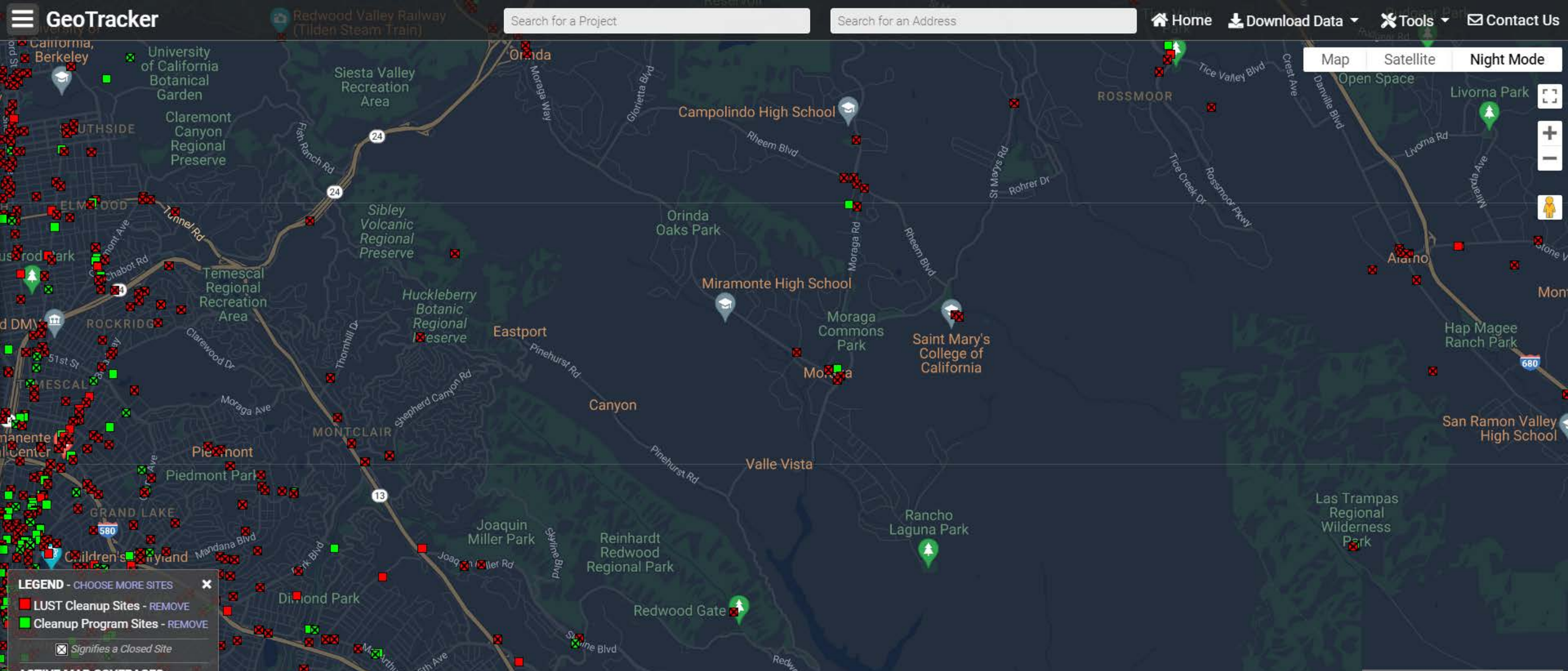


SITES CURRENTLY VISIBLE ON MAP — 500 SITES LISTED — EXPORT THIS LIST TO EXCEL

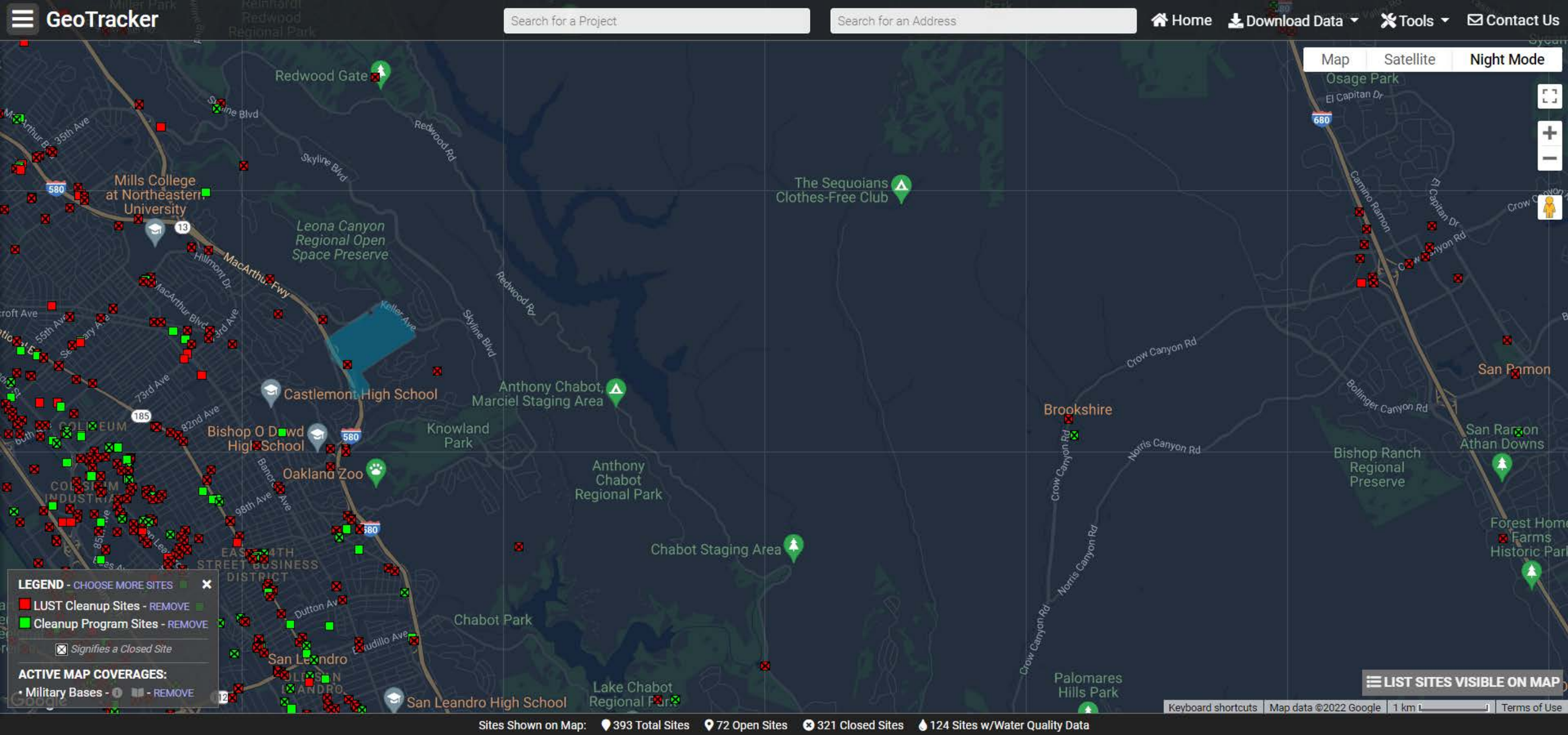
PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
02AA PARTNERS, LLC	ACTIVE	VOLUNTARY CLEANUP	2200-2320 UNION STREET, 2201-2319 MAGNOLIA STREET	OAKAND
1003 CANAL BOULEVARD	NO FURTHER ACTION	VOLUNTARY CLEANUP	1003 CANAL BOULEVARD	RICHMOND
1171 OCEAN AVENUE	INACTIVE - ACTION REQUIRED	VOLUNTARY CLEANUP	1171 OCEAN AVENUE	OAKLAND
1228 UNDERWOOD AVENUE SITE	NO FURTHER ACTION	VOLUNTARY CLEANUP	1228 UNDERWOOD AVE.	SAN FRANCISCO
1300 26TH AVENUE	ACTIVE	VOLUNTARY CLEANUP	1300 26TH AVENUE AND 2495 IRVING STREET	SAN FRANCISCO
1450 MARIN ST. LLC PROJECT / FEDERATED FRY METALS	CERTIFIED / OPERATION & MAINTENANCE	STATE RESPONSE	1450 MARIN STREET/1901 CESAR CHAVEZ	SAN FRANCISCO
1558-46TH AVENUE	NO FURTHER ACTION	VOLUNTARY CLEANUP	1558 46TH AVENUE	SAN FRANCISCO
1598 BAY STREET	CERTIFIED / OPERATION & MAINTENANCE	VOLUNTARY CLEANUP	1598 BAY STREET	SAN FRANCISCO

SITES IDENTIFIED WITH WASTE CONSTITUENTS ABOVE HAZARDOUS WASTE LEVELS OUTSIDE THE WASTE MANAGEMENT UNIT

COUNTY	CITY	REGION	SWAT F	WASTE DISCHARGER SYSTEM NO.	SOLID WASTE ID NO.	WASTE MANAGEMENT UNIT NAME	FACILITY NAME	AGENCY NAME
DEL NORTE	CRESCENT CITY	1	2	1A880520NSL-01		DEL NORTE COUNTY- PESTICIDE STORAGE	DEL NORTE PESTICIDE STORAGE AR	DEL NORTE, COUNTY OF
CONTRA COSTA	PITTSBURG	2	1	2 071059002-02	07-A1-0001	U.S. STEEL CORP.-PITTSBURG SITE LA	WDR-USS-POSCO	USS-POSCO
SOLANO	VALLEJO	2	1	2 482011003-01	48-AA-0008	US NAVY MARE ISLAND SANITARY LANDFILL	WDR-NAVAL SHIPYARD/CLASS I LAN	MARE ISLAND NAVAL SHIPYARD
CONTRA COSTA	RICHMOND	2	3	2 071007002-01		CHEVRON CHEMICAL COMPANY-OLD SITES	WDR-ORTHO DIV-RICHMOND PLANT	CHEVRON CHEMICAL COMPANY
MONTEREY	FORT ORD (Marina)	3	1	3 270301004-01	27-AA-0015	FORT ORD LANDFILL	SANITARY LANDFILL	U.S. ARMY, FORT ORD
SANTA BARBARA	LOMPOC	3	3	3 420305001-01	42-AA-0017	LOMPOC CITY LANDFILL	SOLID WASTE DISPOSAL SITE	LOMPOC CITY
LOS ANGELES	MONTEREY PARK	4	1	4B190332001-01	19-AM-0001	OPERATING INDUSTRIES LANDFILL	OPERATING INDUSTRIES, INC.	OPERATING INDUSTRIES, INC.
TULARE	WOODLAKE	5F	1	5D540300010-01	54-AA-0007	TULARE COUNTY-WOODLAKE LANDFILL	WOODLAKE SWDS	TULARE, COUNTY OF
FRESNO	FRESNO	5F	2	5D100300001-01		MCKINLEY AVE. YARD	T.H. AGRICULTURE AND NUTRITION	NORTH AMERICAN PHILLIPS
KINGS	CORCORAN	5F	2	5D160302001-01	16-AA-0011	KINGS COUNTY-CORCORAN LANDFILL	CORCORAN SWDS	KINGS COUNTY WASTE MGMT AUTH.
FRESNO	FRESNO	5F	3	5D100319001-01	10-AA-0013	ORANGE AVENUE DISPOSAL COMPANY	ORANGE AVENUE LANDFILL	ORANGE AVENUE DISP CO. INC
TULARE	EXETER	5F	3	5D540300003-01	54-AA-0002	TULARE COUNTY-EXETER DISPOSAL SITE	EXETER SWDS	TULARE, COUNTY OF
MERCED	ATWATER	5F	4	5C240115001-01		ATWATER CITY	BERT CRANE ROAD LANDFILL	ATWATER, CITY OF
FRESNO	FOWLER	5F	5	5D100325N01-01		FOWLER CITY	FOWLER CITY LANDFILL (OLD)	FOWLER, CITY OF
BUTTE	OROVILLE	5R	2	5A042005001-01		KOPPERS COMPANY-OROVILLE SITE	KOPPERS WOOD PRESERVING ISW	KOPPERS INDUSTRIES INC.
BUTTE	CHICO	5R	4	5A040302N01-01		CHICO CITY BURN DUMP	HUMBOLDT ROAD LANDFILL	CHICO, CITY OF
SACRAMENTO	SACRAMENTO	5S	1	5A340700003-01	34-AA-0008	US AIR FORCE-MCCLELLAN AFB LANDFILL	CLASS III SITE 8 (CLOSURE)	US AIR FORCE-MCCLELLAN AFB
SACRAMENTO	MATHER (Rancho Cordova)	5S	2	5A340700001-01		US AIR FORCE-MATHER FIELD LANDFILL	MATHER AFB ENVIRONMENTAL MGMT	US AIR FORCE – MATHER AFB
SACRAMENTO	SACRAMENTO	5S	3	5B342000N01-01		SACRAMENTO ARMY DEPOT	SACRAMENTO ARMY DEPOT	U.S. ARMY
SAN JOAQUIN	STOCKTON	5S	3	5 390002NUR-01	39-AA-0006	US NAVY COMMUNICATIONS LANDFILL	U.S.N. COMMUNICATION STA. LANDF	U.S. NAVY COMMUNICATIONS
SAN JOAQUIN	FRENCH CAMP	5S	3	5 390003NUR-01		US ARMY-SHARPE ARMY DEPOT	US ARMY-SHARPE ARMY DEPOT	US ARMY
SAN JOAQUIN	TRACY	5S	5	5 390006NUR-01		SITE 300 (OTHER 39 WMUS)	LAWRENCE LIVERMORE LAB	LAWRENCE LIVERMORE LABS
INYO	KEELER	6V	1	6B142000041-01	14-AA-0008	US TUNGSTEN OWENS LAKE LANDFILL	OWENS LAKE LANDFILL	UMETCO MINERALS CORPORATION
ORANGE	FULLERTON	8	1	8300002NUR-01		MCCOLL SITE	MCCOLL SLUDGE DISPOSAL SITE	TOXIC SUBSTANCES CONTROL DIVIS
RIVERSIDE	RIVERSIDE	8	1	8 330325001-01		STRINGFELLOW QUARRY ACID PITS	STATE OF CALIFORNIA-STRINGFELLOW	TOXIC PROGRAM MANAGEMENT SECT



Sites Shown on Map: 486 Total Sites | 106 Open Sites | 380 Closed Sites | 193 Sites w/Water Quality Data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Search for an Address
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Night Mode
Redwood Gate
Mills College at Northeastern University
Leona Canyon Regional Open Space Preserve
The Sequoians Clothes-Free Club
Castlemont High School
Anthony Chabot, Marciel Staging Area
Bishop O'Dowd High School
Knowland Park
Oakland Zoo
Anthony Chabot Regional Park
Chabot Staging Area
Chabot Park
San Leandro
San Leandro High School
Lake Chabot Regional Park
Brookshire
Osage Park
San Ramon
Bishop Ranch Regional Preserve
San Ramon Athan Downs
Forest Home Farms Historic Park
Palomares Hills Park
Crow Canyon Rd
Norris Canyon Rd
Bollinger Canyon Rd
Camino Ramon
El Capitan Dr
Skyline Blvd
Redwood Rd
MacArthur Fwy
LEGEND - CHOOSE MORE SITES
LUST Cleanup Sites - REMOVE
Cleanup Program Sites - REMOVE
Signifies a Closed Site
ACTIVE MAP COVERAGES:
• Military Bases - REMOVE
LIST SITES VISIBLE ON MAP
Keyboard shortcuts
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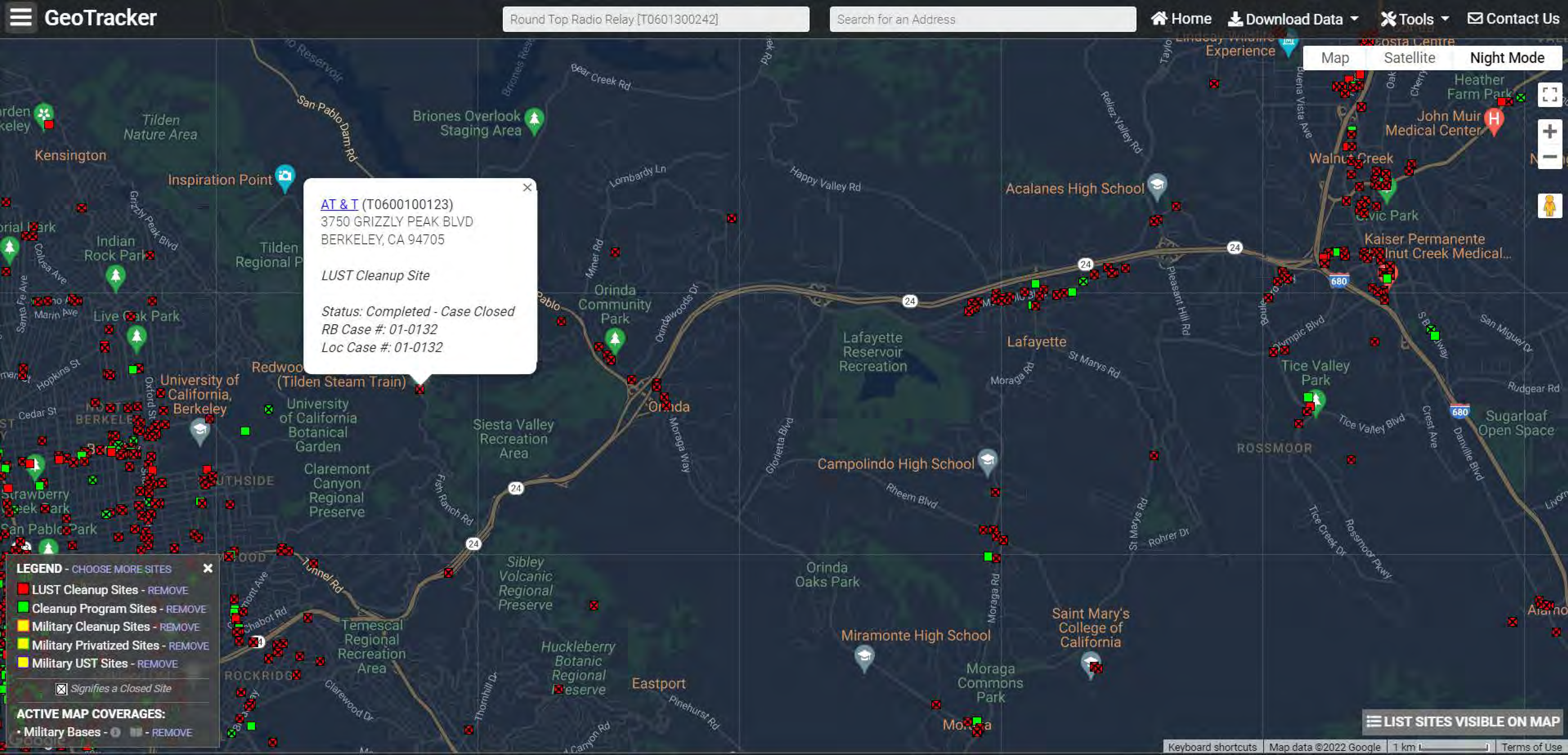
Sites Shown on Map:
393 Total Sites
72 Open Sites
321 Closed Sites
124 Sites w/Water Quality Data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Download Data
Tools
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Map
Satellite
Night Mode
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BERKELEY, CA 94705
LUST Cleanup Site
Status: Completed - Case Closed
RB Case #: 01-0132
Loc Case #: 01-0132
LEGEND - CHOOSE MORE SITES
LUST Cleanup Sites - REMOVE
Cleanup Program Sites - REMOVE
Military Cleanup Sites - REMOVE
Military Privatized Sites - REMOVE
Military UST Sites - REMOVE
Signifies a Closed Site
ACTIVE MAP COVERAGES:
Military Bases - REMOVE
LIST SITES VISIBLE ON MAP
Kensington
Tilden Nature Area
Inspiration Point
Briones Overlook Staging Area
Indian Rock Park
Live Oak Park
University of California, Berkeley
University of California Botanical Garden
Claremont Canyon Regional Preserve
Siesta Valley Recreation Area
Orinda Community Park
Orinda
Lafayette Reservoir Recreation
Lafayette
Acalanes High School
Walnut Creek
John Muir Medical Center
Heather Farm Park
Kaiser Permanente Walnut Creek Medical...
Tice Valley Park
ROSSMOOR
Sugarloaf Open Space
Campolindo High School
Sibley Volcanic Regional Preserve
Temescal Regional Recreation Area
Huckleberry Botanic Regional Preserve
Orinda Oaks Park
Miramonte High School
Saint Mary's College of California
Moraga Commons Park
Eastport
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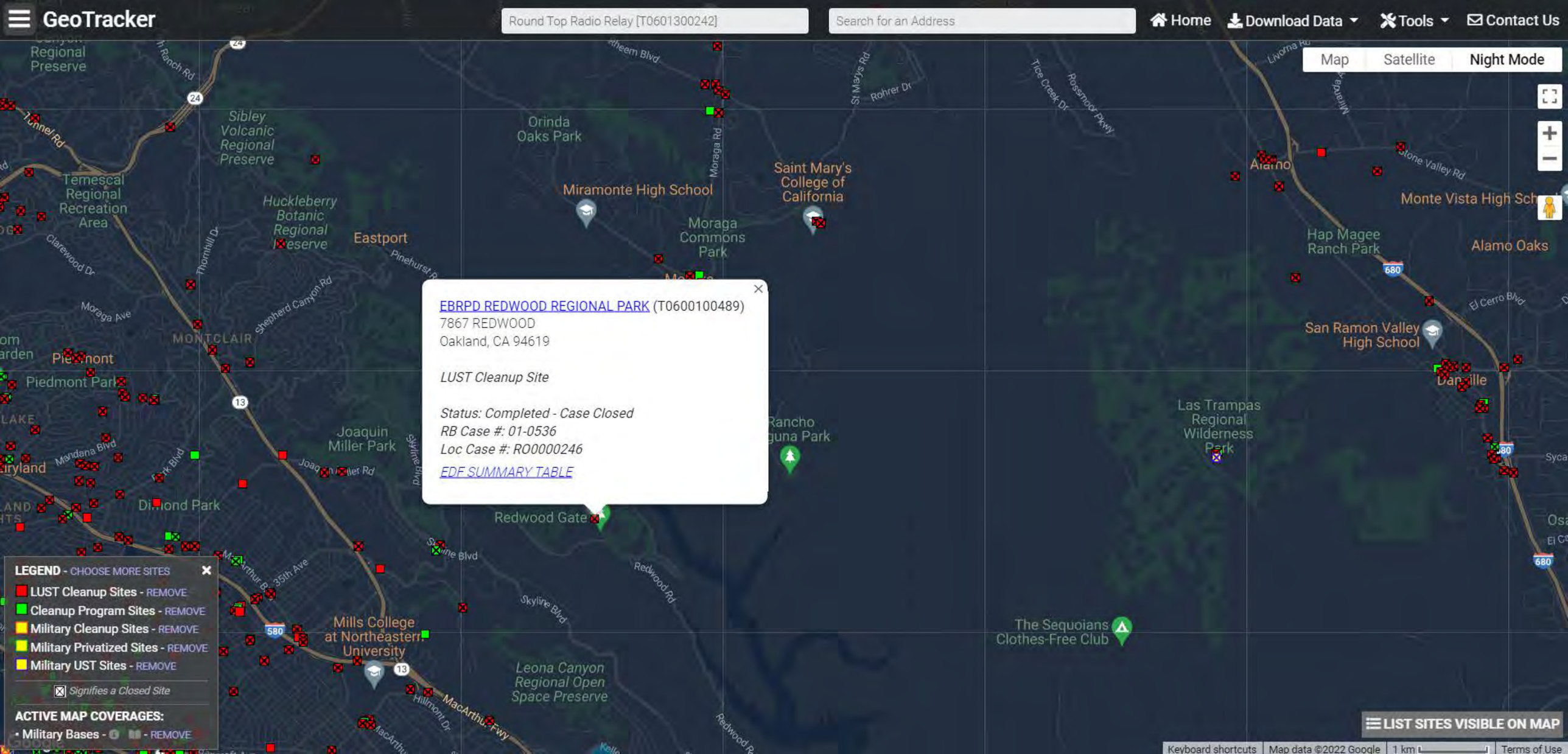
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Satellite
Night Mode
EBRPD REDWOOD REGIONAL PARK (T0600100489)
7867 REDWOOD
Oakland, CA 94619
LUST Cleanup Site
Status: Completed - Case Closed
RB Case #: 01-0536
Loc Case #: RO0000246
EDF SUMMARY TABLE
LEGEND - CHOOSE MORE SITES
LUST Cleanup Sites - REMOVE
Cleanup Program Sites - REMOVE
Military Cleanup Sites - REMOVE
Military Privatized Sites - REMOVE
Military UST Sites - REMOVE
Signifies a Closed Site
ACTIVE MAP COVERAGES:
• Military Bases - REMOVE
LIST SITES VISIBLE ON MAP
Redwood Gate
Miramonte High School
Saint Mary's College of California
Moraga Commons Park
Orinda Oaks Park
Sibley Volcanic Regional Preserve
Temescal Regional Recreation Area
Huckleberry Botanic Regional Preserve
Eastport
Joaquin Miller Park
Diamond Park
Piedmont Park
Mills College at Northeastern University
Leona Canyon Regional Open Space Preserve
Las Trampas Regional Wilderness Park
San Ramon Valley High School
Hap Magee Ranch Park
Alamo Oaks
The Sequoians Clothes-Free Club
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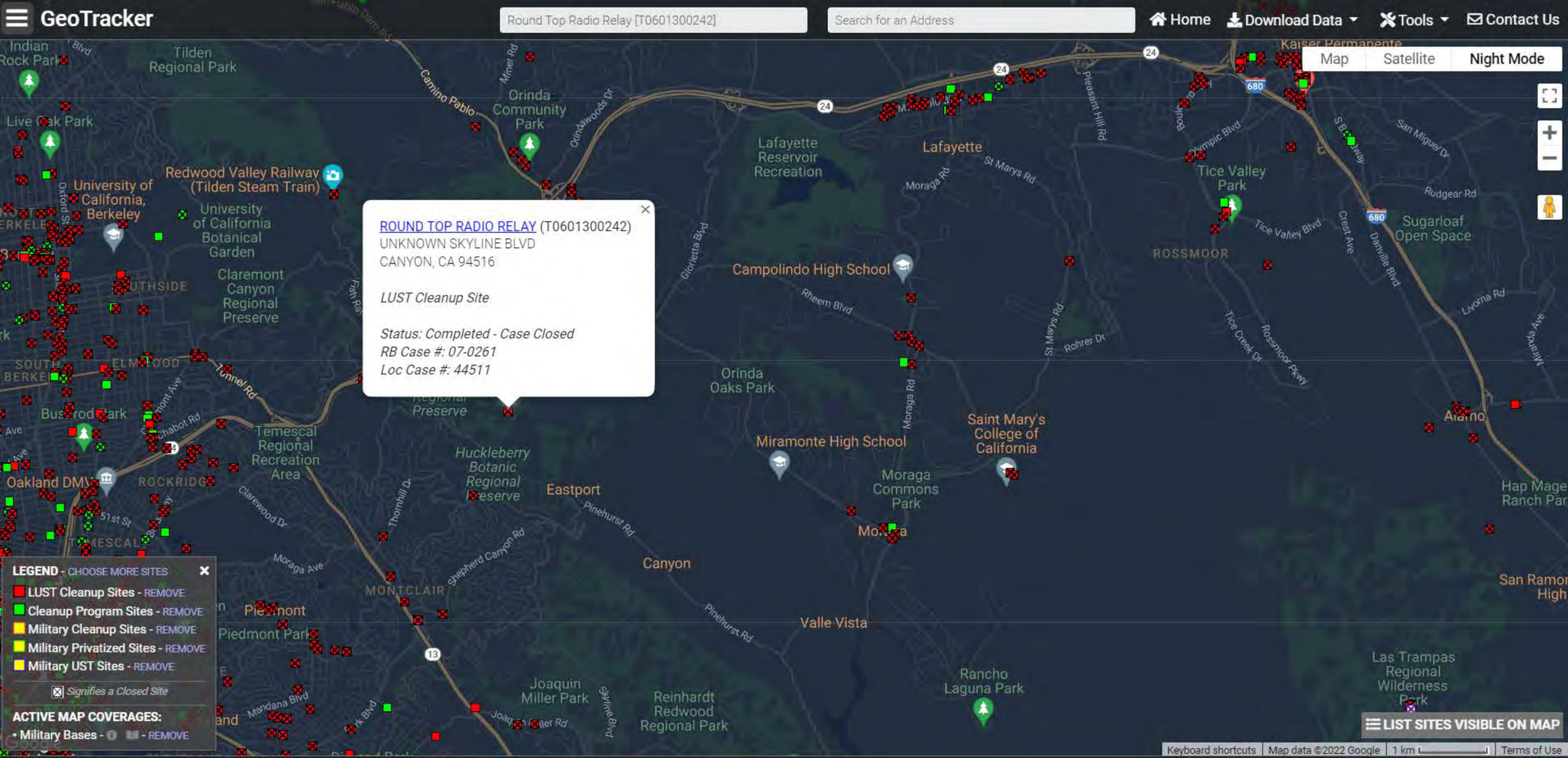
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Map
Satellite
Night Mode
ROUND TOP RADIO RELAY (T0601300242)
UNKNOWN SKYLINE BLVD
CANYON, CA 94516
LUST Cleanup Site
Status: Completed - Case Closed
RB Case #: 07-0261
Loc Case #: 44511
LEGEND - CHOOSE MORE SITES
LUST Cleanup Sites - REMOVE
Cleanup Program Sites - REMOVE
Military Cleanup Sites - REMOVE
Military Privatized Sites - REMOVE
Military UST Sites - REMOVE
Signifies a Closed Site
ACTIVE MAP COVERAGES:
• Military Bases - REMOVE
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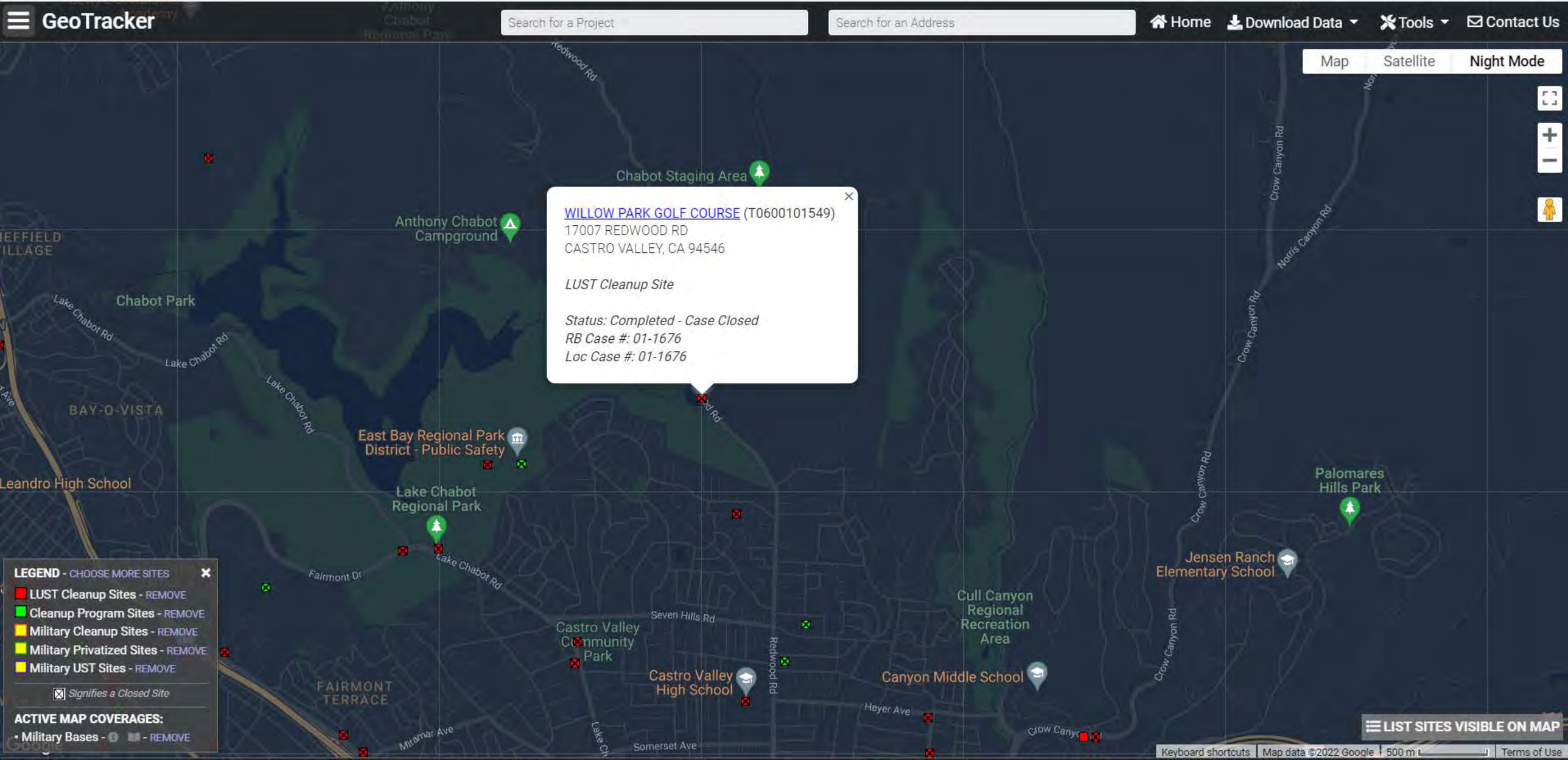
Indian Rock Park
Tilden Regional Park
Live Oak Park
Orinda Community Park
Lafayette Reservoir Recreation
Lafayette
Kaiser Permanente
Tice Valley Park
Sugarloaf Open Space
ROSSMOOR
Redwood Valley Railway (Tilden Steam Train)
University of California, Berkeley
University of California Botanical Garden
Claremont Canyon Regional Preserve
Campolindo High School
Orinda Oaks Park
Miramonte High School
Saint Mary's College of California
Moraga Commons Park
Huckleberry Botanic Regional Preserve
Temescal Regional Recreation Area
Eastport
Canyon
Valle Vista
Rancho Laguna Park
Las Trampas Regional Wilderness Park
Reinhardt Redwood Regional Park
Joaquin Miller Park
Piedmont
Piedmont Park
Oakland DMV
Alamo
Camino Pablo
Moraga Rd
St Marys Rd
Rheem Blvd
Pinehurst Rd
Tice Valley Blvd
Rudgear Rd
Livorna Rd
Tunnel Rd
Shepherd Canyon Rd
Moraga Ave
Mandana Blvd
Skyline Blvd


GeoTracker
Search for a Project
Search for an Address
Home
Download Data
Tools
Contact Us
Map
Satellite
Night Mode
WILLOW PARK GOLF COURSE (T0600101549)
17007 REDWOOD RD
CASTRO VALLEY, CA 94546
LUST Cleanup Site
Status: Completed - Case Closed
RB Case #: 01-1676
Loc Case #: 01-1676
Chabot Staging Area
Anthony Chabot Campground
Chabot Park
Lake Chabot Rd
BAY-O-VISTA
East Bay Regional Park District - Public Safety
Leandro High School
Lake Chabot Regional Park
Fairmont Dr
Seven Hills Rd
Castro Valley Community Park
Castro Valley High School
Redwood Rd
FAIRMONT TERRACE
Miramar Ave
Somerset Ave
Heyer Ave
Cull Canyon Regional Recreation Area
Canyon Middle School
Crow Canyon Rd
Norris Canyon Rd
Palomares Hills Park
Jensen Ranch Elementary School
LEGEND - CHOOSE MORE SITES
LUST Cleanup Sites - REMOVE
Cleanup Program Sites - REMOVE
Military Cleanup Sites - REMOVE
Military Privatized Sites - REMOVE
Military UST Sites - REMOVE
Signifies a Closed Site
ACTIVE MAP COVERAGES:
• Military Bases - REMOVE
LIST SITES VISIBLE ON MAP
Keyboard shortcuts
Map data ©2022 Google
500 m
Terms of Use

Appendix E

Noise

Carbonator Noise Model - East Bay

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Generator	81	0.5
Generator	81	0.5

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Generator	78.0
Generator	78.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)		
81.0		Source
-9	enclosure	Hoover & Keith 2000
0	topography	
72.0		

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Moc

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Hoover & Keith 2000. Noise Control for Buildings and Manufacturing Plants.Prepared by Hoover & Keith. Houston, TX

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
Diesel Engine Scenario 1	72.0	@	50	soft	6	5	0.65	64.0	@	100
Diesel Engine Scenario 2	72.0	@	50	soft	6	5	0.65	59.3	@	150
Diesel Engine Scenario 3	72.0	@	50	soft	6	5	0.65	44.9	@	525
Diesel Engine Scenario (LDN Calc)	72.0	@	50	soft	6	5	0.65	53.5	@	250
							0.66			
							0.66			
							0.66			

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Long-Term Noise Measurement Summary

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Measurement Site: Proposed site of Edgewood hotel complex
Measurement Date: 8/21/2009
Project Name: Edgewood

Hour of Day (military time)	Sound Level Leq (dBA)	Sound Power =10*Log(dBA/10)	Computation of CNEL: Period of 24-Hour Day (1=included, 0=not) Day	Evening	Night	Sound Power Breakdown by Period of Day Day	Evening	Night
0:00	53.5	222,066	0	0	1	0	0	222,066
1:00	53.5	222,066	0	0	1	0	0	222,066
2:00	53.5	222,066	0	0	1	0	0	222,066
3:00	53.5	222,066	0	0	1	0	0	222,066
4:00	53.5	222,066	0	0	1	0	0	222,066
5:00	53.5	222,066	0	0	1	0	0	222,066
6:00	53.5	222,066	0	0	1	0	0	222,066
7:00	53.5	222,066	1	0	0	222,066	0	0
8:00	53.5	222,066	1	0	0	222,066	0	0
9:00	53.5	222,066	1	0	0	222,066	0	0
10:00	53.5	222,066	1	0	0	222,066	0	0
11:00	53.5	222,066	1	0	0	222,066	0	0
12:00	53.5	222,066	1	0	0	222,066	0	0
13:00	53.5	222,066	1	0	0	222,066	0	0
14:00	53.5	222,066	1	0	0	222,066	0	0
15:00	53.5	222,066	1	0	0	222,066	0	0
16:00	53.5	222,066	1	0	0	222,066	0	0
17:00	53.5	222,066	1	0	0	222,066	0	0
18:00	53.5	222,066	1	0	0	222,066	0	0
19:00	53.5	222,066	0	1	0	0	222,066	0
20:00	53.5	222,066	0	1	0	0	222,066	0
21:00	53.5	222,066	0	1	0	0	222,066	0
22:00	53.5	222,066	0	0	1	0	0	222,066
23:00	53.5	222,066	0	0	1	0	0	222,066
		Sum of Sound Power during Period wo/penalty				2,664,787	666,197	1,998,591
		Log Factor for CNEL Penalty (i.e., 10*log(x))				1	3	10
		Sound Power during Period with penalty				2,664,787	1,998,591	19,985,906

Total Daily Sound Power, with penalties	24,649,284
Hours per Day	24
Average Hourly Sound Power, with penalties	1,027,053
CNEL	60.1

Ldn computation on next page.

Computation of Ldn

Period of 24-Hour Day (1=included, 0=not)		Sound Power Breakdown by Period of Day	
Day	Night	Day	Night
0	1	0	222,066
0	1	0	222,066
0	1	0	222,066
0	1	0	222,066
0	1	0	222,066
0	1	0	222,066
0	1	0	222,066
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
1	0	222,066	0
0	1	0	222,066
0	1	0	222,066

Sum of Sound Power during Period wo/penalty	3,330,984	1,998,591
Log Factor for Penalty (i.e., 10*log(x))	1	10
Sound Power during Period with penalty	3,330,984	19,985,906

Total Daily Sound Power, with penalties	23,316,890
Hours per Day	24
Average Hourly Sound Power, with penalties	971,537
Ldn	59.9

Notes:

Computation of the CNEL based on 1-hour Leq measurements for each hour of a day are based on equation 2-27 on pg. 2-57 of Caltrans 2009.

Computation of the Ldn based on 1-hour Leq measurements for each hour of a day are based on equation 2-26 on pg. 2-56 of Caltrans 2009.

Log factors for the Ldn and CNEL penalties are provided in Table 2-12 on pg. 2-52 of Caltrans 2009.

Source:

California Deaprtment of Transportation (Caltrans), Divisiong of Environmental Analysis. 2009 (November). *2009 Technical Noise Supplement* . Sacramento, CA. Available: <http://www.dot.ca.gov/hq/env/noise/>. Accessed September 24, 2010.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560