3.4 BIOLOGICAL RESOURCES

This section presents the environmental setting, regulatory setting, and potential impacts of the VMP related to biological resources. The impact analysis describes the methodology used to evaluate significance and then presents the impact evaluation. Detailed information about special-status species database searches and surveys is provided in **Appendix D**, *Biological Resources Information*, of this DEIR. *Note that all figures cited in this section appear at the end of the section.*

3.4.1 Environmental Setting

To identify existing biological conditions in the VMP area, the following information sources, among others, were reviewed:

- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) Report (USFWS 2020a, provided in Appendix D of this DEIR)
- California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife [CDFW] 2020) and California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California (CNPS 2020) queries for the following U.S. Geological Survey (USGS) 7.5-minute quadrangles: Briones Valley, Hayward, Hunters Point, Las Trampas Ridge, Oakland East, Oakland West, Richmond, San Leandro, and Walnut Creek (provided in Appendix D of this DEIR)
- California Native Plant Society, East Bay Chapter (CNPSEB) Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties Database (CNPSEB 2020)
- eBird.org records for the VMP area (eBird 2020)

Methods

Field Surveys

Field surveys to map land cover and vegetation and to identify potentially suitable habitat for special-status species within the VMP area were conducted over several weeks by Horizon biologists in 2017, with supplemental site visits conducted in spring 2019 and spring 2020. Biologists visited those portions of the VMP area known from background research (including Laurel Marcus and Associates et al. 2010, USFWS 2010a, USFWS 2015, Bartosh et al. 2010, and Jurjavcic et al. 2015) to have potentially sensitive biological resources on foot. Some portions of the VMP area were observed with binoculars due to limited access. Some parcels that were completely developed were mapped using aerial imagery. Portions of some parcels were mapped using vegetation signatures from aerial imagery. Wildlife species observed or recognized by signs such as scat, tracks, burrows, nests, bird songs, or calls during the survey were identified and data collected. An inventory of plant and wildlife species observed during the 2017 field surveys is provided in Appendix D of this DEIR.

Habitat Classification and Mapping

Habitats were mapped using the California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988). This classification system was chosen because it is appropriate for California landscapes such as the Oakland Hills, relevant to wildlife, accessible to the public, can be input into the predictive fire models that were used to develop the VMP, and is flexible enough to be used for habitat types over a large survey area. Habitat classification types were entered into ArcGIS 10.3 software to create a "vegetation and land cover" data layer covering the entire VMP area, based on field survey data and interpretation of aerial imagery (**Figure 3.4-1**; all figures appear at the end of this section). A crosswalk to other vegetation classification systems (e.g., Sawyer et al. 2009, CalVeg) is provided in Appendix D of this DEIR.

Riverine habitat was mapped using data from the Creek and Watershed Map of Western Alameda County (Sowers et al. 2010), while pond and lake data was mapped from the National Hydrography Dataset (USGS 2016) (**Figure 3.4-2**).

To provide additional information on habitats considered sensitive natural communities, these habitats were mapped using the classification system in *A Manual of California Vegetation* (Sawyer et al. 2009) and are shown in **Figure 3.4-3**.

Taxonomy and Nomenclature

Plant names follow the nomenclature in the Jepson eFlora (Jepson Flora Project 2020). Plants that are designated as invasive are those listed as moderate or high by the California Invasive Plant Council (Cal-IPC) (Cal-IPC 2020).

Habitats in the VMP Area

Topography and land use within the VMP area exhibit substantial variation. Most of the VMP area is situated in the hills of eastern Oakland, California. A smaller portion of the VMP area is located on parcels within urban/residential areas in the vicinity of SR 13 and I-580. Land uses include residential, transportation corridors, open space and park lands, and vacant lots. Elevations in the VMP area range from 100 feet above mean sea level (msl) at an urban parcel on Golf Links Road to approximately 1,540 feet above msl at the top of the ridgeline, near Chabot Science Center.

Prior to urbanization, vegetation in the VMP area was primarily grasslands and shrublands, (Nowak 1993). Only about 2.3 percent of land in the Oakland area was covered by forests, including coast redwood (*Sequoia sempervirens*) forests, coast live oak (*Quercus agrifolia*) stands, and riparian woodlands (Nowak 1993). Major logging of redwood forests occurred in the mid-1800s (Simon 2014). Between 1880 and 1920, large-scale tree planting was undertaken in the Oakland Hills, initially by Joaquin Miller and later by Frank Havens (Nowak 1993). Tree species planted included pines (*Pinus* spp.), acacia (*Acacia* spp.), and eucalyptus (*Eucalyptus* spp.) (Nowak 1993). Havens planted an estimated 3 million blue gum eucalyptus (*Eucalyptus globulus*) and Monterey pine (*Pinus radiata*) seedlings (Simon 2014).

Fire and vegetated fire hazard management have also shaped vegetation in the Oakland Hills. In the last 100 years, 14 significant fires have occurred in the Oakland Hills (City of Oakland 2017). This includes the 1991 Tunnel Fire, which burned 1,700 acres (City of Oakland 2017). Many of

the fires burned large areas, restarting succession of vegetation in these areas. Additionally, the City has conducted vegetated fire hazard management activities within the VMP area since 2003. Activities such as goat grazing, brush and French broom removal, mowing, hand removal of weeds, tree trimming, removal of sapling eucalyptus and Monterey pine trees, removal of dead or dying vegetation, and other vegetation management practices have shaped vegetation in the Oakland Hills by removing biomass and, in some cases, shifting successional processes.

The following discussion provides descriptions of habitats present within the VMP area. Terrestrial habitats are generally described in terms of vegetation present. Figure 3.4-1 shows the mapped habitats within the VMP area, and **Table 3.4-1** summarizes habitat area and percentage of the total VMP area. Each community type is described based on the habitat descriptions in the CWHR System and specific conditions encountered within the survey area. Wildlife species typically associated with these biological communities are also described below. Much of the information regarding typical wildlife associated with each habitat type is from the East Bay Regional Park District (EBRPD) Draft Wildfire Hazard Reduction and Resource Management Plan EIR (LSA 2009b).

Table 3.4-1. Habitats and Spatial Coverage within the VMP Area

Vegetative Habitat Type	Acres	Percentage
Coast Oak Woodland	630.6	28.1%
Redwood	141.4	6.3%
Valley/Foothill Riparian	1.4	0.1%
Eucalyptus	177.9	7.9%
Closed-cone Pine-Cypress	180.7	8.1%
Coastal Scrub	176.9	7.9%
Mixed Chaparral (Maritime Chaparral)	8.1	0.4%
Annual Grassland	258.1	11.5%
Perennial Grassland (Native Perennial Grassland)	13.4	0.6%
Freshwater Emergent Wetland	0.4	<0.1%
Urban	654.6	29.2%
Total	***2,253***	***100.0%***

Note: Riverine habitat was not directly mapped and is thus not included in the acreage total.

Terrestrial Habitats

Tree-Dominated

Coast Oak Woodland

This habitat is dominated by coast live oak; the canopy may range from open to relatively closed. This habitat is generally found along drainages within the Plan Area, but is also found along hillslopes and upland flats. In areas along drainages, California bay laurel (*Umbellularia californica*) is common, and may be co-dominant with coast live oak. California buckeye

(*Aesculus californica*) is occasionally found in this habitat type. The understory is variable in composition and includes species such as native California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), oso berry (*Oemleria cerasiformis*), ocean spray (*Holodiscus discolor*), woodfern (*Dryopteris arguta*) and swordfern (*Polystichum munitum*), as well as non-native Himalayan blackberry (*R. armeniacus*). Forests dominated by coast live oak are considered to be one of the most fire resistant tree-dominated habitats (Sugihara et al. 2006). The thick bark and small leaves of coast live oak contribute to the fire resistance of this habitat (Sugihara et al. 2006).

On hill slopes and other non-riparian areas, coast live oaks are generally the main canopy species, and may be more widely spaced. In these locations, various grasses are often dominant in the understory, including wild oats (*Avena* spp.) and ripgut brome (*Bromus diandrus*). Purple needlegrass (*Stipa pulchra [=Nasella pulchra]*) is occasionally found in the understory in coast oak woodlands with a more open canopy.

Coast oak woodland support a diverse assemblage of wildlife. Amphibians associated with this habitat include ensatina (*Ensatina eschscholtzii*), arboreal salamander (*Aneides lugubris*), and California slender salamander (*Batrachoseps attenuatus*) (LSA 2009a). Typical bird species include Nuttall's Woodpecker (*Picoides nuttallii*), Acorn Woodpecker (*Melanerpes formicivorus*), Western Scrub-Jay (*Aphelocoma californica*), Steller's Jay (*Cyanocitta stelleri*), Hutton's Vireo (*Vireo huttoni*), Oak Titmouse (*Baeolophus inornatus*), Violet-green Swallow (*Tachycineta thalassina*), Orange-Crowned Warbler (*Vermivora celata*), Bushtits (*Psaltriparus minimus*), and Dark-Eyed Junco (*Junco hyemalis*). Raptors, including Red-Shouldered Hawk (*Buteo lineatus*) and Cooper's Hawk (*Accipiter cooperii*) may also occur. Amphibians such as California newt (*Taricha torosa*) may be found in this habitat, particularly near streams. Small mammals common to oak woodlands include California mouse (*Peromyscus californicus*), dusky-footed woodrat (*Neotoma fuscipes*), as well as non-native eastern fox squirrel (*Sciurus niger*) (LSA 2009a). Larger mammals typically found in this habitat include bobcat (*Lynx rufus*), coyote (*Canis latrans*), and California mule deer (*Odocoileus hemionus californicus*).

Redwood Forest

Redwood forests are found in a few portions of the VMP area, largely along canyons and drainages within Joaquin Miller Park and Leona Heights Park. Coast redwood (*Sequoia sempervirens*) is the dominant tree in this habitat. Subdominant trees include coast live oak and bay laurel. The understory is dominated by ferns such as western swordfern (*Polystichum munitum*). Other common understory species include wild ginger (*Asarum caudatum*) and huckleberry (*Vaccinium ovatum*).

Redwood forests provide food, cover, and other habitat elements for a wide variety of wildlife species. Many species associated with coast oak woodland habitat may also be found in the redwood forest. Bird species typical of this habitat include Steller's Jay, Brown Creeper (*Certhia americana*), Hairy Woodpecker (*Picoides villosus*), Pacific Wren (*Troglodytes pacificus*), and Pacific-Slope Flycatcher (*Empidonax difficilis*).

Valley/Foothill Riparian

Valley foothill habitat is associated with the moderately sized and large drainages within the VMP area. Dominant species include willows (*Salix* spp.), mainly arroyo willow (*S. lasiolepis*), and

white alder (*Alnus rhombifolia*). Bigleaf maple (*Acer macrophyllum*) is found as a subdominant species, and red alder (*Alnus rubra*) is occasionally found.

This habitat may support many breeding birds, including Warbling Vireo (*Vireo gilvus*), Wilson's Warbler (*Cardellina pusilla*), Downy Woodpecker (*Picoides pubescens*), Northern Flicker (*Colaptes auratus*), Chestnut-Backed Chickadee (*Poecile rufescens*), Swainson's Thrush (*Catharus ustulatus*), Wilson's Warbler (*Cardellina pusilla*), Black-Headed Grosbeak (*Pheucticus melanocephalus*), Song Sparrow (*Melospiza melodia*), and Pacific-Slope Flycatcher. Many other bird species may use this habitat during migration. San Francisco dusky-footed woodrats (*Neotoma fuscipes annectens*) typically use this habitat, as do raccoons (*Procyon lotor*). Riparian habitat provides dispersal corridors for wildlife species. Riparian areas also provide important habitat for amphibians such as Sierran treefrog (*Pseudacris sierra*) and Coast Range newt (*Taricha torosa torosa*).

Eucalyptus Forest

Eucalyptus trees were introduced to the Oakland Hills from Australia, starting in the late 19th century (Nowak 1993). Blue gum eucalyptus is by far the most common eucalyptus species in this habitat. Other trees present as minor components of this community include coast live oak and bay laurel. Understory composition varies and may consist of eucalyptus saplings, shrubs, and non-native grasses such as wild oats, ripgut brome, and panic veldt grass (*Ehrharta erecta*). In some areas, especially in groves with mature eucalyptus trees, the understory is very sparse, in part due to the allelopathic (growth-suppressing) effects of the eucalyptus leaf litter (del Moral and Muller 1970). Thick litter may also shield bare soil from sunlight and enhance soil moisture retention. In areas where understory vegetation is present, common shrubs include French broom (*Genista monspessulana*), Scotch broom (*Cytisus scoparius*), poison oak (*Toxicodendron diversilobum*), and cotoneaster (*Cotoneaster* spp.).

Monarch butterflies (*Danaus plexippus*) are known to overwinter in specific eucalyptus groves along the California coast from Mendocino County south to Baja California, Mexico. While observations of some monarchs are known in the VMP area, substantial or significant monarch butterfly overwintering groves are not present in the VMP area (CDFW 2020, Western Monarch Count Resource Center 2020).

This habitat type provides roosts, perches, and nest sites for a number of bird species, especially raptors. Bird species commonly observed in eucalyptus forests in the VMP area include American Crow (*Corvus brachyrhynchos*), California Scrub-Jay (*Aphelocoma californica*), American Robin (*Turdus migratorius*), Great Horned Owl (*Bubo virginianus*), Red-Tailed Hawk (*Buteo jamaicensis*), and Red-Shouldered Hawk (*Buteo lineatus*). Eucalyptus litter creates micro-habitats for various small vertebrate species that occur in a variety of woodland habitats, including forest alligator lizard (*Elgaria multicarinata multicarinata*), Pacific gopher snake (*Pituophis catenifer catenifer*), and woodrat (*Neotoma* spp.) (Pearson 1988).

Closed-Cone Pine-Cypress

In the VMP area, closed-cone pine-cypress habitat is dominated by Monterey pine and Monterey cypress (*Hesperocyparis macrocarpa*). Large portions of the Oakland Hills were planted with these species by Joaquin Miller, Frank Haven, and others (Nowak 1993). Monterey pine is native to San Mateo, Monterey, and San Luis Obispo Counties and Monterey cypress is

native to Monterey County. Both species have been planted in parks and other urban areas throughout coastal California. Subdominant trees in this habitat include coast live oak and eucalyptus. The understory ranges from sparse to dense, and in some areas resembles coastal scrub habitat (described below). The understory can include species such as sticky monkey flower (*Mimulus aurantiacus*), coyote brush (*Baccharis pilularis*), poison oak, and western bracken fern (*Pteridium aquilinum* var. *pubescens*). Blue elderberry (*Sambucus nigra* ssp. *caerulea*) can be found occasionally scattered in this habitat. Other shrubs may include French broom and Scotch broom.

Bird species that use this habitat include Chestnut-Backed Chickadee, Pine Siskin (*Spinus pinus*), Hairy Woodpecker, Pygmy Nuthatch (*Sitta pygmaea*), Pacific Wren, and Western Bluebird (*Sialia mexicana*); in addition, a variety of migratory birds that may forage in this habitat. Raptors such as Great Horned Owl, Cooper's Hawk (*Accipiter cooperii*), Red-tailed Hawk, and Red-shouldered Hawk may use closed-cone pine-cypress habitat as nest sites. Small vertebrates may use this habitat, but it does not typically support the diverse wildlife assemblages associated with oak and riparian woodlands (LSA 2009a).

Shrub-Dominated

Coastal Scrub

Coastal scrub is dominated by shrub species, including California sagebrush (*Artemisia californica*) and coyote brush. Subdominant shrubs include coffeeberry (*Frangula californica*), sticky monkey flower, western bracken fern, and silver bush lupine (*Lupinus albifrons* var. *albifrons*). Understory species include various annual grasses. Emergent trees may be present at low cover. Some areas mapped as coastal scrub consist of less complex communities dominated by coyote brush or a mix of coyote brush and poison oak. French broom is occasionally a component of this community. These coyote brush–dominated habitats may have been grassland habitats in the past (McBride and Heady 1968). The coyote brush–dominated community generally supports fewer wildlife species, possibly due to lower plant diversity and simpler habitat structure (LSA 2009a). This habitat is typically found on slopes, and large areas are found in Grizzly Peak Open Space, Joaquin Miller Park, Knowland Park, and Sheffield Village Open Space, with smaller areas in other portions of the VMP area.

Birds associated with this habitat include California Towhee (*Melozone crissalis*), California Quail (*Callipepla californica*), Wrentit (*Chamaea fasciata*), Anna's Hummingbird (*Calypte anna*), Allen's Hummingbird (*Selasphorus sasin*), Western Scrub-jay, Bewick's Wren (*Thryomanes bewickii*), and Spotted Towhee (*Pipilo maculates*). Fence lizards (*Sceloporus* spp.) and forest alligator lizard may also be found in this habitat. Mammals typical of this habitat include deer mouse (*Peromyscus maniculatus*), brush rabbit (*Sylvilagus bachmani*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), and mountain lion (*Puma concolor*) (LSA 2009a). Coastal scrub provides suitable habitat for the Alameda whipsnake (*Masticophis lateralis euryxanthus*), federally listed as threatened.

Mixed Chaparral

In the VMP area, mixed chaparral habitat is dominated by chamise (*Adenostoma fasciculatum*) and typically found on dry, south-facing slopes in Knowland Park. Brittle leaf manzanita (*Arctostaphylos crustacea* ssp. *crustacea*) is present in this habitat (Jurjavcic et al. 2015). This

habitat type is also known as maritime chaparral, which is considered a rare remnant vegetation community (Jurjavcic et al. 2015). There is little to no canopy cover in this habitat, and shrubs may be very dense. Other common species in this habitat include sticky monkey flower, coyote brush, poison oak, and soap plant (*Chlorogalum pomeridianum*). Wildlife use of this habitat is similar to coastal scrub, described above. This habitat is highly adapted to rapidly recover in response to fire, and its structure is influenced by fire. Additionally, many plant species within this habitat are dependent upon fire for regeneration.

Grassland/Herbaceous

Grassland habitat supports a variety of native forbs, including California poppy (*Eschscholzia californica*), blue-eyed grass (*Sisyrinchium bellum*), annual lupine (*Lupinus bicolor*), dwarf owl's clover (*Triphysaria pusilla*), and purple owl's clover (*Castilleja exserta*). Non-native forbs present in grasslands include field mustard (*Brassica rapa*), wild radish (*Raphanus sativus*), yellow star-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), filarees (*Erodium* spp.), and milk thistle (*Silybum marianum*).

Various wildlife species use grasslands for breeding and/or foraging. Reptiles that breed in grassland habitats include western fence lizard (*Sceloporus occidentalis*) and California red-sided garter snake (*Thamnophis sirtalis infernalis*) (Kie 1988). Mammals typical of this habitat include California ground squirrel (*Otospermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), and coyote (Kie 1988). Annual grasslands provide foraging habitat for raptors, including Barn Owl (*Tyto alba*), Great Horned Owl, Red-tailed Hawk, and American Kestrel (*Falco sparverius*).

Annual Grassland

Non-native annual grasses such as barleys (*Hordeum* ssp.), bromes (*Bromus* spp.), wild oats, brome fescue (*Festuca bromoides*), and others dominate this community. Non-native perennial grasses in this community include Italian rye grass (*Festuca perennis*). Native grass species such as purple needlegrass (*Stipa pulchra*) are present at low cover in some areas mapped as annual grassland.

Perennial Grassland (Native)

Perennial grassland dominated by native species is found scattered within the more common annual grassland community. These relic stands are remnants of the native perennial grasslands that were more prevalent before non-native annual grasses were introduced to California (Stromberg and Griffen 1996). Native perennial grasses such as purple needlegrass, California oat grass (*Danthonia californica*), foothill needlegrass (*Stipa lepida*), and blue wildrye (*Elymus glaucus*) are characteristic species in this habitat. Non-native annual grasses including barleys, bromes, wild oats, and others are also common in this habitat type.

Perennial grassland dominated by native species is found in a few locations within the VMP area, such as Knowland Park (Bartosh et al. 2010) and Sheffield Village Open Space.

Developed/Landscaped

Urban/Developed

Urban/developed habitat includes paved and unpaved roads, buildings, median strips, lawns, yards, and landscaped parks. This habitat type consists of a mosaic of different vegetation types (McBride and Reid 1988). Most urban/developed habitat within the VMP area may also be classified as being within the "urban residential zone" or "suburban zone" (McBride and Reid 1988). Plant species composition and cover in this habitat varies because of its artificial character, human influence (e.g., mowing, irrigating, planting, weeding), and past disturbance. A variety of bird species may use this habitat, including Mourning Dove (*Zenaida macroura*), Anna's Hummingbird, American Robin (*Turdus migratorius*), Scrub-Jay, Northern Mockingbird (*Mimus polyglottos*), House Finch (*Haemorhous mexicanus*), Wrentit, Bushtit (*Psaltriparus minimus*), and Oak Titmouse (*Baeolophus inornatus*) (McBride and Reid 1988). Common wildlife in these areas includes raccoon, Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*) (McBride and Reid 1988). California mule deer (*Odocoileus hemionus californicus*) may also be found in this habitat.

Aquatic and Wetland Habitats

Riverine

Riverine habitat in the VMP area includes perennial, intermittent, and ephemeral streams. Major streams within the VMP area are shown on Figure 3.4-2. Perennial streams flow year-round, while intermittent streams dry down seasonally and ephemeral streams flow for only a short period. All of these streams provide water sources for wildlife and important habitat for aquatic species. Coast Range newt occurs in this habitat. Rainbow trout (*Oncorhynchus mykiss*) are known to occur in perennial streams in the VMP area, including Sausal, Palo Seco, and Shepherd Creeks (Laurel Marcus and Associates et al. 2010).

Freshwater Emergent Wetland

Freshwater emergent wetlands provide food, water, and cover for many bird species, and are among the most productive wildlife habitats in California (Kramer 1988). A small emergent wetland is located in the northeastern portion of Joaquin Miller Park between the Fern Creek trail and Skyline Boulevard. This wetland is dominated by California blackberry (*Rubus ursinus*) and rushes (*Juncus* spp.). A second small emergent wetland is located within Knowland Park and is dominated by rushes and sedges. An emergent wetland is also present in Garber Park. Small areas with emergent wetlands may be present along streams in the VMP area.

Sensitive Natural Communities in the VMP Area

Portions of the VMP area contain sensitive natural communities as identified by California Department of Fish and Wildlife (CDFW 2019a). Although Monterey pine forest and Monterey cypress (*Hesperocyparis macrocarpa*) stands are considered sensitive natural communities in their native range, these vegetation types within the VMP area represent stands that were planted and would not be considered sensitive in the VMP area. Global Rank (G) and State Rank (S) are listed. Natural communities with ranks of S1-S3 are considered Sensitive Natural Communities. Figure 3.4-3 shows mapped occurrences of the following sensitive natural communities in the VMP area:

- *Sequoia sempervirens* (redwood forest) Alliance (Alliance code 86.100.00, G3 S3): Joaquin Miller Park, Leona Heights Park, Dimond Canyon Park
- *Nassella* spp. – *Melica* spp. (needle grass – melic grass grassland) Alliance (Alliance code 41.151.00, G4 S4): Knowland Park, Sheffield Village Open Space
- *Umbellularia californica* (California bay forest) Alliance (Alliance code 74.100.00, G4 S3): Joaquin Miller Park, Dimond Canyon Park, Knowland Park, Sheffield Village Open Space
- *Diplacus aurantiacus* (bush monkeyflower scrub) Alliance (Alliance code 32.082.00, G3 S3?): Knowland Park, Sheffield Village Open Space
- *Arctostaphylos* (*crustacea*, *tomentosa*) (brittle leaf – woolly leaf manzanita chaparral) Alliance (Alliance code 37.308.00, G3 S3): Knowland Park
- *Alnus rubra* (red alder forest) Alliance (Alliance code 61.410.00, G5 S4): Dimond Canyon Park

Areas mapped as Freshwater Emergent Wetland and Valley/Foothill Riparian are generally considered sensitive natural communities. As described below in Section 3.4.2, "Regulatory Setting," wetlands and waters are protected by both federal and state regulations. Although not directly within the VMP area, the serpentine prairie located within Redwood Regional Park represents a sensitive natural community and is located immediately adjacent to the VMP area. It is closest to roadside treatment areas along Skyline Boulevard that are within the VMP area.

Critical Habitat

USFWS and NMFS have designed critical habitat for some species listed under the federal Endangered Species Act (ESA). Critical habitat is a specific geographic area that contains features essential to the conservation of a listed species and that may require special management and protection. The USFWS Critical Habitat Mapper (USFWS 2020b) and NMFS critical habitat shapefiles were consulted to determine the presence of designated Critical Habitat within the VMP area. Critical habitat for Alameda whipsnake is present within the VMP area (**Figure 3.4-4**).

Wildlife Movement Corridors and Nurseries

The VMP area is located within the WUI, where recreational trails and nearby residential development represent most of the surrounding land uses. Portions of the VMP area, particularly large parks (such as Joaquin Miller Park and Knowland Park) and parks along streams (such as Dimond Canyon Park and Leona Heights Park) and associated riparian habitat provide important movement corridors for wildlife.

Portions of the VMP area provide important habitat for wildlife, including breeding habitat. Grasslands, shrubs, trees, and other substrates within the VMP area provide nesting habitat for birds. Streams in the VMP area provide breeding habitat for amphibians and fish, while uplands provide breeding habitat for other wildlife. Trees in the VMP area provide breeding roost habitat for bats.

Biological Resources by Parcel Type and Topography

The VMP area encompasses a large area with various types of parcels and topographic features, including urban and residential areas, canyon areas, ridgetops, City parks and open spaces, and roadside clearance areas. While the discussion above summarizes habitat types present throughout the VMP area, the discussion that follows generally describes the types of habitats present on these various parcel types. The range of vegetation and habitat types on a parcel reflect site conditions such as the site's position in the watershed, physiographic setting, slope aspect, underlying geology and soil, soil moisture, and past land uses. Figure 2-2, sheets 1 through 10, in Chapter 2, *Project* Description, show the parcel types in the VMP.

Urban and Residential Areas

Urban and residential parcels contain a variety of habitat types (Figure 3.4-1), largely because of the artificial character of landscaping (e.g., planted, maintained) in these areas. These parcels are generally much smaller than other parcel types, but may still contain ecologically valuable plant and wildlife resources, especially if they are located near larger undeveloped parcels.

Canyon Areas

Canyon areas within the VMP area include portions of Garber Park, Dimond Canyon Park, Shepherd Canyon Park and the Montclair Railroad Trail, and Leona Heights Park.

Garber Park

Garber Park is dominated by coast live oak and bay laurel, with big leaf maple and California buckeye subdominant (Figure 3.4-1, Sheet 1). A grove of eucalyptus is also present. A small freshwater emergent wetland is located in the southeastern portion of the park. The volunteer group Garber Park Stewards has conducted regular restoration activities within the park to remove invasive species and restore native habitat. This park contains a diverse community of native plant species, including yarrow (*Achillea millefolium*), common snowberry (*Symphoricarpos albus*), and blue wildrye.

Dimond Canyon Park

Dimond Canyon Park is dominated by a mix of coast live oak and bay laurel (Figure 3.4-1, Sheet 2). A narrow band of riparian habitat follows Sausal Creek in the southern portion of park, although it is too narrow to appear at the mapped scale. At the southern end of Dimond Canyon Park is developed urban habitat, with structures, lawn, oak trees, and a demonstration garden of California native plants. The golf course to the north is also characterized as urban habitat. Redwoods become dominant in the portion of the park along Palo Seco Creek. The volunteer group Friends of Sausal Creek has conducted restoration activities within the park since 1996 (Laurel Marcus and Associates et al. 2010). The City has also initiated and managed large-scale restoration projects in Sausal Creek.

Shepherd Canyon Park and Montclair Railroad Trail

Shepherd Canyon Park contains a developed area with sports fields near Shepherd Canyon Road (Figure 3.4-1, Sheet 2). Outside of the developed area, the park is dominated by coast live oak woodland, with patchy areas of Monterey pine and cypress, annual grassland, and eucalyptus. Eucalyptus is dominant in the western portion of the Montclair Railroad Trail, and patches of

broom are also common. Coast live oak becomes dominant in the northeastern portion of the trail.

Leona Heights Park

A redwood forest community dominates the portion of Leona Heights Park along the stream. Further upslope, coast live oak becomes dominant. Broom is sporadically common along the trails within the oak-dominated habitat. Coastal scrub and annual grassland characterize the eastern portion of the park on more exposed south-facing slopes.

Ridgetop Areas

Ridgetop areas within the VMP area include portions of the North Oakland Regional Sports Field, Grizzly Peak Open Space, and City Stables.

North Oakland Regional Sports Field

The northern portion of the North Oakland Regional Sports Field is dominated by a eucalyptus forest. The understory of this forest is mainly broom, especially in the most northern portion of the site. Scattered coast live oak and bay laurel are present within the eucalyptus forest.

The central area of the North Oakland Regional Sports Field consists of urban/developed habitat, including sports fields and a fire road. A small area of riparian habitat is located along a stream that runs east to west across the central portion of the sports field. The southern portion of the site consists of coast oak woodland, with a small patch of coastal scrub, both along north-facing slopes.

Grizzly Peak Open Space

Grizzly Peak Open Space is dominated by two habitats. Coastal scrub is the dominant habitat in the northern and central portions of this area, mainly on south- and southeastern-facing slopes; a Monterey pine community is dominant is the southern and central portions of the area, often on northwestern-facing slopes. The Monterey pine community has an open canopy, and the species composition of the understory in this community is similar to the coastal scrub habitat. Dominant shrubs include coyote brush and sticky monkeyflower. Compared to earlier mapping efforts in this area (Federal Emergency Management Agency [FEMA] 2014), the VMP area mapping indicates that the extent of Monterey pine may have expanded. A portion of the southern part of the Grizzly Peak Open Space is characterized by a eucalyptus forest community.

City Stables

Habitat at the City Stables is characterized as urban, with most of the site being developed.

City Park Lands and Open Space

City park lands and open space within the VMP area include Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, and King Estate Open Space Park.

Sheffield Village Open Space

Sheffield Village Open Space is dominated by coast oak woodland and coastal scrub habitats, with patches of annual grassland present on some south- and west-facing slopes. The coastal scrub habitat is dominated by coyote brush in areas adjacent to the Lake Chabot Golf Course but is generally more diverse in areas toward the central portion of the open space.

Knowland Park

Knowland Park is the largest of the open space areas in the VMP area, covering approximately 470 acres. It contains a diverse assemblage of habitats and has been identified as a Botanical Protection Priority Area by the CNPSEB (Bartosh et al. 2010). It also contains the developed habitat of the Oakland Zoo. Coast oak woodlands dominate the northeastern portion of the park, as well as drainages throughout the park. Both coastal scrub and mixed chaparral (also known as maritime chaparral) are present, generally along south-facing slopes but also on some north-facing slopes. Coastal scrub in the eastern portion of the park is generally a simple assemblage of coyote brush and poison oak. This same species assemblage is also found in some of the coastal scrub community mapped south of Golf Links Road. Smaller patches of coastal scrub contain a more diverse mix of shrub species, including California sagebrush and lupines. Annual grasslands dominate the southern and central portions of the park, typically on south-facing slopes, with islands of native perennial grasslands dominated by purple needlegrass. Other native perennial grass species in the park include blue wildrye, California oat grass, and California brome (*Bromus carinatus*).

Joaquin Miller Park

Redwood forest covers most of the eastern portion of Joaquin Miller Park. Coast oak woodland is dominant along drainages in the eastern and northern portions of the park. The southwestern portion is landscaped and contains buildings and other developed spaces, including Woodminster Amphitheater, a nursery, dog play areas, ranger station, and community center. Stands of Monterey pine and Monterey cypress are scattered throughout the park, with a large stand west of the Sequoia Arena. A large stand of eucalyptus is found at the western edge of the park, near Castle Drive. Small areas of coastal scrub are also present, generally on south-facing slopes. Several canyons are present in the park, including Palo Seco and Cinderella Canyons and Fern Ravine.

The Chabot Space and Science Center and the associated pallid manzanita (*Arctostaphylos pallida*) restoration site are located adjacent to the park's northern property boundary, partially within the park and partially off site. Other populations of pallid manzanita are present, including on both sides of Skyline Boulevard near the Redwood Glen Trailhead, approximately 500 feet west of the Roberts Park main entrance (this is known as the "'Big Trees'" pallid manzanita population). Pallid manzanita planting areas are also located adjacent to the nursery.

Serpentine soils are located in the southernmost portion of the park, near the intersection of Skyline Boulevard and Joaquin Miller Road. These soils support occurrences of special-status plant species such as Presidio clarkia (*Clarkia franciscana*) and Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*).

King Estate Open Space Park

King Estate Open Space Park is dominated by annual grassland, with coast oak woodland present in drainages. Coastal scrub dominated by coyote brush is also present on slopes in some portions of the park. Acacias are present at the park's western boundary.

Roadside Clearance Areas

Roadside clearance areas are located throughout the VMP area and contain a variety of the habitats described above. These areas generally provide limited habitat for wildlife due to their proximity to roadways. As described above, a population of pallid manzanita is located on both sides of Skyline Boulevard near the Redwood Glen Trailhead in Joaquin Miller Park. The federally listed Presidio clarkia is known to occur on City-owned medians in the vicinity of Skyline Boulevard and Chadbourne Way (USFWS 2010a). This species also occurs on roadsides nearby, specifically along the north side of Kimberlin Heights Drive, Colgett Drive, and Crestmont Drive at the junction with Westfield Way (USFWS 2010a).

Special-Status Plant and Wildlife Species

Special-status plant and wildlife species identified as present or potentially occurring within the VMP area are listed, and photographs provided, in Appendix D of this DEIR. Analysis conducted for this DEIR identified 181 special-status plant species and 10 special-status animal species as documented to occur or having potential to occur in or near the VMP area.

Special-Status Plants

For purposes of this evaluation, special-status plants are plant species that are listed under or included in:

- the federal ESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- the California Endangered Species Act (CESA) as threatened, endangered, rare, or a candidate species;
- the CNPS's California Rare Plant Rank (CRPR) designations as rare or endangered with ranks of 1A, 1B, 2A, or 2B (defined in footnote of **Table 3.4-2**);
- the CRPR with ranks 3 or 4 (defined in footnote of Table 3.4-2); or
- the CNPSEB Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties Database with an A rank that are known from the Bay Hills region.

A list of special-status plant species known or thought to have potential for occurrence in the VMP area was compiled using CNPS lists (CNPS 2020, Lake 2020), and CNDDB records (CDFW 2020) (**Figure 3.4-5**). Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria (described under "California Environmental Quality Act" in Section 3.4.2, "Regulatory Setting" below), and adverse effects on these species may be

considered significant. Impacts on plants that are listed by the CNPS as CRPR 3 or 4 are also considered during CEQA review; because these species are typically not as rare as CRPR 1B or 2, however, impacts on them are less frequently considered significant. Additionally, plants with an A Rank on the CNPSEB Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties Database are included in this analysis, although these species may not meet CEQA's Section 15380 criteria.

Table 3.4-2 identifies special-status plant species that are federally listed or state listed as endangered or threated; plants that are considered "state rare"; CRPR 1, 2, 3 or 4 species; and CNPSEB A-ranked species that are known to have occurred or may occur in or near the VMP area. Special-status plant species with occurrence potential identified as "none" or "not expected" are included in Table D-1 of Appendix D of this DEIR. Their distribution, legal status, general habitat requirements, and known occurrences in the VMP area are also provided.

Special-Status Wildlife

For purposes of this evaluation, special-status wildlife are species that are:

- Listed under the ESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under the CESA as threatened, endangered, or a candidate species;
- Designated by CDFW as a California species of special concern; or
- Listed in the California Fish and Game (F&G) Code as a fully protected species (birds at Section 3511, mammals at Section 4700, reptiles and amphibians at Section 5050, and fish at Section 5515).

Table 3.4-3 identifies special-status wildlife species that are known to occur or may occur in or near the VMP area. Their distribution, legal status, general habitat requirements, potential to occur, and known occurrences in the VMP area are also provided. Special-status wildlife species with occurrence potential identified as "none" or "not expected" are included in Table D-2 of Appendix D of this DEIR. **Figure 3.4-6** shows known occurrences of special-status wildlife in the VMP area. Figure 3.4-4 shows critical habitat in the VMP area. These species are described further below.

Fish

Sausal Creek supports resident rainbow trout (*Oncorhynchus mykiss*) (Leidy et al. 2005, Laurel Marcus and Associates et al. 2010). The Sausal Creek watershed historically supported steelhead trout, the anadromous special-status form of *O. mykiss*; however, there is currently no evidence of anadromy in the *O. mykiss* population there (Leidy et al. 2005). Resident rainbow trout are not a special-status species.

Amphibians and Reptiles

Special-status reptiles with the potential to occur in the VMP area include western pond turtle (*Emys marmorata*), Alameda whipsnake, and California red-legged frog. Alameda whipsnake is

most likely to occur within coastal scrub and chaparral habitats, but this species may also use adjacent habitats such as grasslands and oak woodlands (USFWS 2011). Portions of the VMP area are within designated areas of critical habitat for this species, particularly the Grizzly Peak Open Space (Figure 3.4-4). Western pond turtles have the potential to occur within the VMP area within aquatic habitat such as perennial streams.

Birds

Special-status birds with the potential to occur in the VMP area include White-tailed Kite (*Elanus leucurus*), Golden Eagle (*Aquila chrysaetos*), and Yellow Warbler (*Setophaga petechial*).

Table 3.4-2. Special-Status Plant Species with Potential to Occur in the VMP Area

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Federally Listed or State-listed Endangered and Threatened Plant Species					
Arctostaphylos pallida pallid manzanita	FT	SE	1B.1	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. 180-460 meters. Blooms December through March.	**Present.** This species is present in Joaquin Miller Park, near Chabot Space and Science Center, and along Skyline Boulevard near these areas. Possible in Garber Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or closed-cone pine-cypress habitats).
Clarkia franciscana Presidio clarkia	FE	SE	1B.1	Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. Strict serpentine endemic. 20-305 meters. Blooms May through July.	**Present.** A CNDDB occurrence is present in the VMP area in Joaquin Miller Park, and in the median strip between Chadbourne Way and Skyline Boulevard. This species also occurs on roadsides nearby, specifically along the north side of Kimberlin Heights Drive, Colgett Drive, and Crestmont Drive at the junction with Westfield Way (USFWS 2010a). Possible in adjacent areas on serpentine substrate.
Plagiobothrys diffusus San Francisco popcornflower	-	SE	1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 45-360 meters. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area in Knowland Park, Joaquin Miller Park, Sheffield Village Open Space, King Estate Open Space Park, and urban and residential parcels (with annual or perennial grasslands).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
California Rare Plant Rank 1 and 2 Species					
Amsinckia lunaris bent-flowered fiddleneck	-	-	1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 3-795 meters. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland). A 1938 CNDDB occurrence from "southern slopes of Redwood Ridge" with 1-mile accuracy overlaps portions of Joaquin Miller Park.
Balsamorhiza macrolepis big-scale balsamroot	-	-	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1,465 meters. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or annual grassland).
Blepharizonia plumosa big tarplant	-	-	1B.1	Valley and foothill grassland. Dry hills and plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 30-505 meters. Blooms July through October.	**Possible.** Suitable habitat is present in the VMP area in Sheffield Village Open Space, Knowland Park, King Estate Open Space Park, and urban and residential parcels (with annual grassland).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Dirca occidentalis western leatherwood	-	-	1B.2	Broad-leafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 25-425 meters. Blooms January through April.	**Present.** A CNDDB occurrence is present in the VMP area in Joaquin Miller Park. Possible in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland).
Eriogonum luteolum var. *caninum* Tiburon buckwheat	-	-	1B.2	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie. Serpentine soils; sandy to gravelly sites. 0-700 meters. Blooms May through September.	**Present.** This species is present within the VMP area in Joaquin Miller Park. Possible on serpentine soils along roadside clearance areas in the Crestmont neighborhood and in serpentine areas along Skyline Boulevard.
Fissidens pauperculus minute pocket moss	-	-	1B.2	North coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 10-1,024 meters.	**Possible.** Suitable habitat is present in the VMP area.
Fritillaria liliacea fragrant fritillary	-	-	1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-400 meters. Blooms February through April.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or grassland).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Helianthella castanea Diablo helianthella	-	-	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. 45-1,070 meters. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or grassland).
Hemizonia congesta ssp. *congesta* congested-headed hayfield tarplant	-	-	1B.2	Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 20-560 meters. Blooms April through November.	**Present.** A documented occurrence is present in the VMP area (Lake 2020) in Knowland Park. Possible in Sheffield Village Open Space, King Estate Open Space Park, Joaquin Miller Park, and urban and residential parcels (with annual grassland).
Meconella oregana Oregon meconella	-	-	1B.1	Coastal prairie, coastal scrub. Open, moist places. 60-640 meters. Blooms March through April.	**Possible.** Suitable habitat is present in the VMP area in Grizzly Peak Open Space, Joaquin Miller Park, Leona Heights Park, and Knowland Park.
Polemonium carneum Oregon polemonium	-	-	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0-1,830 m. Blooms April through September.	**Possible.** Suitable habitat is present in the VMP area in Grizzly Peak Open Space, North Oakland Sports Field, Joaquin Miller Park, Leona Heights Park, King Estate Open Space Park, Knowland Park, and Sheffield Village Open Space.
Streptanthus albidus ssp. *peramoenus* (=*Streptanthus glandulosus* ssp. *glandulosus*) most beautiful jewelflower	-	-	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 95-1,000 meters. March through October.	**Present.** This species is present in the VMP area in Joaquin Miller Park (Lake 2020) and Knowland Park (OWLS 2017). Possible on serpentine soils along roadside clearance areas in the Crestmont neighborhood and in serpentine areas along Skyline Boulevard.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Viburnum ellipticum oval-leaved viburnum	-	-	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1,400 meters. Blooms May through June.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland).
California Rare Plant Rank 3 and 4 Species					
Androsace elongata ssp. *acuta* California androsace	-	-	4.2	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland, meadows and seeps, pinyon and juniper woodland. Highly localized and often overlooked due to small size. 150-1,200 meters. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland).
Calochortus umbellatus Oakland star-tulip	-	-	4.2	Chaparral, lower montane coniferous forest, broad-leafed upland forest, valley and foothill grassland, cismontane woodland. Often on serpentine. 100-700 meters. Blooms March through May.	**Present.** Suitable habitat is present in the VMP area. Documented in Knowland Park (Placemakers 2011), Joaquin Miller Park, and Leona Heights Park. Possible in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, North Oakland Regional Sports Field, Sheffield Village Open Space, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or annual grassland).
Castilleja ambigua var. *ambigua* johnny-nip	-	-	4.2	Coastal bluff scrub, coastal scrub, coastal prairie, marshes and swamps, valley and foothill grassland, vernal pool margins. 0-435 meters. Blooms March through August.	**Possible.** Suitable habitat is present in the VMP area in Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park, King Estate Open Space Park, and urban and residential parcels (with annual grassland).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Galium andrewsii ssp. *gatense* phlox-leaf serpentine bedstraw	-	-	4.2	Chaparral, cismontane woodland, lower montane coniferous forest. Dry, rocky places in serpentine soil. 150-1,450 meters. Blooms April through July.	**Possible.** Possible on serpentine soils along roadside clearance areas in the Crestmont neighborhood, in serpentine areas of Joaquin Miller Park, and in serpentine areas along Skyline Boulevard.
Leptosiphon acicularis bristly leptosiphon	-	-	4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Grassy areas, woodland, chaparral. 55-1,500 meters. Blooms April through July.	**Present.** Documented in Knowland Park in 2013 (Calflora 2020). Possible in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or grassland).
Leptosiphon grandiflorus large-flowered leptosiphon	-	-	4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland. Open, grassy flats, generally sandy soil. 5-1,200 meters. Bloom April through August.	**Possible.** Suitable habitat is present in the VMP area and there is one historic (1900) record near Skyline High School.
Micropus amphibolus Mt. Diablo cottonweed	-	-	3.2	Valley and foothill grassland, cismontane woodland, chaparral, broad-leafed upland forest. Bare, grassy or rocky slopes. 45-825 meters. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with coast oak woodland or grassland).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Microseris sylvatica sylvan microseris	-	-	4.2	Chaparral, cismontane woodland, Great Basin scrub, pinyon and juniper woodland, valley and foothill grassland. Serpentine. 45-1,500 meters. Blooms March through June.	**Possible.** Possible on serpentine soils along roadside clearance areas in the Crestmont neighborhood, in serpentine areas of Joaquin Miller Park, and in serpentine areas along Skyline Boulevard.
Ranunculus lobbii Lobb's aquatic buttercup	-	-	4.2	Cismontane woodland, valley and foothill grassland, vernal pools, north coast coniferous forest. Mesic sites. Generally occurs in wetlands. 15-470 meters. Blooms February through May.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, and King Estate Open Space Park.
Plants of Local or Regional Significance (California Native Plant Society, East Bay Chapter A-Ranked Species)					
Adiantum aleuticum five-finger fern	-	-	A1	Riparian, mixed evergreen forest, chaparral, yellow pine forest, red fir forest, lodgepole forest, subalpine forest, Douglas-fir forest.	**Possible.** Suitable habitat is present in the VMP area.
Agoseris apargioides var. *apargioides* seaside agoseris	-	-	A2	Forest, grassland, sand/ sandstone, scrub. Blooms April through May.	**Possible.** Suitable habitat is present in the VMP area.
Agoseris heterophylla var. *cryptopleura* mountain dandelion	-	-	A1	Many plant communities, weak serpentine affinity. Blooms May through June.	**Possible.** Suitable habitat is present in the VMP area.
Agoseris heterophylla var. *heterophylla* annual agoseris	-	-	A1	Many plant communities, weak serpentine affinity. Blooms May through June.	**Possible.** Suitable habitat is present in the VMP area.
Agoseris retrorsa spear-leaved agoseris	-	-	A2	Scrub, oak woodland, conifer forest. Blooms April through August.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Agrostis hallii Hall's bent grass	-	-	A2	Forest, woodland. Blooms May through July.	**Present.** Present in Knowland Park (OWLS 2017).
Allium amplectens narrow-leaved onion	-	-	A2	Dry slopes, serpentine, woodlands. Blooms April through July.	**Possible.** Suitable habitat is present in the VMP area.
Allium falcifolium sickle-leaved onion	-	-	A1	Rock/talus/scree, serpentine. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Alnus rubra red alder	-	-	A2	Riparian. Blooms February through March.	**Present.** Present in Garber Park and Leona Heights Park (OWLS 2017).
Amaranthus californicus Californian amaranth	-	-	A2	Wetlands. Blooms July through October.	**Possible.** Suitable habitat is present in the VMP area.
Amaranthus powellii Powell's amaranth	-	-	A1	Disturbed habitats. Blooms June through October.	**Possible.** Suitable habitat is present in the VMP area.
Ammannia coccinea long-leaved ammannia	-	-	A1	Riparian, wetlands. Blooms June through August.	**Possible.** Suitable habitat is present in the VMP area.
Aphyllon vallicolum California broom-rape	-	-	A2	Forest, woodlands. Blooms July through September.	**Possible.** Suitable habitat is present in the VMP area.
Apocynum androsaemifolium bitter dogbane	-	-	A2	Chaparral, dry slopes, rock/talus/ scree. Blooms May through October.	**Present.** Present in Dimond Canyon Park (Lake 2020).
Asclepias speciosa showy milkweed, milkweed	-	-	A2	Many habitats, including roadsides. Blooms May through September.	**Possible.** Suitable habitat is present in the VMP area.
Asarum caudatum wild-ginger	-	-	A2	Forest, redwood forest. Blooms March through August.	**Present.** Present in Dimond Canyon Park and Joaquin Miller Park (OWLS 2017).
Berberis nervosa Oregon grape	-	-	A1	Forest. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area.
Brodiaea terrestris ssp. *terrestris* dwarf brodiaea	-	-	A2	Grassland, wetlands, woodlands. Blooms April through July.	**Present.** Present in Knowland Park (OWLS 2017).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Calycadenia multiglandulosa sticky calycadenia	-	-	A2	Rock/talus/scree, scrub, serpentine. Blooms May through October.	**Possible.** Possible on serpentine soils along roadside clearance areas in the Crestmont neighborhood, in serpentine areas of Joaquin Miller Park, and in serpentine areas along Skyline Boulevard.
Carex brevicaulis short-stemmed sedge	-	-	A1	Rock/talus/scree, sand/ sandstone. Blooms April through May.	**Possible.** Suitable habitat is present in the VMP area.
Carex densa dense sedge	-	-	A2	Wetlands. Blooms April through July.	**Present.** Present in Knowland Park (OWLS 2017). Possible in other wetlands.
Carex globosa round-fruited sedge	-	-	A2	Well-drained soil of wooded areas, edges. Blooms April through June.	**Present.** Present in Knowland Park (OWLS 2017).
Carex gracilior slender sedge	-	-	A1	Forest, grassland, wetlands. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Carex leptopoda slender-footed sedge, short-scaled sedge	-	-	A1	Wetlands. Blooms May through August.	**Present.** Present in Beaconsfield Canyon and Knowland Park (OWLS 2017). Possible in other wetlands.
Carex multicostata many-ribbed sedge	-	-	A1	Dry soil, meadows, open conifer forest. Blooms July through September.	**Present.** Present in Knowland Park (OWLS 2017).
Carex senta western rough sedge, rough sedge	-	-	A2	Riparian, wetlands Blooms April through August.	**Possible.** Suitable habitat is present in the VMP area.
Castilleja applegatei ssp. *martinii* wavy-leaved indian paintbrush	-	-	A2	Chaparral, scrub. Blooms May through September.	**Possible.** Suitable habitat is present in the VMP area.
Castilleja exserta ssp. *latifolia* owl's-clover	-	-	A1	Coastal bluff, sand/sandstone. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Castilleja subinclusa ssp. *franciscana* Franciscan indian paintbrush	-	-	A1	Chaparral and scrub. Blooms March through July.	**Present.** Present in Knowland Park (OWLS 2017).
Chorizanthe polygonoides var. *polygonoides* knotweed spineflower	-	-	A1	Gravel, sand/sandstone. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area. Historically (1891) documented in the vicinity of Leona Heights (Lake 2020).
Chrysolepis chrysophylla var. *minor* golden chinquapin	-	-	A2	Chaparral, forest, sand/sandstone. Blooms June through September.	**Present.** Present in Joaquin Miller Park (OWLS 2017) and along Grizzly Peak Boulevard (Lake 2020).
Cicendia quadrangularis timwort	-	-	A2	Grassland. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Cicuta douglasii water-hemlock	-	-	A2	Freshwater marsh, wetlands. Blooms June through September.	**Possible.** Suitable habitat is present in the VMP area.
Cirsium quercetorum brownie thistle	-	-	A2	Grassland, woodlands. Blooms April through August.	**Possible.** Suitable habitat is present in the VMP area.
Clarkia purpurea ssp. *purpurea* purple clarkia	-	-	A2	Grassland. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Clarkia purpurea ssp. *viminea* large godetia	-	-	A1	Open, grassy or shrubby places. Blooms May through July.	**Possible.** Suitable habitat is present in the VMP area.
Clintonia andrewsiana red clintonia	-	-	A1	Redwood forest. Blooms May through July.	**Possible.** Suitable habitat is present in the VMP area.
Corallorhiza maculata var. *maculata* spotted coralroot	-	-	A2	Forests and woodlands. Blooms May through August.	**Present.** Present in Garber Park, Joaquin Miller Park, and Knowland Park (OWLS 2017).
Cornus glabrata brown dogwood	-	-	A1	Riparian. Blooms May through June.	**Possible.** Suitable habitat is present in riparian habitat in the VMP area.
Cryptantha micromeres minute-flowered cryptantha	-	-	A1	Burns, chaparral, woodlands. Blooms March through July.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Cryptantha microstachys Tejon cryptantha	-	-	A2	Chaparral, woodlands. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Cryptantha torreyana var. *pumila* Torrey's cryptantha	-	-	A2	Forest, dry slopes. Blooms April through June.	**Present.** Present in Knowland Park (Lake 2020).
Cuscuta californica var. *californica* California dodder	-	-	A1	Chaparral, grassland. Blooms May through September.	**Possible.** Suitable habitat is present in the VMP area.
Cyperus erythrorhizos red-rooted cyperus	-	-	A2	Riparian. Blooms July through October.	**Possible.** Suitable habitat is present in the VMP area.
Cyperus niger black sedge	-	-	A1	Wetlands. Blooms July through November.	**Present.** Present in Leona Heights Park (OWLS 2017).
Cyperus odoratus coarse cyperus	-	-	A1	Wetlands. Blooms July through October.	**Possible.** Suitable habitat is present in the VMP area.
Deinandra corymbosa (=*Hemizonia corymbosa*) coast tarweed	-	-	A2	Coastal bluff, grassland. Blooms March through November.	**Present.** Present in Knowland Park (OWLS 2017).
Delphinium californicum ssp. *californicum* coast larkspur, California larkspur	-	-	A2	Chaparral. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Dendromecon rigida bush poppy	-	-	A2	Burns, chaparral, scrub. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Dicentra formosa Pacific bleeding heart	-	-	A2	Forest and redwood forest. Blooms March through July.	**Present.** Present in Marjorie Saunders Park (OWLS 2017).
Dichondra donelliana California ponysfoot	-	-	A1	Coastal prairie, coastal scrub. Blooms January through March.	**Present.** Present in Joaquin Miller Park (OWLS 2017).
Echinodorus berteroi burhead	-	-	A1	Freshwater marsh.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Eclipta prostrata false daisy	-	-	A1	Wetlands. Blooms June through August.	**Possible.** Suitable habitat is present in the VMP area.
Elatine brachysperma waterwort	-	-	A1	Freshwater marsh, wetlands. Blooms April through September.	**Possible.** Suitable habitat is present in the VMP area.
Elatine californica waterwort	-	-	A2	Freshwater marsh. Blooms March through August.	**Possible.** Suitable habitat is present in the VMP area.
Elymus stebbinsii Stebbins' wheat grass	-	-	A1	Chaparral, forest, dry slopes. Blooms June through July.	**Possible.** Suitable habitat is present in the VMP area.
Epilobium ciliatum ssp. *watsonii* San Francisco willowherb	-	-	A2	Freshwater marsh, riparian. Blooms May through October.	**Possible.** Suitable habitat is present in the VMP area.
Ericameria arborescens golden-fleece	-	-	A2	Chaparral, forest, woodlands. Blooms August through November.	**Possible.** Suitable habitat is present in the VMP area.
Erigeron petrophilus var. *petrophilus* rock daisy	-	-	A2	Rock/talus/scree, serpentine. Blooms May through September.	**Possible.** Suitable habitat is present in the VMP area.
Eriogonum fasciculatum var. *foliolosum* leafy California buckwheat, California buckwheat	-	-	A1	Dry slopes. Blooms June through August.	**Present.** Present in Joaquin Miller Park, although these observations are planted (Lake 2020).
Eriogonum luteolum var. *luteolum* golden-carpet wild buckwheat, golden carpet	-	-	A2	Gravel, sand/sandstone, serpentine. Blooms July through November.	**Present.** Historically (1901) present in Joaquin Miller Park (Lake 2020).
Eschscholzia caespitosa tufted poppy	-	-	A1	Chaparral. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area.
Euonymus occidentalis var. *occidentalis* burning bush	-	-	A1	Riparian. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Festuca elmeri Elmer's fescue	-	-	A1	Moist, wooded slopes, under trees in rich soil. Blooms May through July.	**Possible.** Suitable habitat is present in the VMP area.
Gaultheria shallon salal	-	-	A1	Forest and redwood forest. Blooms April through July.	**Present.** Present in Joaquin Miller Park (OWLS 2017).
Gilia achilleifolia ssp. *achilleifolia* California gilia	-	-	A2	Open or shaded, generally grassy places, sandy or rocky soil. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area.
Gilia tricolor ssp. *tricolor* birds-eye gilia	-	-	A2	Grassland. Blooms June through August.	**Possible.** Suitable habitat is present in the VMP area.
Githopsis diffusa ssp. *robusta* southern bluecup	-	-	A1	Shaded or disturbed area, burns. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Githopsis specularioides common bluecup	-	-	A2	Burns, chaparral, woodland. Blooms April through May.	**Possible.** Suitable habitat is present in the VMP area.
Glyceria xoccidentalis western manna grass	-	-	A2	Wetlands. Blooms June through August.	**Possible.** Suitable habitat is present in the VMP area.
Hordeum jubatum ssp. *jubatum* foxtail barley	-	-	A2	Many plant communities. Blooms May through July.	**Possible.** Suitable habitat is present in the VMP area.
Horkelia californica var. *californica* California horkelia	-	-	A1	Grassland, scrub. Blooms March through September.	**Possible.** Suitable habitat is present in the VMP area.
Horkelia californica var. *elata* tall horkelia	-	-	A2	Wetlands, riparian. Blooms June through September.	**Possible.** Suitable habitat is present in the VMP area.
Hosackia stipularis var. *stipularis* stipulate lotus	-	-	A1	Chaparral. Blooms April through June.	**Present.** Present in Joaquin Miller Park (OWLS 2017).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Iris douglasiana Douglas iris	-	-	A2	Mixed evergreen forest, coastal prairie. Blooms March through July.	**Present.** Present in Beaconsfield Canyon, Dimond Canyon Park, Garber Park, Joaquin Miller Park, Knowland Park, and Marjorie Saunders Park (OWLS 2017).
Juncus oxymeris pointed rush	-	-	A1	Swales, wetlands. Blooms July through August.	**Possible.** Suitable habitat is present in the VMP area.
Juncus phaeocephalus var. *phaeocephalus* brownheaded rush	-	-	A2	Wetlands. Blooms June through August.	**Possible.** Suitable habitat is present in the VMP area.
Layia chrysanthemoides smooth layia	-	-	A1	Grassland. Blooms March through June.	**Present.** Present in King Estate Open Space Park (Lake 2020).
Layia gaillardioides woodland layia	-	-	A2	Scrub, woodlands. Blooms March through August.	**Possible.** Suitable habitat is present in the VMP area.
Layia hieracioides tall layia	-	-	A2	Open, semi-shady, or disturbed sites, in light soil. Blooms April through July.	**Possible.** Suitable habitat is present in the VMP area.
Leptosiphon liniflorus flax-flowered leptosiphon	-	-	A1	Scrub, serpentine, woodlands. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Ligusticum apiifolium Pacific lovage	-	-	A2	Coastal bluff, grassland, scrub, woodlands. Blooms June through July.	**Present.** Present in the VMP area on Grizzly Peak Boulevard, approximately 500 feet west of the intersection with Fish Ranch Road.
Lilium pardalinum ssp. *pardalinum* leopard lily	-	-	A1	Freshwater marsh, riparian. Blooms May through August.	**Possible.** Suitable habitat is present in the VMP area.
Limosella acaulis southern mudwort	-	-	A2	Wetlands. Blooms May through October.	**Possible.** Suitable habitat is present in the VMP area.
Lithophragma bolanderi Bolander starflower	-	-	A2	Open slopes, riparian, woodland. Blooms February through July.	**Possible.** Suitable habitat is present in the VMP area.
Lomatium caruifolium var. *caruifolium* caraway-leaved lomatium	-	-	A2	Wetland riparian. Blooms March-May.	**Present.** Present in the VMP area in Joaquin Miller Park, on the Sinawik Loop trail (Lake 2020).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Lupinus affinis fleshy lupine	-	-	A1	Coastal prairie, northern coastal scrub, mixed evergreen forest. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Lythrum californicum California loosestrife	-	-	A2	Wetlands. Blooms April through September.	**Possible.** Suitable habitat is present in the VMP area.
Madia anomala plump-seeded madia	-	-	A1	Grassland. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Mentha canadensis American cornmint, Japanese peppermint	-	-	A1	Wetlands, riparian. Blooms July through October.	**Possible.** Suitable habitat is present in the VMP area.
Micropus californicus var. *subvestitus* slender cottonweed	-	-	A1	Many plant communities, dry slopes. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Microseris acuminata Sierra Foothills microseris	-	-	A2	Grassland. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Microseris campestris San Joaquin microseris	-	-	A1	Grassland, vernal pool. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Microseris elegans elegant microseris	-	-	A2	Grassland, vernal pool. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Mimulus douglasii (=*Diplacus douglasii*) Douglas monkeyflower	-	-	A2	Chaparral, gravel, rock/talus/scree, serpentine, woodlands. Blooms February through April.	**Possible.** Possible on serpentine soils along roadside clearance areas in the Crestmont neighborhood, in serpentine areas of Joaquin Miller Park, and in serpentine areas along Skyline Boulevard. This species was reported from the Serpentine Prairie in Redwood Regional Park in 1991 but has not been found in subsequent surveys (Lake 2020).
Minuartia californica California sandwort	-	-	A1	Chaparral, grassland, dry slopes, rock/talus/scree, sand/sandstone, serpentine. Blooms February through April.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Monardella douglasii Douglas' monardella	-	-	A2	Chaparral, grassland, serpentine, woodlands. Blooms May through July.	**Possible.** Suitable habitat is present in the VMP area.
Morella californica wax myrtle	-	-	A2	Forest, redwood forest, scrub. Blooms March through April.	**Possible.** Suitable habitat is present in the VMP area.
Muilla maritima common muilla	-	-	A2	Alkali areas, grassland, wetlands, dry slopes, scrub, serpentine, woodlands. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area.
Oenothera elata ssp. *hookeri* evening-primrose	-	-	A2	Wetlands. Blooms June through September.	**Possible.** Suitable habitat is present in the VMP area.
Osmorhiza brachypoda California cicely	-	-	A2	Forest, riparian, woodlands. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Oxalis oregana redwood sorrel	-	-	A1	Redwood forest. Blooms February through August.	**Present.** Present in the VMP area in Dimond Canyon and Joaquin Miller Park (OWLS 2017).
Oxalis pilosa hairy wood-sorrel	-	-	A1	Chaparral, grassland, scrub. Blooms February through September.	**Possible.** Suitable habitat is present in the VMP area.
Pectocarya pusilla little pectocarya	-	-	A2	Grassland, woodlands. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area.
Penstemon heterophyllus var. *purdyi* foothill penstemon	-	-	A1	Chaparral, forest, grassland. Blooms May through June.	**Possible.** Suitable habitat is present in the VMP area.
Pentachaeta alsinoides tiny pentachaeta	-	-	A2	Grassland. Blooms March through June.	**Possible.** Suitable habitat is present in the VMP area.
Pentachaeta exilis ssp. *exilis* meager pentachaeta	-	-	A1	Grassland. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Perideridia oregana yampah	-	-	A1	Dry slopes, rock/talus/scree, woodlands. Blooms July through August.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Persicaria lapathifolia willow weed	-	-	A2	Wetlands. Blooms June through October.	**Possible.** Suitable habitat is present in the VMP area.
Petasites frigidus var. *palmatus* western sweet coltsfoot	-	-	A1	Riparian, redwood forest. Blooms January through April.	**Possible.** Suitable habitat is present in the VMP area.
Phacelia ramosissima branching phacelia	-	-	A2	Dry slopes, dry wash, grassland. Blooms April through October.	**Possible.** Suitable habitat is present in the VMP area.
Phacelia tanacetifolia tansy phacelia	-	-	A2	Gravel, sand/sandstone. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Phalaris arundinacea reed canary grass	-	-	A1	Wetlands, riparian. Blooms May through September.	**Possible.** Suitable habitat is present in the VMP area.
Phyla nodiflora turkey tangle frogfruit	-	-	A1	Wetland, riparian. Blooms May through June.	**Present.** Present in the VMP area in Leona Heights Park (OWLS 2017).
Pinus attenuata knobcone pine	-	-	A1	Burns, chaparral, forest, sand/ sandstone. Blooming period not provided.	**Possible.** Suitable habitat is present in the VMP area.
Pinus coulteri Coulter pine	-	-	A2	Chaparral, forest. Blooms May through June.	**Present.** Present in the VMP area in Knowland Park (OWLS 2017).
Piperia elongata dense flower rein orchid	-	-		Forest, scrub. Blooms May through July.	**Present.** Present in the VMP area in Joaquin Miller Park (OWLS 2017).
Plagiobothrys fulvus var. *campestris* field popcornflower, fulvous popcornflower	-	-	A2	Grassland, gravel, sand/sandstone, woodlands. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Poa howellii Howell's bluegrass	-	-	A1	Chaparral, rock/talus/scree, woodlands. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Polypodium scouleri leather-leaf fern	-	-	A2	Coastal prairie, coastal strand, redwood forest, mixed evergreen forest, coastal bluff.	**Possible.** Suitable habitat is present in the VMP area. Species occurrences documented near VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Polystichum californicum California sword fern	-	-	A1	Redwood forest, mixed evergreen forest.	**Possible.** Suitable habitat is present in the VMP area.
Pseudognaphalium biolettii Bioletti's cudweed	-	-	A2	Dry slopes, sand/sandstone. Blooms April through June.	**Present.** Present in the VMP area in Joaquin Miller Park (OWLS 2017).
Pseudognaphalium microcephalum white everlasting	-	-	A1	Chaparral, dry slopes. Blooms June through August.	**Possible.** Suitable habitat is present in the VMP area.
Quercus chrysolepis canyon live oak	-	-		Chaparral, scrub. Blooms April through May.	**Present.** Present in the VMP area in Joaquin Miller Park and Knowland Park (OWLS 2017).
Quercus durata var. *durata* leather oak	-	-	A2	Chaparral, serpentine. Blooms April through May.	**Possible.** Suitable habitat is present in the VMP area on serpentine soils.
Quercus parvula var. *shrevei* island scrub oak	-	-	A1	Chaparral, woodlands. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Ranunculus occidentalis var. *occidentalis* western buttercup	-	-	A2	Grassland, woodlands. Blooms March through July.	**Possible.** Suitable habitat is present in the VMP area.
Ribes aureum var. *gracillimum* golden currant	-	-	A2	Riparian. Blooms February through May.	**Possible.** Suitable habitat is present in the VMP area.
Rorippa palustris ssp. *palustris* marsh yellow-cress	-	-	A2	Wetlands. Blooms March through September.	**Possible.** Suitable habitat is present in the VMP area.
Salix scouleriana Scouler's willow	-	-	A2	Wetlands. Blooms February through June.	**Possible.** Suitable habitat is present in the VMP area.
Sambucus racemosa var. racemosa red elderberry	-	-	A1	Riparian. Blooms May through July.	**Present.** Present in the VMP area in Beaconsfield Canyon and Joaquin Miller Park (OWLS 2017).
Sanicula laciniata coast sanicle	-	-	A2	Chaparral, scrub, woodlands. Blooms March through May.	**Present.** Present in the VMP area in Joaquin Miller Park and Knowland Park (OWLS 2017).

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Scutellaria californica California skullcap	-	-	A2	Scrub, woodlands. Blooms June through July.	**Possible.** Suitable habitat is present in the VMP area.
Setaria parviflora knotroot bristle grass, perennial foxtail	-	-	A1	Chaparral, grassland. Blooms May through September.	**Present.** Present in the VMP area in Joaquin Miller Park (OWLS 2017).
Sidalcea diploscypha fringed checkerbloom	-	-	A1	Grassland, woodlands. Blooms April through May.	**Possible.** Suitable habitat is present in the VMP area.
Sisyrinchium californicum golden-eyed-grass	-	-	A1	Freshwater marsh. Blooms March through August.	**Possible.** Suitable habitat is present in the VMP area.
Spiranthes romanzoffiana hooded ladies' tresses	-	-	A1	Coastal bluff, freshwater marsh. Blooms May through September.	**Possible.** Suitable habitat is present in the VMP area.
Stachys ajugoides bugle hedge nettle	-	-	A2	Wetlands. Blooms April through September.	**Possible.** Suitable habitat is present in the VMP area.
Stephanomeria elata stephanomeria	-	-	A2	Dry slopes. Blooms July through November.	**Possible.** Suitable habitat is present in the VMP area.
Stylocline gnaphaloides everlasting neststraw	-	-	A2	Sand/sandstone. Blooms March through May.	**Present.** Present in the VMP area in Joaquin Miller Park (Lake 2020).
Symphyotrichum lanceolatum var. *hesperium* marsh aster	-	-	A2	Riparian, wetlands. Blooms July through August.	**Possible.** Suitable habitat is present in the VMP area.
Taxus brevifolia pacific yew	-	-	A1	Woodlands. Blooms June through July.	**Possible.** Suitable habitat is present in the VMP area.
Tetrapteron graciliflorum hill sun cup	-	-	A2	Grassland, dry slopes, scrub, woodlands. Blooms March through April.	**Possible.** Suitable habitat is present in the VMP area.
Trifolium barbigerum bearded clover	-	-	A2	Wetlands. Blooms February through May.	**Possible.** Suitable habitat is present in the VMP area.
Trifolium depauperatum var. *depauperatum* dwarf sack clover	-	-	A2	Grassland, wetlands. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.

Scientific Name Common Name	Status[1]			Habitat Association	Potential to Occur in the VMP Area
	Federal	State	CRPR/ EBCNPS		
Trifolium dichotomum branched indian clover	-	-	A2	Coastal bluff, grassland, dry slopes, woodlands. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Trifolium macraei Macrae's clover, double-headed clover	-	-	A1	Sand/sandstone, many plant communities. Blooms March through May.	**Possible.** Suitable habitat is present in the VMP area.
Trifolium olivaceum olive clover	-	-	A2	Valley grassland, foothill woodland. Blooms April through May.	**Possible.** Suitable habitat is present in the VMP area.
Trifolium wormskioldii cow clover	-	-	A1	Wetlands. Blooms May through October.	**Possible.** Suitable habitat is present in the VMP area.
Trillium ovatum ssp. *ovatum* white trillium	-	-	A2	Forest, redwood forest. Blooms February through April.	**Present.** Present in the VMP area in Joaquin Miller Park (OWLS 2017).
Triodanis biflora Venus' looking-glass	-	-	A2	Burns, many plant communities, disturbed. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Triphysaria versicolor ssp. *faucibarbata* smooth owl's-clover	-	-	A2	Grassland. Blooms April through June.	**Possible.** Suitable habitat is present in the VMP area.
Trisetum canescens tall trisetum	-	-	A2	Forest. Blooms May through August.	**Possible.** Suitable habitat is present in the VMP area.
Viola adunca ssp. *adunca* western blue violet	-	-	A1	Forest. Blooms April through August.	**Present.** Present in the VMP area in Joaquin Miller Park (OWLS 2017).
Viola glabella stream violet	-	-	A2	Forest, riparian. Blooms March through August.	**Present.** Present in the VMP area in Joaquin Miller Park (OWLS 2017).
Viola sempervirens evergreen violet, redwood violet	-	-	A1	Redwood forest. Blooms January through July.	**Present.** Present in the VMP area in Dimond Canyon Park and Joaquin Miller Park (OWLS 2017).

Notes: [1] Status Codes:

Federal

FE Listed as endangered under the Endangered Species Act

FT Listed as threatened under the Endangered Species Act

State

SE Listed as endangered under the California Endangered Species Act
ST Listed as threatened under the California Endangered Species Act
SC Candidate for listing under the California Endangered Species Act
SR Listed as rare under the Native Plant Protection Act

California Rare Plant Rank (CRPR)

1B Plants rare, threatened, or endangered in California and elsewhere
2B Plants rare, threatened, or endangered in California but more common elsewhere
3 Plants about which information is needed-a review list
4 Plants of limited distribution-a watch list
.1 seriously threatened in California
.2 moderately threatened in California
.3 not very threatened in California

East Bay Chapter of the California Native Plant Society (EBCPS)

A1 Species known from 2 or less botanical regions in Alameda and Contra Costa Counties, either currently or historically.
A1x Species previously known from Alameda or Contra Costa Counties, but now believed to have been extirpated, and no longer occurring here.
A2 Species currently known from 3 to 5 regions in the two counties, or, if more, meeting other important criteria such as rare statewide, small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc.

Table 3.4-3. Special-status Wildlife Species with Potential to Occur in the VMP Area

Scientific Name Common Name	Status[1]		Habitat Association	Potential to Occur in the VMP Area
	Federal	State		
Federal or State Endangered, Threatened, and Candidate Animal Species				
Masticophis lateralis euryxanthus Alameda whipsnake	FT	ST	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats. Mostly 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.	**Present.** Present in the VMP area in Knowland Park (Placemakers 2011). Possible in Grizzly Peak Open Space (critical habitat for this species), North Oakland Sports Field, Joaquin Miller Park, and Sheffield Village Open Space.
Rana draytonii California red-legged frog	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.	**Possible.** Suitable habitat is present in the VMP area in North Oakland Sports Field, Dimond Canyon Park, Joaquin Miller Park, Leona Heights Park, Knowland Park, and Sheffield Village Open Space.
California Fully Protected or Species of Special Concern				
Emys marmorata western pond turtle	-	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Requires basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometer from water for egg-laying.	**Present.** Suitable habitat is present in the VMP area, including aquatic portions of Garber Park, North Oakland Sports Field, Dimond Park, Joaquin Miller Park, Leona Heights Park, Knowland Park, and Sheffield Village Open Space. Observed in the Sausal Creek watershed (Lowe 2000).
Aquila chrysaetos Golden Eagle	-	SP	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.	**Possible (Foraging only).** Species may use grasslands for foraging, but nesting is not expected. Possible foraging in King Estate Open Space Park, Knowland Park, and Sheffield Village Open Space.

Scientific Name Common Name	Status[1]		Habitat Association	Potential to Occur in the VMP Area
	Federal	State		
Elanus leucurus White-tailed Kite	-	SP	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.	**Possible.** Suitable habitat is present in the VMP area. Possible in King Estate Open Space Park, Knowland Park, and Sheffield Village Open Space.
Setophaga petechia Yellow Warbler	-	SSC	Riparian plant associations near water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants, including cottonwoods, sycamores, ash, and alders.	**Possible.** Suitable habitat is present in the VMP area in riparian areas within North Oakland Sports Field, Dimond Canyon Park, Joaquin Miller Park, Leona Heights Park, Knowland Park, and Sheffield Village Open Space.
Antrozous pallidus pallid bat	-	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.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with forested or grassland habitats).
Eumops perotis californicus western mastiff bat	-	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.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with forested or grassland habitats).

Scientific Name Common Name	Status[1]		Habitat Association	Potential to Occur in the VMP Area
	Federal	State		
Lasiurus blossevillii western red bat	-	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.	**Possible.** Suitable habitat is present in the VMP area in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park, Joaquin Miller Park, King Estate Open Space Park, and urban and residential parcels (with forested or grassland habitats).
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	-	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.	**Present.** This species is present in both tree-dominated and shrub-dominated communities in the VMP area. Present in Joaquin Miller Park and Knowland Park. Possible in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, and King Estate Open Space Park.

Notes: [1] Status Codes:

Federal

FE	Listed as endangered under the Endangered Species Act
FT	Listed as threatened under the Endangered Species Act
FC	Candidate for listing under the Endangered Species Act
FD	Delisted under the Endangered Species Act

State

SE	Listed as endangered under the California Endangered Species Act
ST	Listed as threatened under the California Endangered Species Act
SC	Candidate for listing under the California Endangered Species Act
SD	Delisted under the California Endangered Species Act
SSC	California Species of Special Concern
SP	State fully protected

Mammals

Special-status mammals with the potential to occur in the VMP area include western red bat (*Lasiurus blossevillii*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), and San Francisco dusky-footed woodrat. Western red bats and western mastiff bats may roost in trees in the VMP area. San Francisco dusky-footed woodrat stick houses were observed in many locations within the VMP area and were most often encountered in oak woodlands and riparian areas.

3.4.2 Regulatory Setting

Biological resources are regulated by the following federal, state, and local laws and ordinances.

Federal Laws, Regulations, and Policies

Federal Endangered Species Act

The ESA (16 USC Section 1531 et seq.; 50 CFR Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. USFWS and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC Section 1532). The USFWS regulations define the term "harm" to include significant habitat modification or degradation that kills or injures wildlife by significantly impairing essential behavioral patterns (50 CFR Section 17.3). Section 7 of the ESA (16 USC Section 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Listed plant species are legally protected from take under the ESA only if they occur on federal lands or if the project requires a federal action, such as a Clean Water Act (CWA) Section 404 fill permit from USACE. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from USFWS or NMFS for otherwise lawful activities that may incidentally result in "take" of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit.

Based on a review of recent ecological studies of other projects in the vicinity; aerial photos and topographic maps; and other relevant scientific literature, technical databases, and resource agency reports, the following federally listed wildlife species occur, or have potential to occur, in the VMP area: Alameda whipsnake and California red-legged frog (*Rana draytonii*). If the VMP would result in take of a federally listed wildlife species, incidental take approval would be required through either Section 7 or Section 10 consultation with USFWS.

In addition, the following federally listed plant species occur, or have potential to occur, in the VMP area: pallid manzanita and Presidio clarkia. If VMP activities requiring a Section 404 permit would result in adverse effects on any federally listed plant species, Section 7 consultation with USFWS would be required. However, the City would not need incidental take approval for impacts on federally listed plant species occurring on City-owned land.

USFWS and NMFS have designed critical habitat for some listed species. Critical habitat is a specific geographic area that contains features essential to the conservation of a listed species and that may require special management and protection. Critical habitat for Alameda whipsnake is present within the VMP area (Figure 3.4-4).

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 USC Section 1801 et seq.) governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

The Pacific Fisheries Management Council (PFMC) has designated EFH for the following three FMPs in the VMP area: Pacific coast groundfish, coastal pelagic species, and Pacific coast salmon. Thus, if the VMP would result in impacts on EFH, consultation with NMFS would be required. Such consultation would occur during the Section 7 or 10 consultation process (see "Federal Endangered Species Act" above).

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Sections 703–712; 50 CFR Subchapter B) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory birds, or part, nests, or eggs of such migratory birds, that are listed in wildlife protection treaties between the United States and Canada, Mexico, Japan, and Russia. The MBTA applies to almost all avian species that are native to California. The MBTA prohibits the take of such species, including the removal of nests, eggs, and feathers. It requires that all federal agencies consult with USFWS on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect migratory birds.

The Migratory Bird Treaty Reform Act amends the MBTA so that nonnative birds or birds that have been introduced by humans to the United States or its territories are excluded from protection under the MBTA.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs each federal agency taking actions that have or may have adverse impacts on migratory bird populations to work with USFWS to develop a memorandum of understanding to promote the conservation of migratory bird populations.

Federal Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions (16 USC Section 668). Under the Bald and Golden Eagle Protection Act, it is a violation to "take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest or egg, thereof." "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb." "Disturb" is further defined in 50 CFR Part 22.3 as:

> "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Clean Water Act

The CWA (33 USC Section 1251 et seq.) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters. Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the U.S., which includes all navigable waters, their tributaries, lakes and ponds, and impoundments of jurisdictional waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include ephemeral features, diffuse stormwater runoff and directional sheet flow over upland, non-tidal drainage and irrigation ditches excavated on dry land, prior converted cropland, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, vernal pools, water-filled depressions, stormwater control features, groundwater recharge structures, water reuse and wastewater recycling structures, and waste treatment systems (33 CFR Section 328.3). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under the provisions of CWA Section 404. Activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of CWA.

Section 401 of the CWA requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U.S. In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that may result in a discharge to waters of the U.S. (including wetlands or vernal pools) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA.

State Laws, Regulations, and Policies

California Endangered Species Act

The CESA (F&G Code Chapter 1.5, Sections 2050-2116 and 14 Cal. Code Regs. Sections 783-787.9) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, CDFW has jurisdiction over state-listed species. CDFW regulates activities that may result in "take" (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of individuals listed under the CESA. Habitat degradation or modification is not expressly included in the definition of "take" under the F&G Code. CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

Based on a review of recent ecological studies of other projects in the vicinity; aerial photographs and topographic maps; and other relevant scientific literature, technical databases, and resource agency reports, one state-listed wildlife species occurs, or has potential to occurs, in the VMP area: Alameda whipsnake. Three state-listed plant species occur, or have potential to occur, in the VMP area: pallid manzanita, Presidio clarkia, and San Francisco popcornflower (*Plagiobothrys diffusus*). If VMP activities would result in take of a state-listed species, an incidental take permit would be required through Section 2081 consultation with CDFW.

California Environmental Quality Act

Under CEQA (Pub. Res. Code Section 21000 et seq.), a project is normally considered to result in a significant environmental impact on biological resources if it substantially affects a rare or endangered species or the habitat of that species; substantially interferes with the movement of resident or migratory fish or wildlife; or substantially diminishes habitat for fish, wildlife, or plants. The CEQA Guidelines (14 Cal. Code Regs. Section 15380) define "endangered" as when an animal or plant's survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors." A species of animal or plant is rare when either "[a]lthough not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens or [t]he species is likely to become endangered in the future." A species is presumed threatened or endangered based on its listing under the CESA and ESA, as well as any other species that meet the criteria of the resource agencies or local agencies (e.g., CDFW-designated "species of special concern" and species ranked as CRPR 1 or 2).

California Fish and Game Code

The F&G Code includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977 (NPPA) and the CESA (F&G Code Sections 2050–2098). The NPPA (F&G Code Section 1900-1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances.

The CESA prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under the CESA as endangered or threatened. Section 2080 of the F&G Code prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. CDFW may issue an incidental take permit authorizing

the take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions.

F&G Code Sections 3503 and 3513 protect native and migratory birds, including their nests and eggs, from all forms of take. In addition, Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

CDFW regulates activities that will interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the F&G Code requires that CDFW be notified of lake or streambed alteration activities. If CDFW subsequently determines that such an activity might adversely affect an existing fish and wildlife resource, it has the authority to issue a streambed alteration agreement, including requirements to protect biological resources and water quality.

Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code Section 13000 et seq.). The Porter-Cologne Act broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because the Porter-Cologne Act applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that shallow waters of the state include headwaters, wetlands, and riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, which became effective on May 28, 2020. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may be included in required mitigation packages when granting permits that involve impacts to waters of the state, as well as to other areas requiring permit authorization from the RWQCBs.

Pursuant to the CWA, projects that are regulated by USACE must also obtain a Section 401 water quality certification from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the state require water quality certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if USACE does not, such as for riparian habitats which are buffers to waters of the state. Under the Porter-Cologne Act, the SWRCB and RWQCBs also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and waste discharge requirements for certain point-source

and non-point-source discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Any activities within the VMP area that affect waters of the United States or waters of the state would require Section 401 water quality certification and/or waste discharge requirements from the San Francisco Bay RWQCB. Most wetlands and open water features in the VMP area are considered both waters of the United States and waters of the State. It is possible that some features, such as ditches, that are not considered waters of the United States may be subject to the jurisdiction of the San Francisco Bay RWQCB as waters of the state.

Local Laws, Regulations, and Policies

Applicable local plans, policies, regulations, and ordinances are presented below.

City of Oakland Protected Trees Ordinance

Oakland Municipal Code Chapter 12.36 (Protected Trees) was enacted to protect and preserve trees by regulating their removal; prevent unnecessary tree loss and minimize environmental damage from improper tree removal; encourage appropriate tree replacement plantings; effectively enforce tree preservation regulations; and promote the appreciation and understanding of trees. The ordinance defines protected trees as California or coast live oak trees measuring 4 inches in trunk diameter at breast height (dbh, defined as approximately 4.5 feet above existing grade) or larger, and any other tree (except eucalyptus and Monterey pine) measuring 9 inches dbh or larger on any property. Protected trees also include Monterey pine trees where they occur on City property and in development-related situations where more than five Monterey pine trees per acre are proposed to be removed. Monterey pine trees are not protected in non-development-related situations or in situations involving removal of five or fewer trees per acre; however, public posting and written notice of proposed tree removal to the City's Office of Parks and Recreation is required per Section 12.36.070A and Section 12.36.080A, respectively. Except as noted above, eucalyptus and Monterey pine trees are not protected by this ordinance. To remove any protected trees, a tree removal permit is required.

City of Oakland Hazardous Trees Ordinance

Oakland Municipal Code Chapter 12.40 (Hazardous Trees) defines a "hazardous tree" as any tree that poses an imminent threat to life or property, as determined by inspection using the criteria established by Section 12.40.030. The ordinance defines procedures for removing hazardous trees to prevent personal injury or damage to neighboring properties.

City of Oakland Creek Protection Ordinance

The purpose and intent of the City of Oakland's Creek Protection Ordinance (Oakland Municipal Code Chapter 13.16) is to:

- Safeguard and preserve creeks and riparian corridors in a natural state;
- Preserve and enhance creekside vegetation and wildlife;
- Prevent activities that would contribute significantly to flooding, erosion, or sedimentation; destroy riparian areas; or inhibit their restoration;

- Enhance recreational and beneficial uses of creeks;
- Control erosion and sedimentation;
- Protect drainage facilities; and
- Protect the public health and safety, and public and private property.

The ordinance includes permitting guidelines for development and construction projects taking place in or near creeks. Activities subject to the guidelines include the clearing of vegetation for wildfire hazard reduction purposes. Vegetation management activities on any creekside property require a Creek Protection Permit. "Creekside properties" are defined as properties located within Oakland, as identified by the Watershed Programs Manager, that have a creek or riparian corridor crossing the property and/or are contiguous to a creek or riparian corridor. Creekside properties within the VMP area are shown on Figure 3.4-2. The intent is to ensure that permitted activities will avoid or limit, to the extent feasible, adverse impacts to creeks. For vegetation management activities within creekside properties under the VMP, OFD will obtain a Creek Protection Permit, as outlined in the ordinance.

A Creek Protection Plan is required for approval of a Creek Protection Permit when the work falls within Categories III and IV (Oakland Municipal Code Section 13.16.130). The Creek Protection Plan must include BMPs to protect the creek. Category III includes work that may adversely impact the creek beyond the 20-foot setback from the top of bank of the creek and is within 100 feet of the centerline of the creek. Category IV includes work that is conducted between the centerline of the creek and the 20-foot setback from the top of bank of the creek.

City of Oakland General Plan

The Open Space, Conservation, and Recreation Element of the City's General Plan (City of Oakland 1996) is the official policy document addressing the management of open land, natural resources, and parks in Oakland. The following objectives and policies from the City of Oakland General Plan are relevant to the VMP:

Objective OS-1: Resource Conservation Areas - To conserve and appropriately manage undeveloped areas in Oakland which have high natural resource value, scenic value, or natural hazards which preclude safe development.

> **Policy OS-1.1:** Wildland Parks - Conserve existing City and Regional Parks characterized by steep slopes, large groundwater recharge areas, native plant and animal communities, extreme fire hazards, or similar conditions. These areas are included in Figure 4 as Potential Resource Conservation Areas. Manage such areas to protect public health and safety and conserve natural resources.

Objective CO-1: Soil Conservation – To protect and preserve soil as a resource for healthy plant, animal, and human life.

Objective CO-6: Surface Waters – To protect the ecology and promote the beneficial uses of Oakland's creeks, lakes, and nearshore waters.

Policy CO-6.1: Creek Management – Protect Oakland's remaining natural creek segments by retaining creek vegetation, maintaining creek setbacks, and controlling bank erosion. Design future flood control projects to preserve the natural character of creeks and incorporate provisions for public access, including trails, where feasible. Strongly discourage projects which bury creeks or divert them into concrete channels.

Objective CO-7: Plant Resources – To minimize the loss of native plant communities and restore these communities where they have been damaged or lost, and to preserve Oakland's trees unless there are compelling safety, ecological, public safety, or aesthetic reasons for their removal.

Policy CO-7.1: Protection of Native Plant Communities – Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from the potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts to these communities.

Policy CO-7.2: Native Plant Restoration – Encourage efforts to restore native plant communities in areas where they have been compromised by development or invasive species, provided that such efforts do not increase an area's susceptibility to wildfire.

Policy CO-7.3: Forested Character – Make every effort to maintain the wooded or forested character of tree-covered lots when development occurs on such lots.

Policy CO-7.4: Tree Removal – Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.

Policy CO-7.5: Non-native Plant Removal – Do not remove non-native plants within park and open space areas solely because they are non-natives. Plant removal should be related to other valid management policies, including fire prevention.

Policy CO-7.6: Rehabilitation of Damaged or Dead Vegetation – Encourage programs which rehabilitate, enhance, or replace damaged or dead vegetation as appropriate.

Objective CO-8: Wetlands – To conserve wetlands so that they may continue to provide habitat for fish and wildlife.

Policy CO-8.1: Mitigation of Development Impacts – Work with federal, state, and regional agencies on an on-going basis to determine mitigation measures for development which could potentially impact wetlands. Strongly discourage development with unmitigable adverse impacts.

Objective CO-9: Rare, Endangered, and Threatened Species – To protect rare, endangered, and threatened species from the impacts of urbanization.

Policy CO-9.1: Habitat Protection – Protect rare, endangered, and threatened species by conserving and enhancing their habitat and requiring mitigation of potential adverse impacts when development occurs within habitat areas.

Objective CO-10: Vegetation Management – To manage vegetation so that the risk of catastrophic wildfire is minimized.

> **Policy CO-10.1:** Flammable Vegetation Control – Subject to the availability of City resources and at the direction of the City Council and applicable City departments, control flammable vegetation on public and private open space lands in the Oakland Hills to reduce wildfire hazards.
>
> **Policy CO-10.2:** Fire Prevention Measures – As determined necessary by the City, require individual property owners and developers in high hazard areas to reduce fire hazards on their properties through a range of preventative measures. Landscaping and site planning in these high hazard areas should minimize future wildfire hazards.

Objective CO-11: Wildlife – To sustain a healthy wildlife population within the City of Oakland.

> **Policy CO-11.1:** Protection from Urbanization – Protect wildlife from the hazards of urbanization, including loss of habitat and predation by domestic animals.
>
> **Policy CO-11.2:** Migratory Corridors – Protect and enhance migratory corridors for wildlife. Where such corridors are privately owned, require new development to retain native habitat or take other measures which help sustain local wildlife population and migratory patterns.

North Oakland Hill Area Specific Plan

North Oakland Hill Area Specific Plan (City of Oakland 1986) is a document addressing land use, infrastructure, zoning, and development in a portion of the Oakland hills. The area covered by this specific plan is generally located along the ridgeline northwest of Shepherd Canyon Road. This specific plan includes vegetation management prescription.

3.4.3 Impact Analysis

Methodology

The biological resources analysis for the DEIR relies on both a review of existing databases and a baseline evaluation of biological resources that were conducted during VMP development, as described in Section 3.4.1. The following impact analysis focuses on reasonably foreseeable effects of the VMP compared with baseline conditions at the time the NOP was published (November 2019).

As described in Section 3.1, "Overview," certain activities that are proposed as part of the VMP have been undertaken by OFD in the past on an ongoing basis. Therefore, the baseline was established by averaging the amount of vegetation management activities conducted annually over the last 15 years, which amounts to 900 acres of goat grazing and 400 acres of roadside treatment and small parcel activities, using a combination of hand labor and mechanical techniques. These activities have not typically involved removal of mature trees, although saplings have been removed. Under the VMP, treatment of roadside areas and urban/residential parcels would be anticipated to encompass 500 acres per year, an increase of 25 percent over baseline conditions.

The proposed VMP activities that have not been routinely conducted in the past are primarily tree removal and herbicide application. In terms of spatial distribution, areas of mechanical and hand labor have largely been restricted to roadside areas and small parcels under baseline conditions. Under baseline conditions, grazing has occurred within Shepherd Canyon Park, Leona Heights Park, Beaconsfield Canyon, North Oakland Sports Field, Grizzly Peak Open Space, Sheffield Village Open Space, Knowland Park and Arboretum, King Estate Open Space Park, and Joaquin Miller Park. With implementation of the VMP, mechanical and hand labor techniques would take place more broadly within the boundaries of parks and open spaces, rather than being limited to roadsides or access points.

It is important to note that the potential impacts associated with vegetation management activities to reduce fuel loads and associated fire risk are generally temporary in nature as vegetation and habitats change and develop over time. The VMP does not propose vegetation type conversion (such as conversion from oak woodland to grassland). Additionally, site-specific biological resource surveys would be conducted, as appropriate and as required by the mitigation measures identified below, before the implementation of individual VMP treatment projects.

The potential direct and indirect effects of the VMP are described and evaluated according to significance criteria from Appendix G of the CEQA Guidelines and the City's adopted significance criteria. Direct impacts are those that would be caused by VMP activities and occur at the same time and place as those activities, whereas indirect impacts are those that are reasonably foreseeable and caused by VMP activities, but would occur at a different time or place. For project impacts that would be significant, feasible mitigation measures are identified, and any residual impact is evaluated to determine whether mitigation measures would reduce the impact to a less-than-significant level or whether the impact would remain significant and unavoidable.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines and the City of Oakland CEQA Thresholds of Significance, it was determined that the VMP would result in a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Fundamentally conflict with local policies or ordinances protecting biological resources, or conflict with the provisions of an adopted HCP or Natural Community Conservation Plan (NCCP);

- Fundamentally conflict with the City of Oakland Tree Protection Ordinance (Oakland Municipal Code Chapter 12.36) by removal of protected trees under certain circumstances; or

- Fundamentally conflict with the City of Oakland Creek Protection Ordinance (Oakland Municipal Code Chapter 13.16) intended to protect biological resources.

Environmental Impacts

The impact analysis describes the potential effects on biological resources that may result from VMP activities, including mechanical treatment techniques, hand labor techniques, herbicide application, and grazing.

Impact BIO-1: Potential Adverse Effects on Special-Status Plant Species (*Less than Significant with Mitigation*)

Impact BIO-1A: State-Listed and/or Federally Listed Special-Status Plants (*Less than Significant with Mitigation*)

As described in Section 3.4.1, "Environmental Setting," three state-listed and/or federally listed (hereafter jointly referred to as "listed") plant species are known to occur or have potential to occur in the VMP area: pallid manzanita, Presidio clarkia, and San Francisco popcornflower.

As described above, pallid manzanita is a shrub that is present within Joaquin Miller Park, including on both sides of Skyline Boulevard near the Redwood Glen Trailhead, approximately 500 feet west of the Roberts Park main entrance (known as the "'Big Trees'" pallid manzanita population). Pallid manzanita planting areas are also located adjacent to the nursery. The Chabot Space and Science Center and the associated pallid manzanita restoration site is located partially within park boundaries and partially off site adjacent to the park's northern property boundary. Habitat for this species includes broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub. Potentially suitable habitat is present for this species in Garber Park, Dimond Canyon Park, Shepherd Canyon Park, Leona Heights Park, North Oakland Regional Sports Field, Sheffield Village Open Space, Knowland Park, King Estate Open Space Park, and on some urban and residential parcels that have coast oak woodland or closed-cone pine-cypress habitats). The pathogen *Phytophthora cinnamomi* has killed individual pallid manzanitas within the VMP area (USFWS 2015).

Presidio clarkia, an annual plant, is also present within Joaquin Miller Park, on serpentine soils located in the southernmost portion of the park, near the intersection of Skyline Boulevard and Joaquin Miller Road. Presidio clarkia is also known to occur on City-owned medians near Skyline Boulevard and Chadbourne Way (USFWS 2010a). This species also occurs on roadsides nearby, specifically along the north side of Kimberlin Heights Drive, Colgett Drive, and Crestmont Drive at the junction with Westfield Way (USFWS 2010a). There are also other observations of this species in the nearby Crestmont neighborhood (CDFW 2020).

San Francisco popcornflower has not been observed within the VMP area; however, a 1997 CNDDB occurrence is located near the intersection of Redwood Road and Skyline Boulevard. This occurrence is listed in the EBCNPD database with a note stating that the identification is uncertain (Lake 2020). This species occurs in vernally moist grassland habitats. Potentially suitable habitat for this species is present in Knowland Park, Joaquin Miller Park, Sheffield Village Open Space, King Estate Open Space Park, and urban and residential parcels that have annual grasslands.

As described in Section 2.5 in Chapter 2, *Project* Description, of this DEIR, OFD will reach out to the local park stewardship groups during the annual work plan development process to solicit input or feedback on current vegetation management needs in the specific park, as well as potential treatment options, treatment timing, and local site conditions. This conversation will include discussion of any special-status plants (naturally occurring or planted by stewardship groups) that are known to occur near or within treatment areas.

Impacts to listed plants that would adversely affect more than 5 percent of a given population for state-listed or federally listed species, 10 percent for CRPR List 1B and 2 species, and 20 percent for CRPR List 3 or 4 or A-ranked species would be significant, as they would have an increased likelihood of reducing the resiliency of local populations to repopulate and recover[6]. The lower thresholds reflect the relative regional rarity of the different categories of these species (state-listed or federally listed species, CRPR List 1B and 2 species, and CRPR List 3 or 4 or A-ranked species) and, therefore, the potential for impacts of VMP activities on regional populations of these species to substantially reduce the number or restrict the range of a special-status plant species.

Mechanical and Hand Labor Treatments

Potential adverse effects from mechanical and hand labor treatments include physical removal of listed plants due to trampling or vehicle access to treatment areas, as well as accidental direct removal during VMP activities. Mechanical methods also have the potential to spread pathogens such as *Phytophthora*, which is spread through cutting by contaminated equipment and contaminated soil (see Impact BIO-3B for further discussion on pathogens), or to introduce invasive species into listed plant populations.

USFWS listed vegetation and fire management, including mowing, weed whacking, and weed eating, as one of the primary threats to subpopulations of Presidio clarkia in the Oakland Hills (USFWS 2010a). USFWS also states:

> Presidio clarkia within the Chadbourne Way, Kimberlin Heights Drive, Colgett Drive, Crestmont Drive, and Old Redwood Road subpopulations continue to be threatened by road maintenance and vegetation and fire management activities implemented by the City of Oakland before the clarkia plants have released and dispersed their seeds" (USFWS 2010a).

[6] These thresholds have been previously relied on in the County of San Mateo Routine Maintenance Program Environmental Impact Report (County of San Mateo 2020).

While carefully planned and timed mowing can result in improved habitat conditions for Presidio clarkia (Naumovich 2019), mowing can also remove individual Presidio clarkia plants. Mowing or other direct removal of Presidio clarkia plants prior to seed set and dispersal would be a significant impact.

Implementation of **Mitigation Measure BIO-1 (Provide Biologist Review and Worker Training), Mitigation Measure GEO-1 (Minimize Area of Disturbance), Mitigation Measure BIO-2a (Avoid Special-Status Plant Species), Mitigation Measure BIO-2b (Provide Compensatory Mitigation for Special-Status Plant Species), Mitigation Measure BIO-3 (Seeding with Native Species)** and **Mitigation Measure BIO-4 (Avoid Presidio Clarkia Sensitive Time Periods)** would reduce these impacts on listed plant species. Mitigation Measure BIO-1 requires a training program for all staff, contractors, and volunteers who would perform vegetation management work. The training program would be conducted by a qualified biologist and would describe special-status species, including plants, and how to avoid harming the species. This training program would reduce the incidence of accidentally destroying a listed plant or plant population. Mitigation Measure BIO-2a requires pre-activity surveys to identify and flag protected plants, implement avoidance buffers, and implement appropriate treatment windows to avoid sensitive seasons (e.g., avoiding seed set and dispersal) during the species' lifecycles. If special-status plants cannot be completely avoided, a qualified botanist has determined that the treatment activity will not be beneficial to the special-status plant population, and impacts would be above the threshold (5 percent of a population for listed plants, 10 percent for CRPR List 1B and 2 species, and 20 percent for CRPR List 3 or 4 or A-ranked species), Mitigation Measure BIO-2b would require compensation for significant impacts on populations of special-status plants through a combination of preservation and enhancement of those species' populations outside VMP treatment areas. Mitigation Measure BIO-3 would require seeding of soils exposed by VMP activities with native plant or annual sterile seeds, which would minimize the potential for invasive plant species to colonize exposed soils and subsequently spread into adjacent listed plant populations. Mitigation Measure BIO-4 would require surveys for Presidio clarkia annual prior to implementing VMP treatments in areas known to support Presidio clarkia populations. VMP treatments would not occur within areas supporting Presidio clarkia populations until a qualified biologist determines that the Presidio clarkia have released their seeds for the season, and no herbicide use would be allowed in these areas. Mitigation Measure GEO-1 would minimize the area of soil disturbance when VMP activities are conducted, reducing the potential for impacts to listed plant species. With implementation of these mitigation measures, mechanical and hand labor impacts on listed plant populations would be less than significant.

Grazing

Allowing animals to graze in areas where pre-construction surveys have not been completed or protection fencing has not been installed around listed plants could result in animals trampling or consuming listed plants, which would be a significant impact. As described above, implementation of Mitigation Measure BIO-2a would require pre-activity surveys to identify and flag protected plants, implement avoidance buffers, and implement appropriate treatment windows to avoid sensitive seasons during the species' lifecycles. Implementation of **Mitigation Measure BIO-5 (Grazing)** would require exclusion of grazing animals from listed plant populations unless a qualified botanist determines that grazing would be beneficial to the population, in which case grazing may occur within the population under the direct supervision

of a qualified botanist. With implementation of these mitigation measures, grazing impacts on listed plant populations would be less than significant.

Herbicides

Herbicides, if used in the vicinity of listed plant populations, could result in the death of individual listed plants; this would be a significant impact. Herbicide impacts to listed plants could occur from inadvertent direct application to a listed plant, off-target herbicide contact via drift, or residual herbicide in soil. Implementation of Mitigation Measure BIO-1 would minimize potential herbicide impacts by training staff, contractors, and volunteers about special-status species, including plants, and how to avoid harming these species. This training would reduce the potential for accidentally applying herbicide to a listed plant or plant population. Implementation of Mitigation Measure BIO-2a would require pre-activity surveys to identify and flag protected plants and establish avoidance buffers and would prohibit the use of herbicide within 100 feet of listed plants, minimizing the potential for herbicide impacts to listed plants. By conducting the surveys prior to the activities, the surveys would most accurately identify the locations of existing plants. A lead agency may rely on future studies to devise the specific design of a mitigation measure when the results of later studies are used to tailor mitigation measures to fit on-the-ground environmental conditions. (*Save Panoche Valley v. San Benito County* (2013) 217 Cal.App.4th 503, 524 [upholding mitigation measures, based on preconstruction surveys, requiring identified steps for avoiding impacts to biological resources to be implemented].) Implementation of **Mitigation Measure HAZ-5 (Standard Herbicide Use Requirements)** would reduce the potential for herbicide impacts to listed plants by using the lowest recommended application rates of herbicides and surfactants, and avoiding application of herbicides within 48 hours of predicted rainfall (which would minimize the potential for herbicide to run off into adjacent areas). Implementation of Mitigation Measure HAZ-5 also requires herbicides to be applied by or under the supervision of a licensed applicator. **Mitigation Measure HAZ-4 (Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides)** would avoid use of herbicides under wind conditions that would exacerbate herbicide drift, by prohibiting the use of spray herbicide application when wind velocities are greater than 7 miles per hour. These mitigation measures would minimize the potential for herbicide drift onto listed plants. As herbicide would not be applied in areas with listed plants, residual soil effects of herbicides would have no impact on listed plants. With implementation of these mitigation measures, herbicide impacts on listed plant populations would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

The City shall retain a qualified biologist to review the annual work plan each year prior to conducting proposed VMP activities. The qualified biologist shall provide detailed guidance to staff regarding special status-species, sensitive habitats, and implementation of relevant mitigation measures described in this EIR. The qualified biologist shall also develop and present an environmental training program to all staff responsible for performing VMP treatment activities, including City contractors and volunteers. The training program shall be presented annually, at a minimum. Staff shall be trained to recognize special-status species and their habitats within the applicable VMP treatment areas. The training shall include maps and photos of known special-

status species populations and location of riparian corridors or sensitive habitats. Staff shall also be trained to use protective measures, including those described in Mitigation Measures BIO-2a through BIO-5, GEO-1, and HAZ-4 and HAZ-5, to ensure that such species are not adversely impacted by VMP activities.

Mitigation Measure BIO-2a: Avoid Special-Status Plant Species (revised from VMP BMP BIO-3)

The City and its contractors shall ensure that, before conducting treatment activities, VMP treatment areas shall be surveyed for special-status plants with the potential to occur in the VMP area. Avoidance of Presidio Clarkia is described in Mitigation Measure BIO-4. To avoid and/or minimize potential impacts on special-status plants, the following actions shall be taken:

1. A qualified botanist shall conduct protocol-level surveys for special-status plants within the treatment area following survey methods from CDFW's Protocols for Surveying and Evaluating Impacts on Special Status Native Plant Populations and Natural Communities (CDFW 2018), or most updated version. Surveys shall be conducted during the appropriate blooming period before commencement of work.

2. 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 VMP treatment project and no special-status plants were found, and no treatment activity occurred after the protocol-level survey, treatment may proceed in that area without additional plant surveys.

3. If special-status plants are not found, the botanist will document the findings in a report to the City and no further mitigation will be required.

4. If special-status plant species are present at the treatment area based on the pre-treatment survey, the City's preferred approach is to avoid causing any impacts to the special-status species or its habitat, if feasible. In the event that complete avoidance is not possible, the qualified biologist shall minimize impacts on the species by implementing one or more of the following measures, as appropriate based upon the plant identified, the nature of the treatment, and the location:

    A. Flag or otherwise delineate in the field the special-status plant populations and/or sensitive natural community to be protected;

    B. Allow adequate buffers around plants or habitat; the location of the buffer zone shall be shown on the contract documents and marked in the field with stakes and/or flagging in such a way that exclusion zones are visible to personnel without excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing); and

C. Schedule vegetation treatment or other activities to take place during dormant and/or non-critical life cycle period.

5. If special-status plant species are identified at the treatment area and treatment is not planned for two years, the qualified biologist will conduct a follow-up survey prior to treatment to determine if the boundaries of the population have shifted and to implement the measures outlined in step (4) above.

6. Herbicides shall not be used within 100 feet of special-status plant populations.

7. If impacts to special-status plant populations cannot be completely avoided or minimized to a less than significant level, the City shall implement the following measures:

   - The qualified botanist will determine if the special-status plant population will benefit from treatment in the occupied habitat area even though some of the individual plants may be adversely affected during treatment activities. If the qualified botanist determines that treatment activities will be beneficial to a special-status plant population, no compensatory mitigation will be required. For a treatment to be considered beneficial to special-status plants, the qualified botanist will demonstrate that habitat function is expected to improve with implementation of the treatment such that special-status plant populations would expand, regenerate, or display increased vigor after treatment implementation. This determination will consider and cite scientific studies demonstrating that the species or a similar species has benefitted from increased sunlight from canopy opening, eradication of invasive species, or otherwise reduced competition for resources. This determination will be documented in the survey results letter report. The City may consult with CDFW and/or USFWS for technical information regarding this determination.

   - If a qualified botanist determines that treatment activities will not be beneficial to a special-status plant population and if the impacts are above the specified thresholds (5 percent for state-listed or federally listed species, 10 percent for CRPR List 1B and 2 species, and 20 percent for CRPR List 3 or 4 or A-ranked species), then Mitigation Measure BIO-2b shall be implemented.

Mitigation Measure BIO-2b: Provide Compensatory Mitigation for Special-Status Plant Species

The City shall prepare a Compensatory Mitigation Plan and provide compensatory mitigation for impacts on special-status plant populations where such impacts are unavoidable, a qualified botanist has determined that the treatment activity will not be beneficial to the special-status plant population, and impacts are above the specified thresholds: 5 percent for state-listed or federally listed species, 10 percent for CRPR List 1B and 2 species, and 20 percent for CRPR List 3 or 4 or A-ranked species.

The Compensatory Mitigation Plan will detail the compensatory mitigation strategy for unavoidable impacts on special-status plants. Compensation for unavoidable impacts on populations of special-status plants shall be provided by a combination of preservation and enhancement of those species' populations. For impacts on populations (including partial populations) of a specific special-status plant species, compensatory mitigation shall include preservation, enhancement, and management of lands that (a) already support equal or greater numbers (and health) of individuals of that species and (b) contain sufficient unoccupied habitat to allow for an increase in populations (at least equivalent to the number affected) through habitat enhancement and management. Compensatory mitigation may also include creating off-site populations on mitigation sites through seed collection or transplantation and/or restoring or creating suitable habitat. To determine the magnitude of the impact to the entire population of the species, the number of individuals affected will be determined by using the highest number of individuals known to be present in the impact area within the prior 10 years (if the impact area has undergone multiple surveys in recent years). If the special-status plant taxa impacted are listed under ESA, CESA, or NPPA, the Compensatory Mitigation Plan will be submitted to CDFW and/or USFWS (as appropriate) for review and comment.

Success criteria for preserved and compensatory populations shall include:

- The extent of occupied area and plant density (number of plants per unit area) in compensatory populations would be equal to or greater than the affected occupied habitat.

- Compensatory and preserved populations would be self-producing. Populations would be considered self-producing when:

  - plants reestablish annually for a minimum of five years with no human intervention such as supplemental seeding; and

  - reestablished and preserved habitats contain an occupied area and flower density comparable to existing occupied habitat areas in similar habitat types in the treatment area vicinity.

If off-site conservation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the Compensatory Mitigation Plan shall include details of these measures, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations.

If relocation efforts are part of the Compensatory Mitigation Plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria such as those listed above, and remedial action responsibilities should the initial effort fail to meet long-term conservation requirements.

After the Compensatory Mitigation Plan has been implemented, the City shall document the results in a mitigation monitoring report until the success criteria in the plan are met.

Mitigation Measure BIO-3: Seeding with Native Species (VMP BMP BIO-10)

To minimize the potential for invasive plant species to colonize exposed soils and subsequently spread into adjacent listed plant populations, the City and its contractors shall reseed exposed soil resulting from VMP activities as follows:

1. Sites where vegetation management activities result in exposed soil shall be stabilized to prevent erosion. Disturbed areas shall be seeded with native seed as soon as is appropriate after vegetation management activities are completed. An erosion control seed mix may be applied to exposed soils, including down to the ordinary high water mark on stream banks.

2. The erosion control seed mix shall consist of California native grasses (such as, but not limited to *Hordeum brachyantherum*, *Elymus glaucus*, *Stipa pulchra*, *Danthonia californica*, and *Festuca microstachys*) or annual, sterile seed.

Mitigation Measure BIO-4: Avoid Presidio Clarkia Sensitive Time Periods

If VMP treatment activities, including mowing and weed eating, are planned within known habitat for Presidio clarkia (defined as the median strips and roadside along Skyline Boulevard and Chadbourne Way between Crestmont Drive and Redwood Road, roadsides along the north side of Kimberlin Heights Drive, Colgett Drive, the roadside of Crestmont Drive at the junction with Westfield Way, the roadside of Old Redwood Road, and the portion of Joaquin Miller Park located south of Skyline Boulevard near the junction with Joaquin Miller Road), the City and its contractors shall ensure that the following processes are followed:

- Annually prior to the implementation of proposed VMP treatment activities within Presidio clarkia known habitat areas, a qualified botanist shall conduct a survey of Presidio clarkia distribution in areas where VMP treatments are proposed during the blooming period for this species (typically May and June). The botanist shall mark the limits of the Presidio clarkia distribution, and no work shall occur in these areas until a qualified botanist determines that the Presidio clarkia have released their seeds, which typically occurs in the late summer.

- If VMP treatments occur in areas adjacent to marked Presidio clarkia populations during the species growing season prior to Presidio clarkia seed release, a biological monitor shall be present during treatment implementation. The biological monitor shall monitor work crews to prevent accidental entry into the Presidio clarkia areas.

- Herbicides, if chosen as a VMP treatment method, shall not be used within 100 feet of Presidio clarkia known habitat areas.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

1. Livestock shall generally (in >80 percent of situations) be excluded from riparian areas where feasible, and shall be entirely (i.e., completely) excluded from streams with steep banks. Grazing contractors shall provide alternative water sources to avoid livestock reliance on natural water sources. Prior to conducting grazing on creekside properties (as defined in the Creek Protection Ordinance), the City shall obtain a Creek Protection Permit.

2. If temporary fencing is used during grazing treatments, wildlife-friendly fencing design shall be used. The fencing shall 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. The fencing shall be highly visible to birds and mammals by using high-visibility tape or wire, flagging, or other markers. Fencing shall be constructed to allow wildlife to jump over easily without injury by installing the top wire low enough (no more than approximately 40 inches high on flat ground) to allow adult deer to jump over it.

3. Livestock shall be excluded from known locations of special-status plant species and mixed chaparral habitat. If a qualified botanist determines that grazing would be beneficial to a special-status plant species, grazing may occur within the special-status plant population under the direct supervision of a qualified botanist.

4. Livestock shall be monitored to ensure over-grazing of treatment areas does not occur. Grasslands should not be grazed to less than 4 inches.

Mitigation Measure GEO-1: Minimize Area of Disturbance (VMP BMP GEN-2)

See text in Section 3.6, “Geology, Soils, and Seismicity.”

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, “Hazards and Hazardous Materials.”

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, “Hazards and Hazardous Materials.”

Conclusion

VMP treatments could result in impacts to listed plant species from physical removal by hand or mechanical treatments, grazing, or accidental herbicide application to listed plants. Implementation of Mitigation Measures BIO-1 through BIO-5, GEO-1, HAZ-4, and HAZ-5 would reduce potential impacts through staff training, pre-treatment surveys for listed plants, implementation of avoidance buffers, seeding with native plant species, exclusion of grazing animals from listed plant populations, avoidance of Presidio clarkia sensitive time periods, and minimizing potential for herbicide to inadvertently be applied to listed plants. Therefore, impacts would be **less than significant with mitigation.**

Impact BIO-1B: CRPR 1B or 2 Plants (*Less than Significant with Mitigation*)

In addition to the listed plant species discussed above, 13 special-status plant species are listed in the CNPS Rare Plant inventory as CRPR 1B or 2 and are either known to occur or have potential to occur in the VMP area. **Table 3.4-2** lists information about these plant species.

Because CRPR 1B or 2 plant species are generally somewhat more widespread than listed plant species discussed in Impact BIO-1A, the threshold for a significant impact on CRPR 1B or 2 plant species is 10 percent (see explanation of numerical thresholds in Impact BIO-1A). If impacts on CRPR 1B or 2 plant species are unavoidable, a qualified botanist has determined that the treatment activity will not be beneficial to the special-status plant population, and more than 10 percent of a specific population would be affected, the impact would be significant because of the potential to substantially reduce the size of the regional population.

Mechanical and Hand Labor Treatments

Potential impacts on CRPR 1B or 2 plant species as a result of mechanical and hand labor activities would be similar to those described for listed plants in Impact BIO-1A. Implementation of Mitigation Measures BIO-1, BIO-2a, BIO-2b, BIO-3, and GEO-1 would reduce these impacts. Mitigation Measure BIO-1 requires a training program for all staff, contractors, and volunteers who would perform vegetation management work. The training would describe special-status species, including plants, and how to avoid harming the species. This training would reduce the incidence of accidentally destroying a listed plant or plant population. Mitigation Measure BIO-2a requires pre-activity surveys to identify and flag protected plants, implement avoidance buffers, and implement appropriate treatment windows to avoid sensitive seasons during the species' lifecycles (e.g., avoiding seed set and dispersal). If special-status plants cannot be completely avoided, a qualified botanist has determined that the treatment activity will not be beneficial to the special-status plant population, and impacts would be above the threshold (10 percent of a population for CRPR 1B or 2 plants), Mitigation Measure BIO-2b would require compensation for significant impacts on populations of special-status plants through a combination of preservation and enhancement of those species' populations outside VMP treatment areas. Mitigation Measure BIO-3 would require seeding of soils exposed by VMP activities with native plant or annual sterile seeds, which would minimize the potential for invasive plant species to colonize exposed soils and subsequently spread into adjacent listed plant populations. Mitigation Measure GEO-1 would minimize the area of soil disturbance when VMP activities are conducted, reducing the potential for impacts to listed plant species. With implementation of these mitigation measures, mechanical and hand labor impacts on CRPR 1B or 2 plants would be less than significant.

Grazing

Allowing animals to graze in areas where pre-construction surveys have not been completed or protection fencing has not been installed around CRPR 1B or 2 plants could result in animals trampling or consuming CRPR 1B or 2 plants, which would be a significant impact. As described in Impact BIO-1A, implementation of Mitigation Measure BIO-2a would require pre-activity surveys to identify and flag protected plants, implement avoidance buffers, and implement appropriate treatment windows to avoid sensitive seasons during the species' lifecycles. Implementation of Mitigation Measure BIO-5 would require exclusion of grazing animals from CRPR 1B or 2 plant populations unless a qualified botanist determines that grazing would be

beneficial to the population, in which case grazing may occur within the population under the direct supervision of a qualified botanist. With implementation of these mitigation measures, grazing impacts on CRPR 1B or 2 plants would be less than significant.

Herbicides

Herbicides, if used in the vicinity of CRPR 1B or 2 plant populations, could result in the death of individual CRPR 1B or 2 plants; this would be a significant impact. Herbicide impacts to CRPR 1B or 2 plants could occur from inadvertent direct application to a plant, off-target herbicide contact via drift, or residual herbicide in soil. Implementation of Mitigation Measure BIO-1 would minimize potential herbicide impacts by training staff, contractors, and volunteers about special-status species, including plants, and how to avoid harming the species. This training would reduce the potential for of accidentally applying herbicide to a CRPR 1B or 2 plant or plant population. Implementation of Mitigation Measure BIO-2a would require pre-activity surveys to identify and flag protected plants and establish 100-foot minimum avoidance buffers, minimizing the potential for herbicide impacts to CRPR 1B or 2 plants. If special-status plants cannot be completely avoided and impacts would be above the threshold (5 percent for state-listed or federally listed species, 10 percent for CRPR List 1B and 2 species, and 20 percent for CRPR List 3 or 4 or A-ranked species), Mitigation Measure BIO-2b would require compensation for significant impacts on populations of special-status plants through a combination of preservation and enhancement of those species' populations outside VMP treatment areas. Herbicide application would only occur in upland areas, and the implementation of Mitigation Measure HAZ-5 would reduce the potential for herbicide impacts to CRPR 1B or 2 plants by using the lowest recommended application rates of herbicides and surfactants, and avoiding application of herbicides within 48 hours of predicted rainfall (which would minimize the potential for herbicide to run off into adjacent areas). Implementation of Mitigation Measure HAZ-5 also requires herbicides to be applied by a licensed applicator. Mitigation Measure HAZ-4 avoids use of herbicides under wind conditions that would exacerbate herbicide drift, by prohibiting the use of spray herbicide application when wind velocities are greater than 7 miles per hour. These mitigation measures would minimize the potential for herbicide drift onto CRPR 1B or 2 plants. As herbicide would not be applied in areas with CRPR 1B or 2 plants, residual soil effects of herbicides would have no impact on soil plants. With implementation of these mitigation measures, herbicide impacts on CRPR 1B or 2 plants would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-2a: Avoid Special-Status Plant Species (revised from VMP BMP BIO-3)

See text in Impact BIO-1A above.

Mitigation Measure BIO-2b: Provide Compensatory Mitigation for Special-Status Plant Species

See text in Impact BIO-1A above.

Mitigation Measure BIO-3: Seeding with Native Species (VMP BMP BIO-10)

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure GEO-1: Minimize Area of Disturbance (VMP BMP GEN-2)

See text in Section 3.6, "Geology, Soils, and Seismicity."

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Conclusion

VMP treatments could result in impacts to CRPR 1B or 2 plant species from physical removal by hand labor or mechanical treatments, grazing, or accidental herbicide application. Implementation of Mitigation Measures BIO-1 through BIO-3, BIO-5, GEO-1, HAZ-4, and HAZ-5 would reduce potential impacts through staff training, pre-treatment surveys for CRPR 1B or 2 plants, implementation of avoidance buffers, compensatory mitigation if impacts are above thresholds, seeding with native plant species, exclusion of grazing animals from plant populations, and minimizing potential for herbicide to inadvertently be applied to CRPR 1B or 2 plants. Therefore, impacts would be **less than significant with mitigation.**

Impact BIO-1C: CRPR 3 or 4 Plants and Plants Listed in the CNPSEB Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties Database with an A rank (*Less than Significant with Mitigation*)

Five special-status plant species are listed in the CNPS Rare Plant inventory as CRPR 3 or 4 and are known to occur or have potential to occur in the VMP area: California androsace (*Androsace elongata* ssp. *acuta*), Oakland star-tulip (*Calochortus umbellatus*), johnny-nip (*Castilleja ambigua* var. *ambigua*), phlox-leaf serpentine bedstraw (*Galium andrewsii* ssp. *gatense*), and bristly leptosiphon (*Leptosiphon acicularis*). Additionally, 155 special-status plant species with an A rank in the CNPSEB Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties Database (A-ranked species) are known to occur or have potential to occur in the VMP area. **Table 3.4-2** lists information about CRPR 3 or 4 and A-ranked species.

The potential impacts of VMP activities on CRPR 3 or 4 and A-ranked plant species are similar to those discussed in Impact BIO-1B. The mechanisms by which impacts are expected to occur for CRPR List 3 or 4 and A-ranked species are the same as those discussed for CRPR List 1B or 2 plants. CRPR List 3 or 4 and A-ranked plant species tend to be more widespread and abundant than CRPR List 1B or 2 species, however, and are less likely to experience a substantial reduction in population, which would be a significant impact.

Because CRPR 3 or 4 plant and A-ranked plant species are generally more widespread than CRPR 1B or 2 plant species, the threshold for a substantial impact on CRPR 3 or 4 special-status plant species is 20

percent. If impacts on CRPR 3 or 4 or A-ranked plant species are unavoidable, a qualified botanist has determined that the treatment activity will not be beneficial to the special-status plant population, and more than 20 percent of a specific population would be affected, the impact would be significant because of the species' regional rarity and the potential to substantially reduce the size of the regional population. Implementation of Mitigation Measures BIO-1 through BIO-3, BIO-5, GEO-1, HAZ-4, and HAZ-5 would reduce potential impacts through staff training, pre-treatment surveys for CRPR 3 or 4 or A-ranked plants, implementation of avoidance buffers, compensatory mitigation if impacts are above thresholds, seeding with native plant species, exclusion of grazing animals from special-status plant populations unless a qualified botanist determines that grazing would be beneficial the population, in which case grazing may occur within the special-status plant population under the direct supervision of a qualified botanist, and minimizing potential for herbicide to inadvertently be applied to special-status plants. Implementation of these mitigation measures would reduce the impact on CRPR 3 or 4 or A-ranked plant species to a less-than-significant level.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-2a: Avoid Special-Status Plant Species (revised from VMP BMP BIO-3)

See text in Impact BIO-1A above.

Mitigation Measure BIO-2b: Provide Compensatory Mitigation for Special-Status Plant Species

See text in Impact BIO-1A above.

Mitigation Measure BIO-3: Seeding with Native Species (VMP BMP BIO-10)

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure GEO-1: Minimize Site Disturbance (VMP BMP GEN-2)

See text in Section 3.6, "Geology, Soils, and Seismicity."

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Conclusion

VMP treatments could result in impacts to CRPR 3 or 4 or A-ranked plant species by physical removal from hand labor or mechanical treatments, grazing, or accidental herbicide application.

Implementation of Mitigation Measures BIO-1 through BIO-3, BIO-5, GEO-1, HAZ-4, and HAZ-5 would reduce potential impacts through staff training, pre-treatment surveys for CRPR 3 or 4 or A-ranked plants, implementation of avoidance buffers, compensatory mitigation if impacts are above thresholds, seeding with native plant species, exclusion of grazing animals from special-status plant populations, and minimizing potential for herbicide to inadvertently be applied to special-status plants. Therefore, impacts would be **less than significant with mitigation.**

Impact BIO-2: Potential Adverse Effects on Special-Status Wildlife Species (*Less than Significant with Mitigation*)

The following discussions evaluate impacts on special-status wildlife species.

Impact BIO-2A: Potential Adverse Effects on Special-Status Amphibians and Reptiles (*Less than Significant with Mitigation*)

Special-status reptiles with the potential to occur in the VMP area include western pond turtle and Alameda whipsnake (**Table 3.4-3**). California red-legged frog is the only special-status amphibian with potential to occur in the VMP area (**Table 3.4-3**).

Alameda whipsnake occurs primarily in coastal scrub and chaparral communities, but also forages in a variety of other nearby communities (typically within 500 feet of coastal scrub and chaparral) in the inner Coast Range, including grasslands and open woodlands (Swaim 1994). Chaparral and coastal scrub habitats serve as the core habitat for Alameda whipsnake home ranges (USFWS 2011). Other important habitat features usually found in "core" habitat include small mammal burrows, rock outcrops, talus, and other forms of shelter (USFWS 2011). This species' range includes five specific areas; this includes, within the VMP area, from the Anthony Chabot area to Las Trampas Ridge (USFWS 2017). Alameda whipsnake is most likely to occur within coastal scrub and chaparral habitats, but this species may also use adjacent habitats such as grasslands and oak woodlands. Portions of the VMP area are within critical habitat for this species, particularly the Grizzly Peak Open Space (Figure 3.4-4).

Western pond turtles have the potential to occur within the VMP area in aquatic habitat such as perennial streams, marshes, and ponds, and have been observed within the Sausal Creek Watershed. Western pond turtles may move up 1,150 feet away from aquatic habitat to nest in or travel through upland areas, although most individuals typically remain much nearer to their respective waterbodies (Pilliod et al. 2013).

California red-legged frog has potential to occur in aquatic habitat such as streams, freshwater pools, and ponds with emergent or overhanging vegetation. Within the VMP area, California red-legged frog is expected to occur within streams, wetlands, and riparian habitat immediately adjacent to aquatic movement and breeding habitat. The species' preferred breeding habitat consists of deep perennial pools with emergent vegetation for egg mass attachment, but this species is also known to breed in streams, backwaters within streams and creeks, ponds, and marshes (USFWS 2002). Non-breeding frogs may also be found within riparian areas (USFWS 2002). During the dry season, California red-legged frog is not typically found far from water, but this species is known to disperse up to 1.7 miles from aquatic habitat through upland habitats during periods of wet weather (USFWS 2002, Fellers and Kleeman 2007). Use of upland areas is expected to occur only during dispersal during wet periods.

All Treatments

VMP activities would generally occur in upland areas, which would reduce the potential for impacts to western pond turtle and California red-legged frog. VMP activities are generally anticipated to occur further than 100 feet from streams, in accordance with the Creek Protection Ordinance. A Creek Protection Permit would be required for any projects on creekside parcels. The City will minimize vegetation management within 100 feet of streams, but some vegetation management could still be needed near creeks to reduce fire hazard. **Table 3.4-4** shows priority projects located on creekside parcels, indicates whether the projects are within 100 feet of creek centerlines and provides acreages of these projects. **Table 3.4-4** is based on a GIS analysis of distance from streams. Smaller drainage features that would be considered streams under the Creek Protection ordinance may not be fully captured in this GIS analysis. The majority (58.6 acres out of a total of 92 acres) of the VMP treatment project acreage within 100 feet of streams consists of grazing treatments. VMP treatments could increase erosion and, subsequently, sedimentation within aquatic habitat for these species, reducing habitat quality. This would be a significant impact. Implementation of Mitigation Measures GEO-1 and GEO-2 would reduce the potential for sedimentation-related impacts to aquatic habitat by minimizing the area of VMP treatments to the minimum footprint necessary and by implementation of erosion and sediment control measures.

Table 3.4-4. Priority Projects within Creekside Properties

VMP Treatment Project Number	Priority	Within 100 feet of Creek?	Acreage of VMP Treatment Project within 100 Feet of Creek
Garber Park			
GAR-1	1	Yes	0.6
GAR-2	1	No	0
GAR-3	1	No	0
North Oakland Sports Field			
NOR-1	1	Yes	1.8
NOR-2	2	No	0
NOR-3	3	Yes	2.5
Shepherd Canyon Park			
SHP-1*	1	Yes	1.4
SHP-2*	1	Yes	1.2
SHP-3*	2	No	0
SHP-4*	3	Yes	5.9
Beaconsfield Canyon			
BCN-1	1	Yes	0.4
BCN-2	2	Yes	0.9
Marjorie Saunders Park			
MJS-1	1	Yes	0.2
MJS-2	2	Yes	0.6

VMP Treatment Project Number	Priority	Within 100 feet of Creek?	Acreage of VMP Treatment Project within 100 Feet of Creek
Dimond Canyon Park			
DIM-1*	1	Yes	0.7
DIM-2	1	Yes	0.5
DIM-3	1	No	0
Joaquin Miller Park			
JMP-1	1	Yes	2.2
JMP-2	1	Yes	0.2
JMP-3	2	No	0
JMP-4	3	Yes	3.3
Leona Heights Park			
LHT-1	1	Yes	3.8
LHT-2	1	Yes	0.3
LHT-3	2	Yes	0.4
Police/Safety Department Property			
PSD-1	1	No	0
PSD-2	1	Yes	0.1
Knowland Park and Arboretum			
KNO-1	1	Yes	1.2
KNO-2	1	Yes	3.2
KNO-3	2	Yes	1.5
KNO-4	2	Yes	0.2
KNO-5*	3	Yes	23.2
Sheffield Village Open Space			
SHF-1	1	Yes	4.0
SHF-2	2	Yes	2.2
SHF-3	3	Yes	26.2
Urban and Residential Parcels			
URB-1*	1	Yes	3.2
Tunnel Road Open Space			
TRO-1	1	Unknown**	Unknown**
Blue Rock Court			
BLU-1	1	Unknown**	Unknown**
BLU-2	2	Unknown**	Unknown**
BLU-3	3	Unknown**	Unknown**
King Estate Open Space Park			
KES-1	1	Unknown**	Unknown**

VMP Treatment Project Number	Priority	Within 100 feet of Creek?	Acreage of VMP Treatment Project within 100 Feet of Creek
KES-2	3	Unknown**	Unknown**
Oak Knoll			
OKN-1	1	Unknown**	Unknown**
OKN-2	3	Unknown**	Unknown**
Grizzly Peak Open Space			
GPO-1	1	Unknown**	Unknown**
GPO-2	2	Unknown**	Unknown**
GPO-3	3	Unknown**	Unknown**
GPO-4	3	Unknown**	Unknown**
Total			***92.0***

* Some parcels within this priority project are considered creekside parcels, but not all parcels are.

** These VMP projects would be on creekside parcels but creek mapping information was not available.

Workers implementing VMP treatments could attract predators of California red-legged and Alameda whipsnake by leaving food scraps or other trash at VMP treatment areas. Increased predation of California red-legged frog, western pond turtle, and Alameda whipsnake would be a significant impact. Implementation of **Mitigation Measure BIO-6 (Trash Removal)** would reduce the potential for workers to attract predators of these species by requiring all waste and contaminants to be contained and removed daily from the work site. With implementation of these mitigation measures, impacts from erosion, sedimentation, and trash on Alameda whipsnake, California red-legged frog, and western pond turtle would be less than significant.

Mechanical and Hand Labor Treatments

VMP activities would occur in chaparral and coastal scrub habitats and areas adjacent to these habitats. Activities within these areas could impact Alameda whipsnake, if present, through injury or mortality. Injury or mortality could be caused by equipment, vehicle traffic, and worker foot traffic and exposure to chemicals from equipment leaks. VMP activities within such habitat would also result in temporary habitat impacts (e.g., vehicles or equipment denuding or crushing grassland vegetation, localized noise disturbance or vibration from equipment or hand-held machinery) while mechanical and hand labor treatments are taking place. Thinning within suitable habitat would reduce vegetation density, but it is not expected to prevent the species' use of affected areas because individuals routinely use adjacent open habitats.

Injury or mortality of Alameda whipsnake individuals would be a significant impact. Implementation of Mitigation Measure BIO-1, which requires worker training, and **Mitigation Measure BIO-7 (Protection of Alameda Whipsnake)**, which requires pre-treatment surveys of scrub habitat, avoidance of the Alameda whipsnake breeding period, biological monitoring of VMP treatment implementation in Alameda whipsnake habitat, and prohibition of erosion control materials containing plastic monofilament, would reduce the potential for impacts.

Alameda whipsnake may use existing animal burrows within suitable habitat as refugia. VMP treatment activities within suitable habitat for Alameda whipsnake could result in temporary impacts to suitable habitat through vegetation removal by both mechanical and hand labor techniques and collapsing of burrows or other refugia by the passage of heavy equipment. Although habitat conversion is not the intended goal of the VMP, removal of trees in areas adjacent to coastal scrub habitat (such as within the closed-cone pine-cypress habitat in Grizzly Peak Open Space under projects GPO-1 and GPO-2) would improve habitat for Alameda whipsnake by decreasing shading of coastal scrub shrubs (which are preferred habitat for this species) and allowing these shrubs to become relatively more dominant within this habitat.

No VMP treatments are proposed within California red-legged frog breeding habitat or aquatic habitat for western pond turtle. As described above, most VMP treatments would occur in upland habitat and habitats that are more than 100 feet away from streams. These aspects of the VMP would minimize potential impacts to these species. However, some VMP treatments would occur within 100 feet of streams, as indicated in **Table 3.4-4**. Implementation of VMP treatments in habitats within 100 feet of streams could impact California red-legged frogs or western pond turtle through injury or mortality. Hand labor treatments have a smaller chance of impacting these species, while mechanical treatments with heavy equipment have a greater chance. Implementation of **Mitigation Measure BIO-8 (Protection of California Red-legged Frogs and Western Pond Turtles)** would minimize the potential for impacts to these species through avoidance of treatment activities immediately following rain storms (when these species are most likely to venture into upland areas farther from aquatic habitat), pre-construction surveys within 100 feet of aquatic habitat, establishment of no-work buffers if these species are detected, and relocation of these species by a qualified biologist. With implementation of Mitigation Measures BIO-1, BIO-7, and BIO-8, mechanical and hand labor impacts on Alameda whipsnake, California red-legged frog, and western pond turtle would be less than significant.

Grazing

VMP grazing treatments are not anticipated to result in direct injury or mortality of Alameda whipsnake, California red-legged frog, or western pond turtle. As described above, the majority of the VMP treatment project acreage within 100 feet of streams consists of grazing treatments. If grazing were to occur within riparian or aquatic habitats, temporary impacts could occur to habitats that support California red-legged frog and western pond turtle. Grazing could increase sedimentation into aquatic habitats, temporarily reducing habitat quality for California red-legged frog and western pond turtle. Over several years, grazing could cumulatively result in stream bank failure, erosion, and successive sedimentation, all of which could permanently alter suitable California red-legged frog and western pond turtle aquatic habitat. Implementation of Mitigation Measure BIO-5 would reduce these impacts by generally excluding (in >80 percent of situations) livestock from riparian areas, completely excluding livestock from streams with steep banks, require grazing lessees or contractors to provide alternative (i.e., other than natural) water sources for livestock, and monitoring to prevent over-grazing. With implementation of this mitigation measure, grazing impacts on Alameda whipsnake, California red-legged frog, and western pond turtle would be less than significant.

Herbicides

Herbicide use could result in adverse effects on special-status amphibians and reptiles. Glyphosate-based herbicide appears to have limited impacts on amphibians (USFWS 2002). The ester formulation of triclopyr may have direct impacts on amphibians, while the parent compound of triclopyr has been shown to be practically nontoxic to fish (USFWS 2002). In general, USEPA uses bird toxicity data as a surrogate for terrestrial-phase reptiles and amphibians and fish toxicity data as a surrogate for aquatic-phase amphibians (USEPA 2020). Herbicide use near streams or wetlands could enter these aquatic resources, resulting in impacts to California red-legged frog or western pond turtle, if present. Implementation of **Mitigation Measure BIO-9 (Protection of California Red-legged Frogs from Herbicide Use)** would reduce the potential for herbicide impacts to special-status reptiles and amphibians by using the lowest recommended rates of herbicides and surfactants, not applying herbicides to open water or riparian corridors, and not applying herbicides within 48 hours of predicted rainfall (which would minimize the potential for herbicide to run off into aquatic features). Implementation of Mitigation Measure HAZ-4 would restrict herbicide application to low- to no-wind conditions to prevent drift into sensitive areas. Implementation of **Mitigation Measure HYD/WQ-1 (Work Windows)** would reduce the potential for herbicides to enter aquatic habitat by restricting their application to the dry season. With implementation of these mitigation measures, herbicide impacts on Alameda whipsnake, California red-legged frog, and western pond turtle would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure BIO-6: Trash Removal (revised from VMP BMP BIO-7)

The City and its contractors shall be required to keep all waste and contaminants contained and remove them daily from the work site. Wildlife-proof trash receptacles shall be used. Uneaten human food and trash attracts predators of the California red-legged frog and Alameda whipsnake. A litter control program shall be instituted at each vegetation treatment site. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the vegetation treatment site at the end of each working day.

Mitigation Measure BIO-7: Protection of Alameda Whipsnake (revised from VMP BMP BIO-5)

1. Prior to implementing vegetation treatments in suitable Alameda whipsnake habitat (within 500 feet of core habitat), personnel involved in vegetation removal and earth-disturbing activities shall participate in an Environmental Awareness Training per Mitigation Measure BIO-1. Workers shall be informed

about Alameda whipsnake and their habitat, conservation goals, identification, and procedures to follow in the event of a possible sighting.

2. Any coastal scrub and chaparral habitat present within a vegetation treatment area shall be inspected by a qualified biologist prior to treatment to determine the presence or potential presence of Alameda whipsnakes.

3. To the maximum extent practicable, vegetation clearing activities in coastal scrub habitats shall be scheduled to avoid the breeding period for the Alameda whipsnake (March 15 through June 15).

4. A qualified biological monitor shall monitor vegetation removal and ground disturbance within Alameda whipsnake habitat, or other activities that may result in take of Alameda whipsnake. The biological monitor shall have the authority to stop any work that could result take of Alameda whipsnake. If an Alameda whipsnake is observed, the snake will be allowed to leave the area on its own volition.

5. The biological monitor shall inspect the treatment area for Alameda whipsnake each day before work begins by checking debris piles, and also beneath vehicles/equipment before it is moved.

6. If erosion control is needed, plastic monofilament netting or similar material containing netting shall not be used, as Alameda whipsnake may become entangled in this material. Coconut coir matting or tackified hydroseeding compounds are acceptable alternatives.

Mitigation Measure BIO-8: Protection of California Red-legged Frogs and Western Pond Turtles (based on VMP BMP BIO-4)

If vegetation treatment areas are planned within 100 feet of aquatic habitat, the City and its contractors shall implement the following measures.

1. A qualified biologist shall conduct one daytime survey for California red-legged frog and western pond turtle within 48 hours before commencement of vegetation management activities.

2. If no California red-legged frogs or western pond turtles are found within the activity area during the survey, the work may proceed.

3. If a California red-legged frog or western pond turtle, or the eggs or hatchlings of western pond turtle, are found within the activity area during the survey or during VMP activities, the qualified biologist shall implement the following measures:

    A. For vegetation management activities that will take less than 1 day, conduct a survey for red-legged frogs and western pond turtles on the morning of and before the scheduled work.

I. If no California red-legged frogs, western pond turtles, or turtle nests are found, the work may proceed.

II. If eggs or larvae of either species are found, a 100-foot no-disturbance buffer zone shall be established around the location of the eggs. Work may proceed outside of the buffer zone; however, work within the buffer zone shall be postponed until the eggs have hatched and young turtles have moved outside of the work area. The monitoring biologist shall determine the buffer size based on the specific site conditions and type of vegetation management.

III. If an active western pond turtle nest is detected within the treatment area, a 100-foot buffer zone around the nest shall be maintained during the breeding and nesting season (April 1-August 31). The buffer zone shall remain in place until the young have left the nest and moved outside of the work area, as determined by a qualified biologist.

IV. If adult or juvenile California red-legged frogs or western pond turtles are found, the qualified biologist shall implement one of the following two procedures:

a.) If, in the opinion of the qualified biologist, the individual(s) are likely to leave the work area on their own, and work can be feasibly rescheduled, a buffer zone shall be established around the location of the individual(s). Work may proceed outside of the buffer zone. Work within the buffer zone shall be postponed until the individual(s) have left the area, as determined by the qualified biologist. The monitoring biologist shall determine the buffer size based on the specific site conditions and type of vegetation management.

b.) If, in the opinion of the qualified biologist, capture and removal of the individual(s) to a safe location outside of the work area is less likely to result in adverse effects than leaving the individual(s) in place and rescheduling the work (e.g., if the individual[s] could potentially hide and be missed during a follow-up survey), the individual(s) shall be captured and relocated by a qualified biologist (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed.

B. For vegetation management that will take more than 1 day, the qualified biologist shall conduct a survey for California red-legged frogs and western pond turtles each morning before the scheduled work commences.

I. If an active western pond turtle nest is detected within the treatment area, a 100-foot buffer zone around the nest shall be established and maintained during the breeding and nesting season (April 1-August 31). The buffer zone shall remain in place until the young have left the nest and moved outside of the work area, as determined by a qualified biologist.

II. If adult or juvenile California red-legged frogs or western pond turtles are found, the individual(s) shall be captured and relocated by a qualified biologist (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed.

Mitigation Measure BIO-9: Protection of California Red-legged Frogs from Herbicide Use (VMP BMP BIO-2)

- In accordance with Mitigation Measure HAZ-5, only herbicides approved for use by USEPA and registered for use by CDPR shall be used for vegetation management, and approved herbicides shall be applied in accordance with federal, state, and local regulations.

- In accordance with Mitigation Measure HAZ-5, no herbicides shall be applied in open water or within 60 feet of streams.

- In project areas identified as providing suitable habitat for the California red-legged frog, the City shall ensure that any applications of sprayable formulations of herbicides shall:

  1. be applied only when the air is calm or moving away from red-legged frog habitat;

  2. begin in the portion of the work area nearest the suitable habitat and proceed away from the habitat; and

  3. not be conducted within 40 yards upwind of suitable habitat when air currents are moving toward the habitat

Mitigation Measure GEO-1: Minimize Soil Disturbance

See text in Section 3.6, “Geology, Soils, and Seismicity.”

Mitigation Measure GEO-2: Erosion and Sediment Control Measures (VMP BMP GEN-3)

See text in Section 3.6, “Geology, Soils, and Seismicity.”

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, “Hazards and Hazardous Materials.”

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, “Hazards and Hazardous Materials.”

Mitigation Measure HYD/WQ-1: Work Windows (VMP BMP GEN-1)

See text in Section 3.9, “Hydrology and Water Quality”.

Conclusion

VMP activities could result in impacts on California red-legged frog, western pond turtle, and Alameda whipsnake through direct mortality (e.g., crushing, herbicide toxicity) and injury, or through indirect habitat degradation (e.g., removal of cover, water quality degradation), increased exposure to predators, or reduced fecundity. Implementation of Mitigation Measures BIO-5 through BIO-9, GEO-1, GEO-2, HAZ-4, HAZ-5, and HYD/WQ-1, would generally avoid grazing in riparian habitat and restrict grazing from streams to prevent erosion and sedimentation, prevent increased predation pressure on special-status amphibians and reptiles through proper trash storage and removal, require pre-activity surveys and implement necessary avoidance measures to prevent impacts on California red-legged frog and western pond turtle, and require pre-activity surveys and implement avoidance measures to prevent impacts on Alameda whipsnake, minimize the footprint of disturbance, implement erosion and sediment controls to prevent impacts to aquatic habitat, restrict herbicide use near suitable California red-legged frog aquatic habitat, prevent herbicide use in riparian habitat and contact with aquatic habitat, and reduce the potential for herbicides to enter aquatic habitat by restricting their application to the dry season. The implementation of these mitigation measures would prevent potential impacts to these species and their habitat during VMP treatment, which reduces the potential impact on California red-legged frog, western pond turtle, and Alameda whipsnake to a less-than-significant level. The impact would be **less than significant with mitigation.**

Impact BIO-2B: Potential Adverse Effects on Special-Status Birds and Other Protected Bird Nests (*Less than Significant with Mitigation*)

Special-status birds with the potential to occur in the VMP area include White-tailed Kite, Golden Eagle, and Yellow Warbler. Golden Eagle is not anticipated to nest in the VMP area due to lack of suitable nesting habitat, but this species may forage within grasslands in the VMP area. White-tailed Kite and Yellow Warbler may both nest and forage within the VMP area. White-tailed Kites could forage in grasslands and nest in trees adjacent to these areas. Yellow Warbler may nest and forage in riparian habitat within the VMP area. Other bird species that are protected by the MBTA and F&G Code Sections 3503 and 3503.5 could nest in grasslands, shrubs, trees, and other substrates within the VMP area. Due to seasonal curing times for fine fuels, and associated fire risk, complete avoidance of the bird nesting season is not possible.

All Treatments

Adult special-status birds and birds associated with active nests are not expected to be killed or injured by VMP activities because they could easily fly from the work site during staging, personnel arrival, and initial startup of equipment. However, eggs or young in nests may be killed, injured, or abandoned as a result of destruction by maintenance personnel or equipment, or removal of vegetation containing nests, as described below. This would be a significant impact on special-status bird species and other protected bird nests. Workers implementing VMP treatments could attract predators to active nests by leaving food scraps or other trash at VMP treatment areas. In some areas, VMP treatments would remove trees and shrubs that are suitable nesting habitat for White-tailed Kite and, potentially, Yellow Warbler, as well as other species with active nests. However, this is not anticipated to be a substantial loss of suitable nesting substrate when compared to the overall nesting substrate available in the VMP area and the surrounding vicinity. Implementation of **Mitigation Measure BIO-10 (Minimize Impacts to**

Nesting Birds via Site Assessments and Avoidance Measures) would reduce the potential for significant impacts on active bird nests by conducting pre-construction surveys and establishing buffers around nests identified during surveys. In addition, implementation of Mitigation Measures BIO-1 and BIO-6 would reduce impacts on active bird nests by requiring staff training and proper trash storage and disposal to avoid attracting predators to active nests. With implementation of these mitigation measures, impacts on adult special-status birds and birds associated with active nests would be less than significant.

Mechanical and Hand Labor Treatments

Removal of vegetation and trees could potentially harm the nests, eggs, or juvenile birds in nests protected by the MBTA and F&G Code and nests belonging to special-status birds through direct removal. Noise from vegetation management treatments could adversely affect nesting success of these species. Mechanical and hand labor treatments that employ the use of power tools (e.g., chainsaw) and equipment (e.g., masticator) are anticipated to have higher noise levels than other treatments types (as discussed in Section 3.10, "Noise and Vibration"), and would therefore have the highest potential for adverse noise impacts on nesting special-status birds and other protected bird nests. Such an impact on an active protected nest or special-status bird species would be significant. Implementation of Mitigation Measure BIO-10 would reduce the potential for significant impacts on active bird nests.

Foraging special-status and other birds are expected to avoid VMP treatment areas during implementation activities due to increased noise and human activity. These impacts would be temporary, would occur only during implementation of mechanical treatments, and would not substantially reduce the relatively abundant foraging habitat elsewhere in unaffected portions of the VMP area and the surrounding areas. With implementation of Mitigation Measure BIO-10, impacts of mechanical and hand labor treatments on foraging special-status birds and other birds would be less than significant.

Grazing

Grazing is not anticipated to generate excessive noise that would disrupt nesting or directly affect trees used by special-status bird species or other nesting birds. Yellow Warblers nest in riparian areas, including riparian shrubs. Their nests, if present in riparian shrubs, could be disturbed by goats, which would be a significant impact. However, goats would generally be excluded from riparian areas and would be strictly excluded from streams in accordance with Mitigation Measure BIO-5, which would reduce the potential for significant impacts on active Yellow Warbler nests. Additionally, approximately 900 acres within the VMP area are currently grazed each year for fire risk reduction under baseline conditions. During implementation of the VMP, a maximum of 1,100 acres of annual grazing would occur; therefore, the increased amount of grazing would not result in a substantial increase in the potential for disturbance of special-status bird species or other nesting birds. With implementation of Mitigation Measure BIO-5, impacts of grazing on special-status birds and other birds would be less than significant.

Herbicides

As with other VMP treatment techniques, herbicide application would eliminate treated vegetation and potentially alter vegetation structure in some portions of the VMP area. Herbicides would be used to control regrowth of removed trees and shrubs, and to kill or

prevent growth of vegetation within targeted portions of the VMP area. Herbicide application would primarily occur within two feet of ground level, but may be applied within 10 feet of ground level (for foliar herbicide application to shrubs) and would be unlikely to affect species that nest in trees or other substrates above that height. Herbicides used under the VMP are generally not anticipated to result in significant impacts to special-status birds given the relatively abundant foraging habitat and nesting substrate available in untreated portions of the VMP area and surrounding vicinity. In addition, implementation of Mitigation Measure HAZ-5 would prevent herbicide use within riparian habitat, which is suitable habitat for Yellow Warbler. The application of herbicide to an active nest belonging to special-status or other bird species could result in mortality of individuals, nest abandonment, or reduced fitness, all of which would be a significant impact. Implementation of Mitigation Measure BIO-10 would minimize potential impacts to active special-status and other bird nests from herbicide use by creating avoidance buffers around active nests. With implementation of Mitigation Measures BIO-10 and HAZ-5, impacts of herbicides on special-status birds and other birds would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure BIO-6: Trash Removal (revised from VMP BMP BIO-7)

See text in Impact BIO-2A above.

Mitigation Measure BIO-10: Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures (revised from VMP BMP BIO-1)

- When feasible, tree and shrub removal shall be conducted outside of the typical bird nesting season (February 1 and August 31).
- For activities occurring between February 1 and August 31, project areas shall be surveyed by a qualified biologist for nesting birds within 2 weeks prior to starting work. If a lapse in project-related work of 2 weeks or longer occurs, the treatment area shall be resurveyed before project work can be reinitiated.
- If nesting birds are found, a buffer shall be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 250 feet for raptors, herons, and egrets; 25 feet for ground-nesting non-raptors; and 50 feet for non-raptors nesting on trees, shrubs, and structures. A qualified biologist may identify an alternative buffer based on a site-specific evaluation. No work shall occur within the buffer without written approval from a qualified biologist, for as long as the nest is active.

- The boundary of each buffer zone shall be marked with fencing, flagging, or other easily identifiable marking if work will occur immediately outside the buffer zone.
- All protective buffer zones shall be maintained until the nest becomes inactive, as determined by a qualified biologist.
- If monitoring shows that disturbance to actively nesting birds is occurring, buffer widths shall be increased until monitoring shows that disturbance is no longer occurring. If this is not possible, work shall cease in the area until young have fledged and the nest is no longer active.

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Conclusion

VMP treatments have the potential to impact special-status birds (i.e., White-tailed Kite, Golden Eagle, and Yellow Warbler) and protected bird nests through direct removal of nests and noise impacts to nesting birds. Such an impact would be significant. Implementation of Mitigation Measures BIO-1, BIO-5, BIO-6, BIO-10, and HAZ-5 would reduce the potential for significant impacts by staff training, restricting grazing in riparian habitat, requiring proper trash storage and disposal to avoid attracting predators to active nests, conducting pre-activity nesting bird surveys and establishing species-appropriate avoidance buffers where active bird nests are found, and restricting the use of herbicides in riparian habitat. The implementation of these mitigation measures would prevent potential impacts to special-status bird species and other protected bird nests during VMP treatment, which reduces the potential impact to a less-than-significant level. Therefore, impacts would be **less than significant with mitigation.**

Impact BIO-2C: Potential Adverse Effects on Special-Status Mammals and CEQA-relevant Bat Species (*Less than Significant with Mitigation*)

Special-status mammals with the potential to occur in the VMP area include western red bat, pallid bat, western mastiff bat, and San Francisco dusky-footed woodrat. Several non-special-status but CEQA-relevant bat species (hereafter referred to as "CEQA-relevant bats") have potential to occur in the VMP area, including myotis bats (*Myotis* spp.) and big brown bat (*Ephesicus fiscus*). Western red bats, western mastiff bats, and CEQA-relevant bats may roost in trees in the VMP area. San Francisco dusky-footed woodrat stick houses (also referred to as "nests") were observed in many locations within the VMP area and were most often encountered in oak woodlands and riparian areas.

Mechanical and Hand Labor Treatments

Mechanical and hand labor treatments could impact special-status bats or large colonial roosts of CEQA-relevant bat species through the removal of trees that provide roosting habitat or direct mortality of bats. Removal of an active special-status roost or large colonial roost of CEQA-relevant bats would be a significant impact. The bat maternity season (March 15–July 31) is an especially sensitive period, as young may be unable to fly (i.e., non-volant) during this period. Implementation of **Mitigation Measure BIO-11 (Protection of Bat Colonies)** would

reduce the potential for impacts on special-status bats through evaluation of trees by a qualified biologist to determine the location of high-quality bat habitat, avoidance of maternity roosts while occupied by non-volant bats, and (where roosts are unavoidable) exclusion of bats from occupied non-breeding roosts during less sensitive periods.

Mechanical and hand labor treatments could result in accidental crushing of woodrat stick houses, or direct mortality from crushing by mechanical equipment. Implementation of **Mitigation Measure BIO-12 (Protection of Dusky-footed Woodrats)** would minimize these impacts by avoiding woodrat stick houses, maintaining an intact escape corridor where feasible, and hand-dismantling of houses by a qualified biologist if avoidance is not feasible. Mitigation Measure BIO-1 requires a training program for all staff, contractors, and volunteers who would perform vegetation management work. The training would describe biological resources, including special-status mammals and CEQA-relevant bat species, and how to avoid harming them. With implementation of Mitigation Measures BIO-1, BIO-11, and BIO-12, impacts of mechanical and hand labor on special-status mammals and CEQA-relevant bat species would be less than significant.

Grazing

Grazing would have no impact on bats, as grazing at ground level would not impact bat habitat. If grazing occurs in areas where woodrat stick houses are located, grazing animals could climb on stick houses. This impact would be less than significant, as stick houses would likely not be destroyed by grazing animals. Impacts of grazing on special-status mammals and CEQA-relevant bat species would be less than significant and no mitigation is required.

Herbicides

Herbicide use could result in impacts on bats if they ingest or come into direct contact with herbicides. Consumption by mammals of vegetation exposed to glyphosate may result in impacts to growth and reproduction (USEPA 2019). Imazapyr is categorized as practically nontoxic to small mammals (USEPA 2005). Triclopyr acid was found to be practically nontoxic to mammals (USEPA 1998). Other ingredients present in herbicides such as surfactants may have impacts on wildlife. Herbicide is expected to be applied on vegetation at or within 10 feet of ground level. Implementation of Mitigation Measure HAZ-4 limits application frequency; minimizes potential for drift; and prohibits application within 200 feet of residences, schools, and public use areas. Implementation of Mitigation Measure HAZ-5 would reduce the potential to impact bats by requiring the use of the lowest recommended application rates of herbicides and surfactants that achieve project objectives, and Mitigation Measure HYD/WQ-1 would restrict work to daylight hours (except in case of an emergency) when bats are not active. Given the relative abundance of bat foraging habitat in untreated portions of the VMP area and surrounding vicinity, and with implementation of Mitigation Measures HAZ-4, HAZ-5, and HYD/WQ-1, impacts on bats from herbicide use would be less than significant.

Herbicide use could impact woodrats if they were to eat vegetation treated with herbicide. As described above, woodrat stick houses were often observed in riparian areas adjacent to creeks. Implementation of Mitigation Measure HAZ-4 limits application frequency; minimizes potential for drift; and prohibits application within 200 feet of residences, schools, and public use areas. Implementation of Mitigation Measure HAZ-5 would reduce the potential for impacts to woodrats by prohibiting herbicide use within 60 feet of streams. Given the relative abundance

of woodrat foraging habitat in untreated portions of the VMP area and surrounding vicinity, and with implementation of Mitigation Measures HAZ-4 and HAZ-5, impacts on woodrats from herbicide use would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-11: Protection of Bat Colonies (VMP BMP BIO-8)

To minimize impacts on special-status bats (e.g., pallid bat, western mastiff bat, and western red bat) and large colonies of CEQA-relevant bats, the City and its contractors shall implement the following practices during tree trimming and removal activities:

1. If high-quality habitat for roosting bats (i.e., large trees with cavities of sufficient size to support roosting bats, as determined by a qualified bat biologist) is present, a qualified bat biologist shall conduct a survey for evidence of bat use within 2 weeks before the commencement of work activities. If bat-use evidence is observed, or if high-quality roost sites are present in areas where evidence of bat use might not be detectable (such as a tree cavity), the biologist shall conduct an evening survey and/or nocturnal acoustic survey (as necessary) to determine if a bat colony is present and to identify the specific location of the bat colony.

2. If no active maternity colony or non-breeding bat roost is located, work can continue as planned.

3. If an active maternity colony or non-breeding bat roost is located, work shall be redesigned/rescheduled to avoid disturbance of the roosts, if feasible.

4. If an active maternity colony is located and work cannot be redesigned to avoid removal or disturbance of the occupied tree or structure, disturbance shall take place outside the maternity roost season (March 15–July 31), and a disturbance-free buffer zone (determined by a qualified bat biologist based on the roost situation and species' sensitivity) shall be observed during this period.

5. If an active non-breeding bat roost is located and work cannot be redesigned to avoid removal or disturbance of the occupied tree or structure, the individuals shall be safely evicted between August 1 and October 15 or from February 15 to March 14. Bats may be evicted through exclusion after notifying CDFW. Trees with roosts that need to be removed shall first be disturbed at dusk, just before removal that same evening, to allow bats to escape during the darker hours.

Mitigation Measure BIO-12: Protection of Dusky-footed Woodrats (VMP BMP BIO-9)

1. If woodland, forest, or scrub habitat is present in a treatment area, a qualified biologist shall conduct a focused survey for woodrat stick houses within the

treatment area, access routes, and staging areas within seven days of the commencement of treatment activities.

2. If a woodrat stick house is identified in a work area, the City shall attempt to preserve the nest and maintain an intact dispersal corridor between the stick house and undisturbed habitat. Retained woodrat stick houses shall be marked with high visibility construction fencing or flagging to avoid accidental encroachment on the stick house.

3. If the woodrat stick house cannot be avoided, a qualified biologist shall deconstruct the stick house by hand in a phased approach and relocate the stick house materials to the nearest undisturbed suitable habitat. In the phased dismantling process, each house will be partially dismantled on the first day, and the remainder will be dismantled the next day, to encourage dispersal of any woodrats present. If the biologist observes that young are present, dismantling shall cease. Dismantling shall resume when the biologist determines that the young have left or are old enough to vacate under their own volition.

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HYD/WQ-1: Work Windows (VMP BMP GEN-1)

See text in Section 3.9, "Hydrology and Water Quality."

Conclusion

Table 3.4-5 summarizes potential direct impacts on special-status wildlife species and identifies the mitigation measures to reduce impacts to less-than-significant levels, where appropriate, for each species that could occur in the VMP area. VMP treatments have the potential to impact special-status mammals and CEQA-relevant bats through the removal of trees that provide roosting habitat for these species, direct mortality of bats, accidental crushing of woodrat stick houses, direct mortality of woodrats, or woodrat ingestion of herbicides. Implementation of Mitigation Measure BIO-1 would reduce the potential for impacts on bats and special-status mammals through a training program for staff. Implementation of Mitigation Measure BIO-11 would reduce the potential for impacts on special-status bats through evaluation and identification of trees with high-quality bat habitat by a qualified biologist, avoidance of maternity roosts through redesigning/rescheduling work or no-disturbance buffers, and exclusion of bats from occupied non-breeding roosts during less sensitive (i.e., when non-volant bats are absent) periods would minimize impacts on bats present. Implementation of Mitigation Measure BIO-12 would minimize impacts on woodrats by conducting surveys for stick houses, avoiding stick houses and maintaining an intact escape corridor, where feasible, and phased hand-dismantling of stick houses by a qualified biologist if avoidance is not feasible. Implementation of Mitigation Measure HAZ-4 limits application frequency; minimizes potential for drift; and prohibits application within 200 feet of residences, schools, and public use areas.

Table 3.4-5. Summary of Direct Impacts on Special-Status Wildlife Species from VMP Implementation

Special-Status Species	Impact Summary				Mitigation for Potentially Significant Impacts
	Mechanical Treatments	Hand Labor Treatment	Grazing	Herbicides	
Amphibians					
California red-legged frog *Rana draytonii*	Direct mortality	Direct mortality	Direct mortality Sedimentation of CRLF habitat	Herbicide use near streams could result in adverse effects.	BIO-1, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, GEO-1, GEO-2, HAZ-4, HYD/WQ-1
Reptiles					
Alameda whipsnake *Masticophis lateralis euryxanthus*	Direct mortality	Direct mortality	Direct mortality	Herbicide use could result in adverse effects.	BIO-1, BIO-5, BIO-6, BIO-7, HAZ-4, HYD/WQ-1
western pond turtle *Emys marmorata*	Direct mortality	Direct mortality	Direct mortality	Herbicide use near streams could result in adverse effects.	BIO-1, BIO-5, BIO-6, BIO-8, GEO-1, GEO-2, HAZ-4, HYD/WQ-1
Birds*					
White-tailed Kite *Elanus leucurus*	Nest harm, noise, direct removal	Nest harm, noise, direct removal	Grazing would not generate excessive noise that could disrupt nesting or directly impact trees used by special-status bird species or nesting birds.	Nest harm	BIO-1, BIO-6, BIO-10
Golden Eagle (foraging only in VMP area) *Aquila chrysaetos*	Less than significant	Less than significant	Less than significant	Less than significant	N/A

Special-Status Species	Impact Summary				Mitigation for Potentially Significant Impacts
	Mechanical Treatments	Hand Labor Treatment	Grazing	Herbicides	
Yellow Warbler *Setophaga petechia*	Nest harm, noise, direct removal	Nest harm, noise, direct removal	Grazing would not generate excessive noise that could disrupt nesting or directly impact trees used by special-status bird species or nesting birds.	Nest harm	BIO-1, BIO-10, BIO-5, BIO-6, HAZ-5
Mammals					
pallid bat *Antrozous pallidus*	noise, direct removal	noise, direct removal	No impact	Impacts to growth and reproduction.	BIO-1, BIO-11, HAZ-5, HYD/WQ-1
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	direct removal	direct removal	Grazing animals could walk on woodrat stick houses, but impacts would be less than significant.	Impacts to growth and reproduction.	BIO-1, BIO-12, HAZ-5
western mastiff bat *Eumops perotis californicus*	noise, direct removal	noise, direct removal	No impact	Impacts to growth and reproduction.	BIO-1, BIO-11, HAZ-5, HYD/WQ-1
western red bat *Lasiurus blossevillii*	noise, direct removal	noise, direct removal	No impact	Impacts to growth and reproduction.	BIO-1, BIO-11, HAZ-5, HYD/WQ-1

*Bird nests protected under the Migratory Bird Treaty Act and the California Fish and Game Code would have impacts similar to those for special-status bird nests and would be similarly protected by proposed mitigation measures.

Implementation of Mitigation Measure HAZ-5 would reduce the potential for herbicide impacts by requiring the lowest recommended application rates of herbicides and surfactants that achieve project objectives during application, and prohibiting herbicide use within 60 feet of streams. Implementation of Mitigation Measure HYD/WQ-1 would reduce impacts on bats by restricting work to daylight hours (except in case of an emergency), when bats are not active. The implementation of these mitigation measures would prevent potential impacts to special-status mammals and CEQA-relevant bats during VMP treatment, which would reduce the potential impact to a less-than-significant level. Therefore, impacts on special-status mammals and CEQA-relevant bats would be **less than significant with mitigation.**

Impact BIO-3: Potential Adverse Effects on Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations or by CDFW, USFWS, or NMFS (*Less than Significant with Mitigation*)

Impact BIO-3A: Impacts on Riparian Habitat or Other Sensitive Natural Communities (*Less than Significant with Mitigation*)

Note that impacts to wetlands are addressed separately in Impact BIO-4.

Several VMP treatment projects are located on parcels defined as "creekside properties" under the City of Oakland's Creek Protection Ordinance (Figure 3.4-2). **Table 3.4-4** in Impact BIO-2A shows priority projects located within creekside properties and/or within 100 feet of creek centerlines. The majority (58.6 acres out of a total of 92 acres) of the VMP treatment project acreage within 100 feet of streams consist of grazing treatments (VMP treatment project numbers SHP-4, JMP-4, KNO-5, and SHF-3). To implement VMP treatment projects on creekside properties (including grazing), OFD would be required to obtain a Creek Protection Permit. **Table 3.4-6** shows sensitive natural communities present within priority projects.

Table 3.4-6. Sensitive Natural Communities within Priority Project Areas

VMP Treatment Project Number	Priority	Sensitive Natural Community	Acres
Dimond Canyon Park			
DIM-1	1	red alder forest	0.02
		redwood forest	0.18
Joaquin Miller Park			
JMP-1	1	redwood forest	9.52
		Valley/Foothill Riparian	0.22
JMP-2	1	redwood forest	4.05
JMP-3	2	redwood forest	0.01
JMP-4	3	redwood forest	5.62
Leona Heights Park			
LHT-1	1	redwood forest	3.74
LHT-2	1	redwood forest	0.39
LHT-3	2	redwood forest	0.29

VMP Treatment Project Number	Priority	Sensitive Natural Community	Acres
Knowland Park and Arboretum			
KNO-1	1	needle grass – melic grass grassland	0.02
KNO-5	3	bush monkeyflower scrub	0.51
		California bay forest	1.03
		Freshwater Emergent Wetland	0.17
		brittle leaf – woolly leaf manzanita chaparral	7.92
		needle grass – melic grass grassland	12.51
		redwood forest	0.18
Sheffield Village Open Space			
SHF-1	1	Needle grass – melic grass grassland	0.04
SHF-2	2	California bay forest	0.12
SHF-3	3	bush monkeyflower scrub	0.25
		California bay forest	0.62
		Needle grass – melic grass grassland	0.81
Urban and Residential Parcels			
URB-1	1	California bay forest	0.21
		redwood forest	0.23

All Treatments

The VMP does not propose vegetation type conversion as an end goal or strategy; rather, thinning vegetation and providing, creating, and maintaining adequate spacing among retained vegetation is the primary management strategy to reduce the potential for ignitions and the likelihood of extreme fire behavior. Additionally, any work within riparian habitats would require notification of CDFW under Section 1602 of the F&G Code, which is likely to result in additional conditions. For all treatments, implementation of Mitigation Measure GEO-1 would minimize impacts to sensitive natural communities by minimizing the footprint of soil disturbance. Implementation of Mitigation Measure BIO-1 would reduce the potential for impacts on sensitive natural communities through a training program for staff. Implementation of Mitigation Measure HYD/WQ-1 would limit vegetation treatment to periods without significant rainfall, herbicide use to the dry season, and work in waterbodies, which would limit impacts to riparian habitat.

Mechanical and Hand Labor Treatments

Mechanical and hand labor treatments could alter species composition over time. Although vegetation type conversion is not the goal of the VMP, vegetation treatment may cause shifts in the relative abundance of plant species within each vegetation type. Priority projects within the VMP that propose hand and/or mechanical labor treatments would overlap the following sensitive natural communities: redwood forest, California bay forest, red alder forest, riparian

areas, and needle grass – melic grass grassland. See **Table 3.4-6** and Figure 3.4-3 for more details on the size and location of these communities.

Within forested vegetation types, the general goal of VMP treatment activities is a shaded fuel break. The treatment standards for each of these sensitive natural communities are as follows:

- For redwood forest, the treatment standards focus on creating vertical separation between the top of surface fuels and the lowest tree branch by thinning young redwood crown sprouts and sapling growth, maintaining a closed redwood canopy to shade understory fuels, and removing highly flammable plant species. These treatment techniques are not anticipated to result in significant impacts to redwood communities within the VMP.

- For California bay forest, the treatment standards for oak woodland described in the VMP would apply. These standards focus on creating vertical separation between the top of surface fuels and the lowest tree branch, maintaining a closed canopy, removal of understory fuels, and removing highly flammable plant species. California bay is included on the list of highly flammable plant species in Appendix D of the VMP (provided in **Appendix A**, *Draft Vegetation Management Plan*, of this DEIR). However, in areas where this tree is dominant (such as California bay forest), it would remain the dominant tree species following VMP treatment. Understory composition may change following treatment; however, these forested sensitive natural communities would remain sensitive natural communities following treatment because the dominant or characteristic species would remain.

- Red alder forest and other riparian areas within the VMP area pose a relatively low fire risk, and treatment activities would be minimized in these areas. Treatment standards within riparian areas focus on removal/treatment of downed tree and leaf litter material outside of the stream channel, treatment of ladder fuels on the edges of riparian habitat where this habitat abuts other habitat types, and removal of highly flammable plant species. The approach of minimizing treatment in these areas would limit impacts to these habitats. Additionally, the requirement for notification of CDFW under Section 1602 of the F&G Code for treatments within riparian areas, and the requirement of a Creek Protection Permit for work within creekside properties, are expected to result in additional impact reduction practices. Implementation of **Mitigation Measure BIO-13 (Develop and Implement a Plan to Replace Riparian Habitat)** would mitigate loss of habitat by replacing any native riparian trees removed from within riparian habitat in the VMP area.

- Needle grass – melic grass grassland is present on 0.06 acre of the areas proposed for mechanical and/or hand labor treatments. Treatment of these areas by mechanical or hand labor techniques such as mowing or weed whacking is not anticipated to result in significant impacts to community, due to the small area of treatment. Additionally, the dominant native grass in this community is purple needlegrass, a perennial grass that is anticipated to persist following mechanical and/or hand labor treatments.

With implementation of Mitigation Measure BIO-13, which requires the development and implementation of a plan to replace riparian resources, impacts on sensitive natural communities from mechanical and hand labor would be less than significant.

Grazing

Under baseline conditions, goat grazing occurs on approximately 900 acres of the VMP area annually. With implementation of the VMP, goat grazing is anticipated to increase to 1,100 acres annually. Most areas proposed for grazing under the VMP are already being grazed under baseline conditions. Sensitive natural communities within areas proposed for grazing treatment include riparian areas, California bay forest, bush monkeyflower scrub, brittle leaf – woolly leaf manzanita chaparral, and needle grass – melic grass grassland. Overgrazing of these sensitive natural communities could results in significant impacts. The VMP recommends development of site-specific grazing management plans for each grazing treatment area. These grazing management plans would consider site-specific conditions; specify management objectives and standards; and identify animal stocking rates and use levels (typically measured in pounds per acre of residual dry matter), grazing season, monitoring requirements, and performance criteria. Development of such plans would reduce potential impacts on sensitive natural communities. Implementation of Mitigation Measure BIO-5 would also reduce impacts by generally excluding livestock from riparian areas, excluding livestock from mixed chaparral (brittle leaf – woolly leaf manzanita chaparral) habitat, monitoring livestock to prevent overgrazing, and not grazing grasslands to lower than 4 inches. As described in the VMP, the City is encouraged to coordinate with local park stewardship groups to minimize potential grazing impacts to restoration projects conducted within the VMP area. With implementation of site-specific grazing management plans and Mitigation Measure BIO-13, impacts on sensitive natural communities from grazing would be less than significant.

Herbicides

Herbicide use is not proposed on the dominant species found within sensitive natural communities. Herbicide use is proposed on eucalyptus, acacia, French broom, Scotch broom, pampas grass, and jubata grass. If used near sensitive natural communities, herbicide could have off-target impacts through drift of spray-applied herbicide into the sensitive natural community. Implementation of Mitigation Measure HAZ-5, which prohibits the use of herbicide within 60 feet of streams, would reduce the potential for herbicide impacts on riparian vegetation. Implementation of Mitigation Measure HAZ-4**,** which avoids herbicide treatment during wind conditions that would exacerbate herbicide drift, and Mitigation Measure HAZ-5, which requires herbicides to be applied by a licensed applicator, would minimize the potential for drift onto non-target plants and sensitive natural communities. With implementation of Mitigation Measures HAZ-4 and HAZ-5, impacts on sensitive natural communities from herbicides would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure BIO-13: Avoid Riparian Habitat and Develop and Implement a Plan to Replace Affected Riparian Habitat.

The City's preferred approach is to avoid causing any impacts to riparian areas, if feasible. Before implementation of treatment activities, the City, under the direction of a qualified biologist, shall flag or fence riparian areas to be avoided with brightly visible construction flagging and/or fencing. For unavoidable impacts to riparian habitat, the City shall develop and implement a plan to replace riparian habitat affected by VMP activities.

For replacement of riparian habitat, native riparian trees 4-6 inches dbh removed for the VMP shall be replaced at a 2:1 ratio; native riparian trees larger than 6 inches dbh shall be replaced at a 3:1 ratio. These replacement trees shall be planted within riparian zones in the VMP area. Planted trees shall be monitored annually for 5 years to assess the effectiveness of replacement efforts, and results shall be reported to CDFW. The performance standard for success of the mitigation shall be 65 percent survival of planted trees after 5 years.

Alternatively, the City may preserve existing riparian habitat of equal or better value to the affected riparian habitat through a conservation easement at a sufficient ratio to offset the loss of riparian habitat function. Mitigation Measure GEO-1: Minimize Area of Disturbance (VMP BMP GEN-2)

See text in Section 3.6, "Geology, Soils, and Seismicity."

Mitigation Measure HYD/WQ-1: Work Windows (VMP BMP GEN-1)

See text in Section 3.9, "Hydrology and Water Quality."

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Conclusion

Vegetation type conversion is not proposed under the VMP, and sensitive natural communities would remain following VMP treatment. Removal of trees within riparian habitat would impact this community. Overgrazing and herbicide drift could also impact sensitive natural communities. Implementation of Mitigation Measure BIO-5, BIO-13, GEO-1, HAZ-4, and HAZ-5 would avoid and minimize impacts on sensitive natural communities. Thus, impacts would be **less than significant with mitigation.**

Impact BIO-3B: Impacts Caused by Non-native and Invasive Species and Pathogens (*Less than Significant with Mitigation*)

VMP treatment activities have potential to introduce or encourage the spread of non-native or invasive plant species and pathogens through the removal of existing vegetation, soil disturbance, transferring of plant and pathogen material, and vehicle and equipment operation in areas of such plants and pathogens. The introduction or spread of non-native or invasive plants and pathogens could impact sensitive natural communities, causing adverse modifications to vegetation communities that represent habitat for special-status plant and animal species.

The VMP area is located within the Pitch Canker Zone of Infestation (CAL FIRE 1998) and SOD Zone of Infestation (CAL FIRE 2005) and the "Regulated Area" for sudden oak death (SOD) as designated by the California Department of Food and Agriculture (CDFA). Eucalyptus longhorn borer beetles have also been documented in the VMP area. Pitch canker is an introduced disease of pines caused by the fungus *Fusarium circinatum* (CAL FIRE 2013). Monterey pine is currently the most prevalent host for pitch canker (Gordon et al. 2012). Pitch canker impacts include crown dieback and mortality of infected trees of all sizes (CAL FIRE 2013). Pitch canker can spread through airborne spores, insects, pruning tools, and movement of logs from infected trees (CAL FIRE 2013).

Phytophthora species are microscopic oomycetes (water molds), and many *Phytophthora* species are known to be plant pathogens (Phytosphere Research 2018). SOD is a disease of oak trees caused by *Phytophthora ramorum* that also infects more than 100 other plant species (Alexander and Swain 2010). It is estimated to have killed more than one million oaks and tanoaks (*Notholithocarpus densiflorus*) between 2000 and 2010 (Alexander and Swain 2010). California bay trees are prevalent hosts of this pathogen, and they play a role in its spread to nearby oaks (Alexander and Swain 2010). SOD has been detected within the following VMP areas: Garber Park, Shepherd Canyon, Dimond Canyon Park, Joaquin Miller Park, Leona Heights Park, Knowland Park, and Sheffield Village (UC Berkeley 2016). SOD has also been detected in trees within or immediately adjacent to the priority roadside treatment area along Skyline Boulevard (UC Berkeley 2016). *Phytophthora cinnamomi* is another plant pathogen known to occur in the VMP area, which has killed pallid manzanitas in the VMP area (USFWS 2015). *Phytophthora* can be present in a variety of sites and materials, including commercial nursery stock, landscaped and agricultural areas, and natural areas. *Phytophthora* can be spread via soil, plant material and debris, and water from infested areas (Phytosphere Reasearch 2018).

A variety of plant species listed as invasive by the California Invasive Plant Council (Cal-IPC 2020) and/or listed as noxious weeds by CDFA (CDFA 2020) are present within the VMP area. Implementation of the VMP would include vegetation treatment on some rapidly spreading/highly flammable species that are also listed as invasive, such as French broom, Scotch broom, pampas grass, and jubata grass. Removal of these species would minimize their spread within the VMP area, which would be a beneficial impact. Implementation of the VMP would cause some degree of ground disturbance in treatment areas, which could lead to the spread of invasive plant species. VMP implementation would also involve crews and equipment moving among multiple sites, which could spread seeds or other propagules of invasive plant species to new areas.

Mechanical Treatments

Mechanical treatments would result in soil disturbance, increasing the potential for invasive species to establish in disturbed areas. Additionally, equipment used for mechanical treatment could carry pathogens or invasive species seeds from sites outside of the VMP area or from infested sites within the VMP area to uninfested sites. The spread of plant pathogens or invasive species into new, uninfested areas would be a significant impact. Implementation of Mitigation Measure BIO-1 would reduce this impact by requiring staff training. Implementation of Mitigation Measure BIO-3 would reduce the risk of invasive plants establishing in disturbed areas by requiring seeding of exposed soil with native plant species. Implementation of **Mitigation Measure BIO-14 (Prevent the Spread of Invasive Plants and Plant Pathogens)** would minimize the potential for spread of invasive plants and plant pathogens by requiring cleaning of equipment before arrival at a treatment site, sanitizing of equipment used in areas infested with pitch canker disease and/or SOD, and not transporting diseased wood outside of Alameda or Contra Costa Counties. Implementation of Mitigation Measure HAZ-1 would minimize the potential for spread of pathogens and invasive species by requiring equipment to be cleaned before being transferred and used in a different watershed. With implementation of these mitigation measures, impacts related to non-native and invasive species and pathogens from mechanical treatments would be less than significant.

Hand Labor Treatments

Hand labor treatments are not anticipated to result in substantial soil disturbance. Hand tools could carry pathogens or invasive species seeds from sites outside of the VMP area or from infested sites within the VMP area to uninfested sites. The spread of plant pathogens or invasive species into new, uninfested areas would be a significant impact. As described above, implementation of Mitigation Measure BIO-14 would reduce the potential for spread of invasive plants and plant pathogens. With implementation of Mitigation Measure BIO-14, impacts related to non-native and invasive species and pathogens from hand labor would be less than significant.

Grazing

Grazing treatments, when properly applied, can reduce invasive species within grasslands, which would be a beneficial impact (Huntsinger et al. 2007). Livestock used for vegetation treatment could transport invasive plants from outside the VMP area. However, grazing has been used as a vegetation management practice for many years in the VMP area and VMP grazing treatments generally overlap with existing grazing areas. In addition, the degree of increase in grazed area above baseline conditions would be less than significant. Therefore, impacts related to non-native and invasive species and pathogens from grazing would benefit grassland habitat and would be less than significant and no mitigation is required.

Herbicides

Most species targeted for herbicide application are considered invasive, such as French broom, Scotch broom, pampas grass, and jubata grass. Herbicide use is also proposed on blue gum eucalyptus (which has a Cal-IPC rating of “Limited”) and acacia species. Acacia species present in the VMP area include silver wattle (*Acacia dealbata*, Cal-IPC “Moderate”) and blackwood acacia (*Acacia melanoxylon*, Cal-IPC “Limited”). Treatment of invasive species with herbicide would reduce their abundance in the VMP area, which would be a beneficial impact. However, crews

applying herbicide could carry pathogens or invasive species seeds from sites outside of the VMP area or from infested sites within the VMP area to uninfested sites. As described above, implementation of Mitigation Measure BIO-14 would reduce the potential for spread of invasive plants and plant pathogens. With implementation of Mitigation Measure BIO-14, impacts related to non-native and invasive species and pathogens from herbicide would benefit habitats in the VMP area and would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-3: Seeding with Native Species (VMP BMP BIO-10)

See text in Impact BIO-1A above.

Mitigation Measure BIO-14: Prevent the Spread of Invasive Plants and Plant Pathogens

To minimize the spread of plant pathogens, the City and its contractors shall require that all equipment (including personal gear such as boots) shall be cleaned of soil, seeds, and plant material prior to arriving on a treatment site. All soil and organic material (e.g., roots, sap) shall be removed from the surfaces of equipment and clothing. If necessary, a detergent solution and brush shall be used to scrub surface contaminants at a utility sink.

Tools and machinery used to prune, cut, or chip trees infected with pitch canker disease shall be cleaned and sterilized before being used on uninfected trees or in uninfested areas. Tools and machinery used to prune, cut, or chip trees or shrubs in areas of known SOD infestation (currently Garber Park, Shepherd Canyon, Dimond Canyon Park, Joaquin Miller Park, Leona Heights Park, Knowland Park, Sheffield Village, and roadside areas of Skyline Boulevard) shall be cleaned and sterilized before being used in a new treatment area. Tools and machinery will be cleaned and sterilized prior to being used in proximity to known pallid manzanita populations. Ethyl or isopropyl alcohol (70-90%), 10% solution of bleach (1 part household bleach in 9 parts water), or a quaternary ammonium disinfectant (such as Lysol®) may be used. Proper use of ethyl or isopropyl alcohol involves spraying to thoroughly wet the surface and allowing to air dry before use. For freshly diluted bleach solution, exposure for a minimum of 1 minute is required. As bleach solutions degrade quickly, bleach solutions dispensed by spray bottles must be made fresh daily. Due to corrosivity, bleach solutions are not advised for steel or other materials that could be damaged by corrosion. Proper use of quaternary ammonium disinfectant involves use according to manufacturer recommendations.

Limbs and small pieces of wood from diseased trees may be chipped and the mulch deposited on site. Any material, including logs, that is removed from the site should be tightly covered with a tarp during transit and taken to the nearest landfill or designated disposal facility for prompt burial, chipping and composting, or burning. Diseased wood shall not be transported beyond Alameda or Contra Costa County

Mitigation Measure HAZ-1: Vehicle and Equipment Maintenance (VMP BMP GEN-8)

See text in Section 3.8, "Hazards and Hazardous Materials."

Conclusion

Implementation of the VMP would result in increased potential for the spread and establishment of invasive species and pathogens from soil disturbance, equipment use, and grazing. However, implementation of Mitigation Measures BIO-1, BIO-3, BIO-14, and HAZ-1 would reduce the potential for the introduction and spread of invasive plants and pathogens. Thus, the level of impact would be less **than significant with mitigation.**

Impact BIO-4: Potential Adverse Effects on Federally Protected or State-Protected Wetlands (*Less than Significant with Mitigation*)

Emergent wetlands are present within Joaquin Miller Park, Knowland Park, and Garber Park (Figure 3.4-1). Riverine habitat in the VMP area includes perennial, intermittent, and ephemeral streams (Figure 3.4-2), and small wetlands may be present along portions of these riverine habitats. As described in Impact BIO-3A, some VMP treatment projects are located within 100 feet of creeks. VMP treatments are not anticipated to occur in wetland areas due to the low fire risk in these habitats. Most VMP treatments would occur in upland areas and would not result in direct disturbance to wetlands or other federally protected or state-protected waters.

Mechanical Treatments

Mechanical techniques have the potential to loosen and disturb soils. Without adequate protection measures in place, such activities could lead to indirect impacts on nearby wetlands or waters due to erosion, sedimentation, and siltation. Leaks and spills associated with the operation and maintenance of motorized equipment present another risk to wetlands and waters. It is possible that heavy equipment may need to cross stream channels to access treatment areas, which could cause temporary or permanent impacts to these features. Impacts that result in the loss of functions and values of affected wetlands or water features would be significant.

Implementation of the following mitigation measures would reduce the VMP's potential for impacts to federally protected or state-protected wetlands or waters. Implementation of Mitigation Measures BIO-1 and BIO-6 would reduce impacts on wetlands and waters by requiring staff training and proper trash storage and disposal. Implementation of **Mitigation Measure BIO-15 (Avoid Impacts on Federally Protected Wetlands and Waters, as Feasible)** and **Mitigation Measure BIO-16 (Provide Compensatory Mitigation for Unavoidable Impacts on Waters of the United States and the State)** would minimize impacts to wetlands and waters by avoiding impacts to these features and providing compensatory mitigation for unavoidable impacts, respectively. Implementation of Mitigation Measure GEO-1 would limit ground disturbance to the minimum footprint necessary to meet VMP objectives, leave stumps intact, and minimize heavy equipment use on steep slopes. Implementation of Mitigation Measure GEO-2 would require the use of erosion and sediment controls. Implementation of Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-5, HAZ-6, and HAZ-8 would ensure proper handling and use of herbicides and other hazardous materials, along with appropriate vehicle maintenance to prevent spills and leaks. Implementation of Mitigation Measure HYD/WQ-1 would limit

vegetation treatment to periods without significant rainfall, limit herbicide use to the dry season, and limit work in waterbodies. Additionally, any VMP treatment activity that would involve work within riparian habitat would require notification of CDFW under Section 1602 of the F&G Code, which is expected to result in additional impact reduction practices. With implementation of these mitigation measures, impacts on federally protected and state-protected wetlands and waters from mechanical treatments would be less than significant.

Hand Labor Treatments

In comparison to other treatments, hand labor treatments would likely have a low potential for increasing sedimentation or siltation of wetlands or waters. However, if hand labor treatments occurred in wetlands or waters, temporary impacts to these features could occur during vegetation removal. Impacts that result in the loss of functions and values of the wetland or water feature would be significant. Implementation of Mitigation Measures BIO-15 and BIO-16 would minimize impacts to federally protected and state-protected wetlands and waters by avoiding impacts to these features and providing compensatory mitigation for unavoidable impacts, respectively. Implementation of Mitigation Measure HYD/WQ-1 would limit vegetation treatment to periods without significant rainfall, herbicide use to the dry season, and work in waterbodies. With implementation of these mitigation measures, impacts on federally protected and state-protected wetlands and waters from hand labor would be less than significant.

Grazing

Grazing activities have the potential to denude vegetation, compact soils, and create livestock trails and areas of bare soil, which could lead to the formation of gullies and erosional features that result in sedimentation or siltation of wetlands or waters. Grazing animals could also cause erosion of streams with steep banks. Finally, grazing animals could congregate near water sources and degrade these features through the accumulation of manure and urine. Impacts that result in the loss of functions and values of the wetland or water feature would be significant. Implementation of Mitigation Measure BIO-5 would reduce the VMP's potential for impacts to wetlands or waters from grazing by requiring monitoring of livestock to ensure over-grazing does not occur, generally excluding livestock from riparian areas, completely excluding livestock from streams with steep banks, and requiring contractors to provide alternative water sources to avoid livestock reliance on natural water sources. With implementation of Mitigation Measure BIO-5, impacts on federally protected and state-protected wetlands and waters from grazing would be less than significant.

Herbicides

Herbicide use is not proposed in wetlands, but it is proposed on eucalyptus, acacia, French broom, Scotch broom, pampas grass, and jubata grass. If used near wetlands or waters, herbicide could have non-targeted impacts through drift of spray-applied herbicide on wetlands or waters. Additionally, herbicides could be transported into wetlands or waters through runoff if applied immediately before rain events. Impacts that result in the loss of functions and values of the wetland or water feature would be significant. Implementation of Mitigation Measure HAZ-4, which avoids herbicide application during high-wind conditions to minimize the potential for drift into wetlands and waters, and Mitigation Measure HAZ-5, which prohibits the use of herbicide within 60 feet of streams, would collectively reduce the potential for herbicide

impacts on wetlands and streams. Implementation of Mitigation Measure HAZ-5 also requires herbicides to be applied by a licensed applicator and limits the use of herbicides and surfactants to only those that have been approved for by USEPA. Implementation of Mitigation Measure HYD/WQ-1 would limit vegetation treatment to periods without significant rainfall, herbicide use to the dry season, and work in waterbodies. With implementation of these mitigation measures, impacts on federally protected and state-protected wetlands and waters from herbicide would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure BIO-6: Trash Removal (revised from VMP BMP BIO-7)

See text in Impact BIO-2A above. Mitigation Measure BIO-15: Avoid Impacts on Federally Protected and State-Protected Wetlands and Waters, as Feasible.

To the extent feasible, VMP activities shall avoid federally protected and state-protected wetlands and waters. If VMP treatments are planned to occur within or immediately adjacent to wetlands or waters, the City and its contractors shall restore surface topography and drainage to pre-implementation conditions. Where appropriate, revegetation shall be implemented with site-adapted native species.

Mitigation Measure BIO-16: Provide Compensatory Mitigation for Unavoidable Impacts on Waters of the United States and the State.

Work within areas defined as waters of the U.S. that includes placement of fill will require a Clean Water Act (CWA) Section 404 permit and Section 401 Water Quality Certification. All work proposed in jurisdictional waters of the U.S. must be authorized under these permits, and the work must comply with the general and regional conditions of the permits. In areas where permanent loss of jurisdictional waters or wetlands would result, the City shall ensure that mitigation is implemented such that no net loss would occur for permanent impacts, consistent with the terms of the CWA Section 404 permit, the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (73 Code of Federal Regulations [CFR] 19594), and the Regional Compensatory Mitigation and Monitoring Guidelines for the South Pacific Division (U.S. Army Corps of Engineers [USACE] 2015, or current version). Compensatory mitigation may include purchase of credits from an approved mitigation bank or in-lieu fee program, or creation, reestablishment, or enhancement of wetlands in the VMP area or at an off-site location. At a minimum, mitigation shall be provided at a ratio that ensures no net loss of the functions and values associated with the affected resources.

Mitigation Measure GEO-1: Minimize Soil Disturbance (VMP BMP GEN-2)

See text in Section 3.6, “Geology, Soils, and Seismicity.”

Mitigation Measure GEO-2: Erosion and Sediment Control Measures (VMP BMP GEN-3)

See text in Section 3.6, "Geology, Soils, and Seismicity."

Mitigation Measure HAZ-1: Vehicle and Equipment Maintenance (VMP BMP GEN-8)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-2: Vehicle and Equipment Fueling (VMP BMP GEN-9)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-3: On-Site Hazardous Materials Management (VMP BMP GEN-5)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-6: Spill Prevention and Response (VMP BMP GEN-7)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-8: Existing Hazardous Materials (VMP BMP GEN-6)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HYD/WQ-1: Work Windows (VMP BMP GEN-1)

See text in Section 3.9, "Hydrology and Water Quality."

Conclusion

Implementation of the VMP could result in impacts to federally protected or state-protected wetlands or waters through sedimentation and siltation, equipment crossing of wetlands or waters, accumulation of manure and urine from grazing animals, and herbicide transport into wetlands or waters through aerial drift or runoff. Implementation of Mitigation Measures BIO-1, BIO-5, BIO-6, BIO-15, BIO-16, GEO-1, GEO-2, HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, HAZ-6, HAZ-8, and HYD/WQ-1 would avoid and minimize potential impacts during and following VMP activities. Therefore, impacts on federally protected and state-protected wetlands and waters would be **less than significant with mitigation.**

Impact BIO-5: Potential Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites (*Less than Significant with Mitigation*)

Impacts to non-special-status birds are discussed in Impact BIO-2B, and impacts to special-status bats and CEQA-relevant bats are discussed in Impact BIO-2C, above.

Impact BIO-5A: Wildlife Movement (*Less than Significant*)

The VMP area is located within the WUI, where recreational trails and nearby residential development represent most of the surrounding land uses. Portions of the VMP area, particularly large parks (such as Joaquin Miller Park and Knowland Park) and parks along streams (such as Dimond Canyon Park and Leona Heights Park) and associated riparian habitat provide important movement corridors for wildlife. Implementation of VMP treatments may cause wildlife to avoid these areas during treatment activities. However, VMP treatment activities would be relatively short in duration and would not result in permanent access restrictions or barriers to movement for wildlife. Wildlife would be able to move around VMP treatment projects during implementation. Finally, implementation of the VMP would not result in conversion of habitat types. For these reasons and in consideration of the abundant natural vegetation communities outside of areas undergoing active treatment at a given time, impacts on wildlife movement would be less than significant. Although impacts to wildlife movement would be less than significant, implementation of wildlife-friendly fencing during grazing treatments as required in Mitigation Measure BIO-5 would further reduce the impact of fencing on wildlife movement.

Conclusion

Wildlife movement corridors are present within the VMP area, but implementation of the VMP would not result in permanent barriers to movement and conversion of habitat types would not occur. Therefore, impacts on wildlife movement would be **less than significant** and no mitigation is required; however, implementation of Mitigation Measure BIO-5 would provide additional protection for natural vegetation communities from wildlife movement**.**

Impact BIO-5B: Potential Adverse Effects on Non-special-status Fish (*Less than Significant with Mitigation*)

Streams in the VMP area provide important habitat for fish, including breeding habitat. Resident rainbow trout are present in the VMP area in perennial streams in the Sausal Creek watershed, including Sausal, Palo Seco, and Shepherd Creeks (Laurel Marcus and Associates et al. 2010). Other non-special-status fish potentially present in streams within the VMP area include riffle sculpin (present in Sausal Creek) (Leidy et al. 2020).

All Treatments

VMP activities would generally occur in upland areas, which would reduce the potential for impacts to fish. VMP activities are generally anticipated to occur farther than 100 feet from streams, in accordance with the City's Creek Protection Ordinance. However, some VMP treatments would occur within 100 feet of streams, as described in **Table 3.4-4** in Impact BIO-2A. For VMP activities in creekside parcels, a Creek Protection Permit would be required. Removal of riparian vegetation could reduce shading of streams and increase water

temperatures, reducing habitat quality for fish. Implementation of Mitigation Measure BIO-1 would reduce impacts on fish by requiring staff training. As described in Impact BIO-3A, implementation of Mitigation Measure BIO-13, which requires the development and implementation of a plan to replace riparian resources, would reduce the potential for impacts to riparian vegetation. With implementation of these mitigation measures, impacts on fish from VMP activities would be less than significant.

Mechanical Treatments

As described in Impact BIO-4 and Section 3.9, "Hydrology and Water Quality," VMP treatments have the potential to loosen and disturb soils. Without adequate protection measures in place, such activities could lead to impacts on fish due to erosion, sedimentation, and siltation. Leaks and spills associated with the operation and maintenance of motorized equipment would present another impact to fish habitat. It is possible that heavy equipment may need to cross stream channels to access treatment areas, which could cause temporary or permanent impacts to fish habitat. Impacts that result in death of native fish at a level that jeopardizes the ability of the local population to recover would be significant. For the purposes of this analysis, this significance level is defined as five individual native fish per lake, reservoir, stream, or waterbody per day, based on CDFW bag (e.g., "take") limits in western Alameda County.

Implementation of Mitigation Measures BIO-15 and BIO-16 would minimize impacts to wetlands and waters by avoiding these features and providing compensatory mitigation for unavoidable impacts. Implementation of Mitigation Measure GEO-1 would limit ground disturbance to the minimum soil footprint necessary to meet objectives, require leaving stumps intact, and minimize heavy equipment use on steep slopes. Implementation of Mitigation Measure GEO-2 would require the use of erosion and sediment controls. Implementation of Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-5, HAZ-6, and HAZ-8 would ensure proper handling and use of herbicides and other hazardous materials, and maintaining vehicles to prevent spills and leaks. Implementation of Mitigation Measure HYD/WQ-1 would limit vegetation treatment to periods without significant rainfall, limit herbicide use to the dry season, and limit work in waterbodies. With implementation of these mitigation measures, impacts on non-special-status fish from mechanical treatments would be less than significant.

Hand Labor Treatments

Hand labor treatments are not anticipated to result in significant impacts on fish, because these activities would not be conducted in aquatic habitat.

Grazing

VMP grazing treatments are not anticipated to result in direct injury or mortality of fish. If grazing were to occur within streams or riparian habitats, temporary impacts to fish habitat could occur. Grazing could increase sedimentation into streams, temporarily reducing habitat quality for fish. Over several years, grazing could cumulatively result in stream bank failure, erosion, and successive sedimentation, all of which could permanently alter suitable fish habitat. Implementation of Mitigation Measure BIO-5 would reduce these impacts by generally excluding livestock from riparian areas, completely excluding livestock from streams with steep banks, requiring grazing lessees or contractors to provide alternative (i.e., other than natural) water sources for livestock, and monitoring to prevent over-grazing. With implementation of

this mitigation measure, impacts on non-special-status fish from grazing would be less than significant.

Herbicides

If used near streams, herbicides may enter these habitats through drift of spray-applied herbicide wetlands or waters. Additionally, herbicides could be transported into streams or other waterbodies through runoff if applied immediately before rain events. If herbicides were to enter streams or other aquatic habitat containing fish, fish could be killed or harmed. This would be a significant impact. Implementation of Mitigation Measure HAZ-4, which requires measures to avoid or minimize adverse effects on non-target organisms during herbicide application, and Mitigation Measure HAZ-5, which requires herbicides to be applied by a licensed applicator, would collectively avoid herbicide use during windy conditions and other site-specific conditions that would exacerbate herbicide drift and minimize the potential for drift into fish habitat. Implementation of Mitigation Measure HAZ-5, which also prohibits the use of herbicide within 60 feet of streams, would reduce the potential for herbicide impacts on fish. With implementation of these mitigation measures, impacts on non-special-status fish from herbicides would be less than significant.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure BIO-13: Avoid Riparian Habitat and Develop and Implement a Plan to Replace Affected Riparian Habitat

See text in Impact BIO-3A above.

Mitigation Measure BIO-15: Avoid Impacts on Federally Protected Wetlands and Waters, as Feasible.

See text in Impact BIO-4 above.

Mitigation Measure BIO-16: Provide Compensatory Mitigation for Unavoidable Impacts on Waters of the United States and the State

See text in Impact BIO-4 above.

Mitigation Measure GEO-1: Minimize Soil Disturbance (VMP BMP GEN-2)

See text in Section 3.6, “Geology, Soils, and Seismicity.”

Mitigation Measure GEO-2: Erosion and Sediment Control Measures (VMP BMP GEN-3)

See text in Section 3.6, “Geology, Soils, and Seismicity.”

Mitigation Measure HAZ-1: Vehicle and Equipment Maintenance (VMP BMP GEN-8)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-2: Vehicle and Equipment Fueling (VMP BMP GEN-9)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-3: On-Site Hazardous Materials Management (VMP BMP GEN-5)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-6: Spill Prevention and Response (VMP BMP GEN-7)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-8: Existing Hazardous Materials (VMP BMP GEN-6)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HYD/WQ-1: Work Windows (VMP BMP GEN-1)

See text in Section 3.9, "Hydrology and Water Quality."

Conclusion

Implementation of the VMP could result in impacts to fish through sedimentation and siltation, equipment crossing of wetlands or waters, accumulation of manure and urine from grazing animals, and herbicide transport into wetlands or waters through aerial drift or runoff. Implementation of Mitigation Measures BIO-1, BIO-5, BIO-13, BIO-15, BIO-16, GEO-1, GEO-2, HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, HAZ-6, HAZ-8, and HYD/WQ-1 would avoid and minimize potential impacts on non-special-status fish species by generally avoiding grazing in riparian habitat and restricting grazing from streams to prevent erosion and sedimentation, requiring the development of a plan to replace riparian resources, avoiding impacts to wetlands and waters and providing compensatory mitigation for unavoidable impacts, limiting ground disturbance, requiring use of erosion and sediment controls, ensuring proper handling and use of herbicides and other hazardous materials, along with appropriate vehicle maintenance to prevent spills and leaks, limiting vegetation treatment to periods without significant rainfall, limiting herbicide use to the dry season, and limiting work in waterbodies . Therefore, impacts on non-special-status fish species would be **less than significant with mitigation.**

Impact BIO-6: Conflict with Local Policies or Ordinances Protecting Biological Resources (*Less than Significant with Mitigation*)

Local policies and ordinances protecting biological resources include the City of Oakland Protected Trees Ordinance, Hazardous Trees Ordinance, Creek Protection Ordinance, the City of Oakland General Plan, and Resolution 79133.

Resolution 79133 was adopted in 2005 and directed City staff to evaluate the selective use of glyphosate and triclopyr to manage vegetation for wildfire hazard reduction purposes.

All Treatments

The City would obtain a tree removal permit where necessary to remove protected trees. As described in Section 0.0.208622944, protected trees are defined as California or coast live oak trees measuring 4 inches dbh (single or aggregate of multiple trunks belonging to the same tree) or larger, and any other tree with a single trunk or aggregate of multiple trunks (except eucalyptus and Monterey pine) measuring 9 inches dbh or larger on any property. Protected trees also include Monterey pine trees where they occur on City property where more than five Monterey pine trees per acre are proposed to be removed. No tree removal permit is required for corrective actions performed under the Hazardous Tree Ordinance.

Eucalyptus trees are not considered protected trees under the Protected Trees Ordinance and are not discussed further. In the Draft VMP (provided in Appendix A of this DEIR), treatments in all forested vegetation types prioritize the retention of healthy trees. In the closed-cone pine-cypress habitat type, Monterey pine and Monterey cypress trees are dominant. Proposed VMP treatments in this habitat type include thinning mature pine or cypress stands to reach an average 30-foot horizontal spacing between trunks. This treatment approach would result in a post-treatment stand density of approximately 48 trees per acre. Treatments prioritize retention of healthy trees and removal of all single-stem pines and cypress with trunk diameters measuring less than 8 inches (see Appendix A for more details). Prioritized retention of healthy trees and removal of smaller Monterey pine and cypress trees would reduce the impacts on these protected trees.

In acacia-dominated stands, proposed VMP treatments would thin these stands to reach an average 35-foot horizontal spacing between trunks. This treatment approach would result in a post-treatment stand density of approximately 36 trees per acre. As described in the VMP, treatments in eucalyptus, closed-cone pine-cypress, Urban (Acacia), and Urban (Mixed Tree Stand) tree-dominated communities would prioritize retention of City-designated protected lower fire risk trees existing in these stands and incorporate them into the tree spacing standards identified above, which would also minimize impacts to protected trees.

In oak woodland and redwood habitat types, proposed tree removal activities would focus on the removal of individual eucalyptus, pine, or acacia trees from within these habitats. In redwood habitats, young redwood crown sprouts and sapling growth would be thinned, but three sprouts (trunks) would be retained per stump. Thinning of saplings and crown sprouts instead of mature trees would minimize impacts on protected size classes of redwoods.

Annual acreage of tree thinning is anticipated to be no more than approximately 25 acres per year across the 10-year VMP timeline. Implementation of Mitigation Measure BIO-13 would

replace trees removed in riparian areas. Therefore, impacts related to conflict with the Protected Trees or Hazardous Trees Ordinances would be less than significant with mitigation.

Vegetation management activities on any creekside property (described in more detail in Impact BIO-3a) would require a Creek Protection Permit. The City would comply with the Creek Protection Ordinance by obtaining a permit for all VMP activities that are planned within creekside properties and complying with all applicable permit conditions. Therefore, impacts related to conflict with the Creek Protection Ordinance would be less than significant. Additionally, implementation of Mitigation Measure BIO-13 would further reduce impacts by replacing trees removed in riparian areas.

The VMP would comply with the City's General Plan policies as described below. Compliance with General Plan Policy OS-1.1: Wildland Parks would be achieved by managing vegetation in City parks within the VMP area to reduce wildfire hazard while protecting natural resources within these parks. Compliance with General Plan Policy CO-6.1: Creek Management would be achieved by complying with the Creek Protection Ordinance. The VMP would comply with Objective CO-7: Plant Resources by not resulting in vegetation type conversion, removing vegetation based on fire hazard characteristics, and maintaining the wooded character of areas that are forested under baseline conditions. As described in Impact BIO-4, impacts to wetlands could occur under the VMP. Implementation of the mitigation measures described in Impact BIO-4 and listed below would avoid or minimize impacts to wetlands, in compliance with Objective CO-8: Wetlands. Implementation of Mitigation Measure GEO-2 would require the use of erosion and sediment controls. Implementation of Mitigation Measures, HAZ-1, HAZ-2, HAZ-3, HAZ-5, HAZ-6, and HAZ-8 would ensure proper handling and use of herbicides and other hazardous materials, and maintaining vehicles to prevent spills and leaks. Implementation of Mitigation Measures BIO-15 and BIO-16 would minimize impacts to wetlands and waters by avoiding impacts to these features and providing compensatory mitigation for unavoidable impacts.

Impact BIO-1 describes the potential for impacts to rare, endangered, or threatened species. Implementation of the mitigation measures described in Impact BIO-1 would minimize the potential for impacts, complying with Objective CO-9: Rare, Endangered, or Threatened Species. Implementation of Mitigation Measures BIO-1 through BIO-5, GEO-1, HAZ-4, and HAZ-5 would reduce potential impacts through staff training, pre-implementation surveys for listed plants, implementation of avoidance buffers, compensatory mitigation if impacts are above thresholds, avoidance of Presidio clarkia sensitive time periods, seeding with native plant species, exclusion of grazing animals from special-status plant populations, and minimizing potential for herbicide to inadvertently be applied to special-status plants.

Implementation of the following measures would also be protective of non-special-status wildlife, in accordance with Objective CO-11: Wildlife. Implementation of Mitigation Measures HYD/WQ-1, HAZ-4, HAZ-5, GEO-1, GEO-2, BIO-5 through BIO-9 would prevent herbicide use in riparian habitat and contact with aquatic habitat, generally avoid grazing in riparian habitat and restrict grazing from streams to prevent erosion and sedimentation, prevent increased predation pressure on both special-status and non-special-status species through proper trash storage and removal, minimize the footprint of disturbance, implement erosion and sediment controls to prevent impacts to aquatic habitat, restrict herbicide use near suitable California red-legged frog and western pond turtle aquatic habitat, require pre-activity surveys and implement

necessary avoidance measures to prevent impacts on California red-legged frog and western pond turtle, and require pre-activity surveys and implement avoidance measures to prevent impacts on Alameda whipsnake. Implementation of Mitigation Measure BIO-10 would reduce the potential for significant impacts on special-status and non-special-status birds by conducting pre-activity nesting bird surveys and establishing species-appropriate avoidance buffers where active bird nests are found. Implementation of Mitigation Measure BIO-11 would reduce the potential for impacts on special-status bats through evaluation and identification of trees with high-quality bat habitat by a qualified biologist, avoidance of maternity roosts through resigning/rescheduling work or no-disturbance buffers, and exclusion of bats from occupied non-breeding roosts during periods shall minimize impacts on bats present. Implementation of Mitigation Measure BIO-12 would minimize these impacts on woodrats by avoiding houses and maintaining an intact escape corridor, where feasible; and hand-dismantling of houses by a qualified biologist if avoidance is not feasible. Implementation of Mitigation Measure HYD/WQ-1 would reduce impacts on bats by restricting work to daylight hours (except in case of an emergency), when bats are not active.

As is the stated intent of the VMP, the City would manage vegetation so that the risk of catastrophic wildfire is minimized, in accordance with Objective CO-10: Vegetation Management.

The North Oakland Hills Area Specific Plan (City of Oakland 1986) includes vegetation management prescriptions for new development within the portion of the VMP area covered by the specific plan. Implementation of the VMP would not be considered development of VMP parcels. However, VMP treatments are generally consistent with vegetation management prescriptions in the specific plan.

With implementation of the identified mitigation measures, impacts related to conflicts with local policies or ordinances protecting biological resources would be less than significant.

Herbicides

Consistent with Resolution 79133, this EIR constitutes an evaluation of limited herbicide use on City-owned properties designated as a high wildfire hazard for the purposes of managing vegetation for wildfire risk reduction. Implementation of herbicide treatments under the VMP would not conflict with Resolution 79133; therefore, the impact of herbicides would be less than significant and no mitigation is required.

Mitigation Measures

Mitigation Measure BIO-1: Provide Biologist Review and Worker Training

See text in Impact BIO-1A above.

Mitigation Measure BIO-2a: Avoid Special-Status Plant Species (revised from VMP BMP BIO-3)

See text in Impact BIO-1A above.

Mitigation Measure BIO-2b: Provide Compensatory Mitigation for Special-Status Plant Species

See text in Impact BIO-1A above.

Mitigation Measure BIO-3: Seeding with Native Species (VMP BMP BIO-10)

See text in Impact BIO-1A above.

Mitigation Measure BIO-4: Avoid Presidio Clarkia Sensitive Time Periods

See text in Impact BIO-1A above.

Mitigation Measure BIO-5: Grazing (revised from VMP BMP BIO-6)

See text in Impact BIO-1A above.

Mitigation Measure BIO-6: Trash Removal (revised from VMP BMP BIO-7)

See text in Impact BIO-2A above.

Mitigation Measure BIO-7: Protection of Alameda Whipsnake (VMP BMP BIO-5)

See text in Impact BIO-2A above.

Mitigation Measure BIO-8: Protection of California Red-legged Frogs and Western Pond Turtles (revised from VMP BMP BIO-4)

See text in Impact BIO-2A above.

Mitigation Measure BIO-9: Protection of California Red-legged Frogs from Herbicide Use (VMP BMP BIO-2)

See text in Impact BIO-2A above.

Mitigation Measure BIO-10: Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures (revised from VMP BMP BIO-1)

See text in Impact BIO-2B above.

Mitigation Measure BIO-11: Protection of Bat Colonies (VMP BMP BIO-8)

See text in Impact BIO-2C above.

Mitigation Measure BIO-12: Protection of Dusky-footed Woodrats (VMP BMP BIO-9)

See text in Impact BIO-2C above.

Mitigation Measure BIO-13: Avoid Riparian Habitat and Develop and Implement a Plan to Replace Affected Riparian Habitat.

See text in Impact BIO-3A above.

Mitigation Measure BIO-15: Avoid Impacts on Federally Protected Wetlands and Waters, as Feasible.

See text in Impact BIO-4 above.

Mitigation Measure BIO-16: Provide Compensatory Mitigation for Unavoidable Impacts on Waters of the United States and the State.

See text in Impact BIO-4 above.

Mitigation Measure GEO-1: Minimize Soil Disturbance (VMP BMP GEN-2)

See text in Section 3.6, "Geology, Soils, and Seismicity."

Mitigation Measure GEO-2: Erosion and Sediment Control Measures (VMP BMP GEN-3)

See text in Section 3.6, "Geology, Soils, and Seismicity"

Mitigation Measure HAZ-1: Vehicle and Equipment Maintenance (VMP BMP GEN-8)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-2: Vehicle and Equipment Fueling (VMP BMP GEN-9)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-3: On-Site Hazardous Materials Management (VMP BMP GEN-5)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-4: Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-5: Standard Herbicide Use Requirements (VMP BMP VEG-2)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-6: Spill Prevention and Response (VMP BMP GEN-7)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HAZ-8: Existing Hazardous Materials (VMP BMP GEN-6)

See text in Section 3.8, "Hazards and Hazardous Materials."

Mitigation Measure HYD/WQ-1: Work Windows (VMP BMP GEN-1)

See text in Section 3.9, "Hydrology and Water Quality."

Conclusion

The City would comply with applicable tree protection, creek protection, and general plan policies to protect biological resources. Limited herbicide use as proposed in the VMP would be consistent with local plans and policies as well as with Resolution 79133. With the implementation of the mitigation measures identified above, impacts related to conflicts with local policies or ordinances protecting biological resources would be **less than significant with mitigation**.

Impact BIO-7: Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Conservation Plan (*No Impact*)

The VMP area is located within the Pacific Gas and Electric Company (PG&E) Bay Area Operations and Maintenance Habitat Conservation Plan (HCP) boundary (82 Federal Register 15063). Species covered under this HCP that could also occur in the VMP area are the California red-legged frog and Alameda whipsnake. The VMP is not a PG&E-covered activity under the HCP and would not conflict with the HCP's conservation strategy or provisions. The VMP area is not covered within any other HCPs; therefore, the VMP would not conflict with provisions adopted by an HCP, NCCP, or other approved local, regional, or state habitat conservation plan (CDFW 2019b, USFWS 2019).

Conclusion

There would be **no impact**.

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Garber Park

Grizzly Peak Open Space

North Oakland Sports Field

Skyline Boulevard

Habitat Types

- Annual Grassland
- Coast Oak Woodland
- Closed-cone Pine-Cypress
- Coastal Scrub
- Eucalyptus
- Freshwater Emergent Wetland
- Urban
- Valley/foothill Riparian

N

0 0.25 0.5

Miles

Figure 3.4-1
Habitats in the VMP Area
(sheet 1 of 5)

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Shepherd Canyon

Skyline Boulevard

13

Dimond Canyon Park

Joaquin Miller Park

Habitat Types

- Annual Grassland
- Coast Oak Woodland
- Closed-cone Pine-Cypress
- Coastal Scrub
- Eucalyptus
- Freshwater Emergent Wetland
- Redwood
- Urban
- Valley/foothill Riparian

N

0 0.25 0.5

Miles

Imagery and Basemap Sources: Google Earth Imagery Date 10/30/15 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Figure 3.4-1
Habitats in the VMP Area
(sheet 2 of 5)

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Skyline Boulevard

Leona Heights Park

13

580

Habitat Types

- Annual Grassland
- Coast Oak Woodland
- Closed-cone Pine-Cypress
- Coastal Scrub
- Eucalyptus
- Redwood
- Urban

N

0 0.25 0.5

Miles

Imagery and Basemap Sources: Google Earth Imagery Date: 11/30/15 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Figure 3.4-9
Habitats in the VMP Area
(sheet 3 of 5)

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Habitat Types

- Annual Grassland
- Coast Oak Woodland
- Closed-cone Pine-Cypress
- Coastal Scrub
- Eucalyptus
- Freshwater Emergent Wetland
- Mixed Chaparral
- Perennial Grassland
- Redwood
- Urban

N

0 0.25 0.5

Miles

Figure 3.4-1
Habitats in the VMP Area
(sheet 4 of 5)

Vegetation Management Plan
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Imagery and Basemap Sources: Google Earth Imagery Date: 10/2016 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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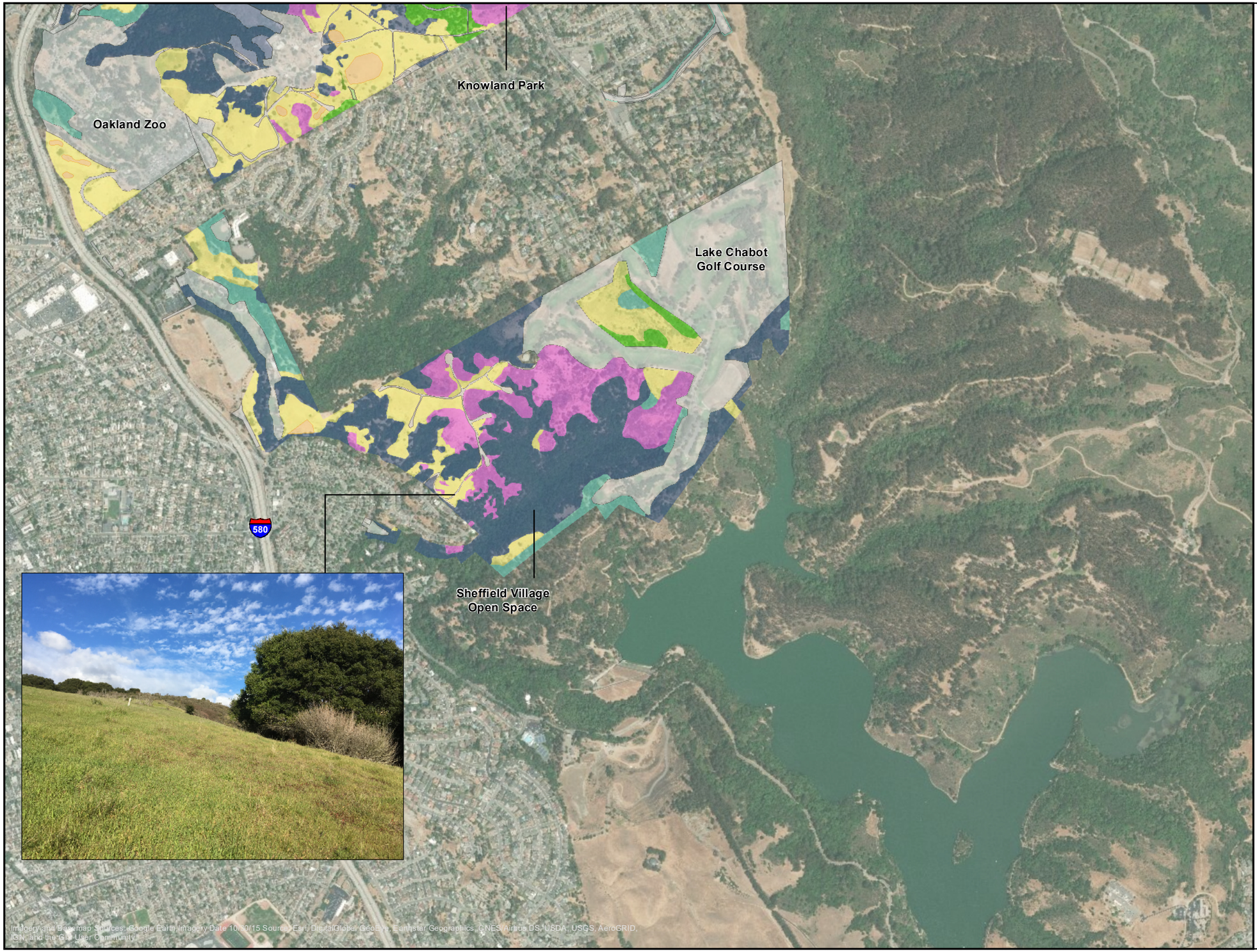

Habitat Types

- Annual Grassland
- Coast Oak Woodland
- Closed-cone Pine-Cypress
- Coastal Scrub
- Eucalyptus
- Freshwater Emergent Wetland
- Mixed Chaparral
- Perennial Grassland
- Redwood
- Urban

N

0 0.25 0.5

Miles

Figure 3.4-1
Habitats in the VMP Area
(sheet 5 of 5)

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Garber Park

Harwood (Claremont) Creek

GAR-1

GAR-2

GAR-3

Grizzly Peak Open Space

GPO-1

GPO-2

GPO-3

GPO-4

North Oakland Sports Field

NOR-1

NOR-2

NOR-3

TRO-1

Skyline Boulevard

Lake Temescal

Temescal Creek

MEDIAN

Priority 1 Roadside Treatment Areas

VMP Roadsides

VMP Parcels

VMP Creekside Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Creek 100-foot buffer

Western Alameda County Creeks

Creek

Engineered channel

Underground culvert or storm drain

National Hydrography Database (NHD)

Lake or Pond

N

0 0.25 0.5

Miles

Figure 3.4-2.
Lakes and Streams in the VMP Area
(sheet 1 of 6)

Vegetation Management Plan
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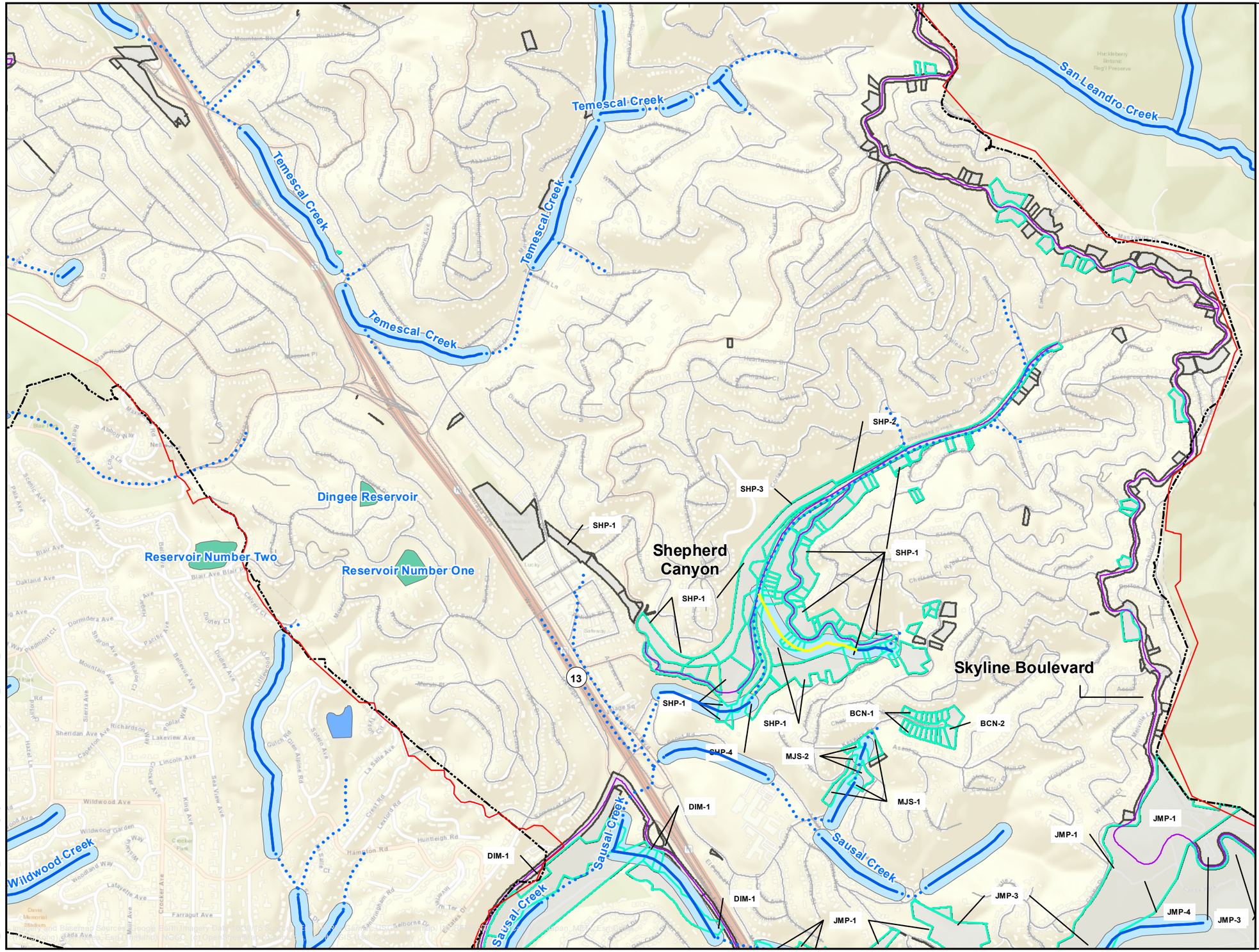

Priority 1 Roadside Treatment Areas

VMP Roadsides

VMP Parcels

VMP Creekside Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Creek 100-foot buffer

Western Alameda County Creeks

Creek

Engineered channel

Underground culvert or storm drain

National Hydrography Database (NHD)

Lake or Pond

Reservoir

N

0 0.25 0.5

Miles

Figure 3.4-2.
Lakes and Streams in the VMP Area
(sheet 2 of 6)

Vegetation Management Plan
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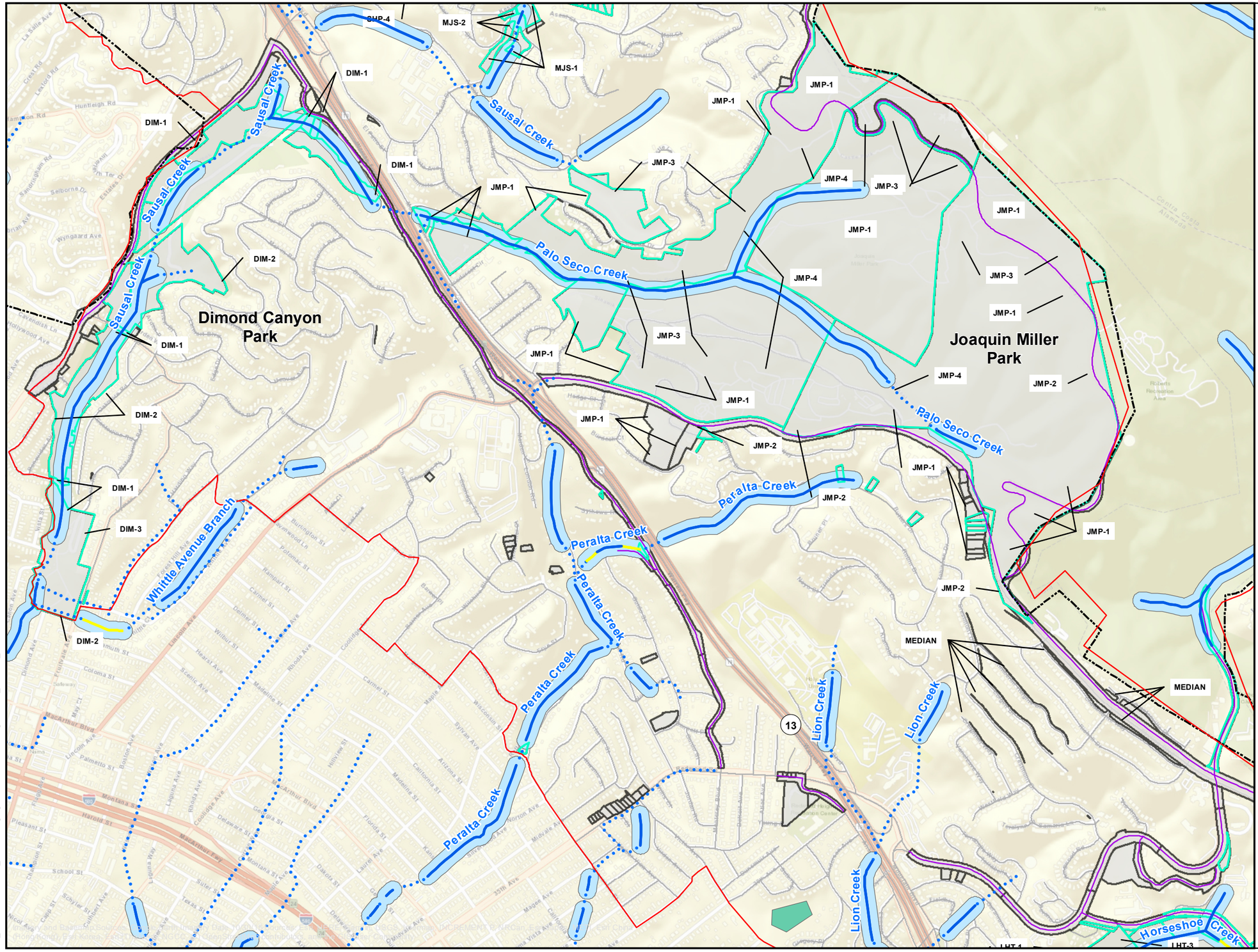

- Priority 1 Roadside Treatment Areas
- VMP Roadsides
- VMP Parcels
- VMP Creekside Parcels
- Very High Fire Hazard Severity Zone
- Oakland City Limits
- Creek 100-foot buffer

Western Alameda County Creeks

- Creek
- Engineered channel
- Underground culvert or storm drain

National Hydrography Database (NHD)

- Lake or Pond
- Reservoir

N

0 0.25 0.5

Miles

Figure 3.4-3.
Lakes and Streams in the VMP Area
(sheet 3 of 6)

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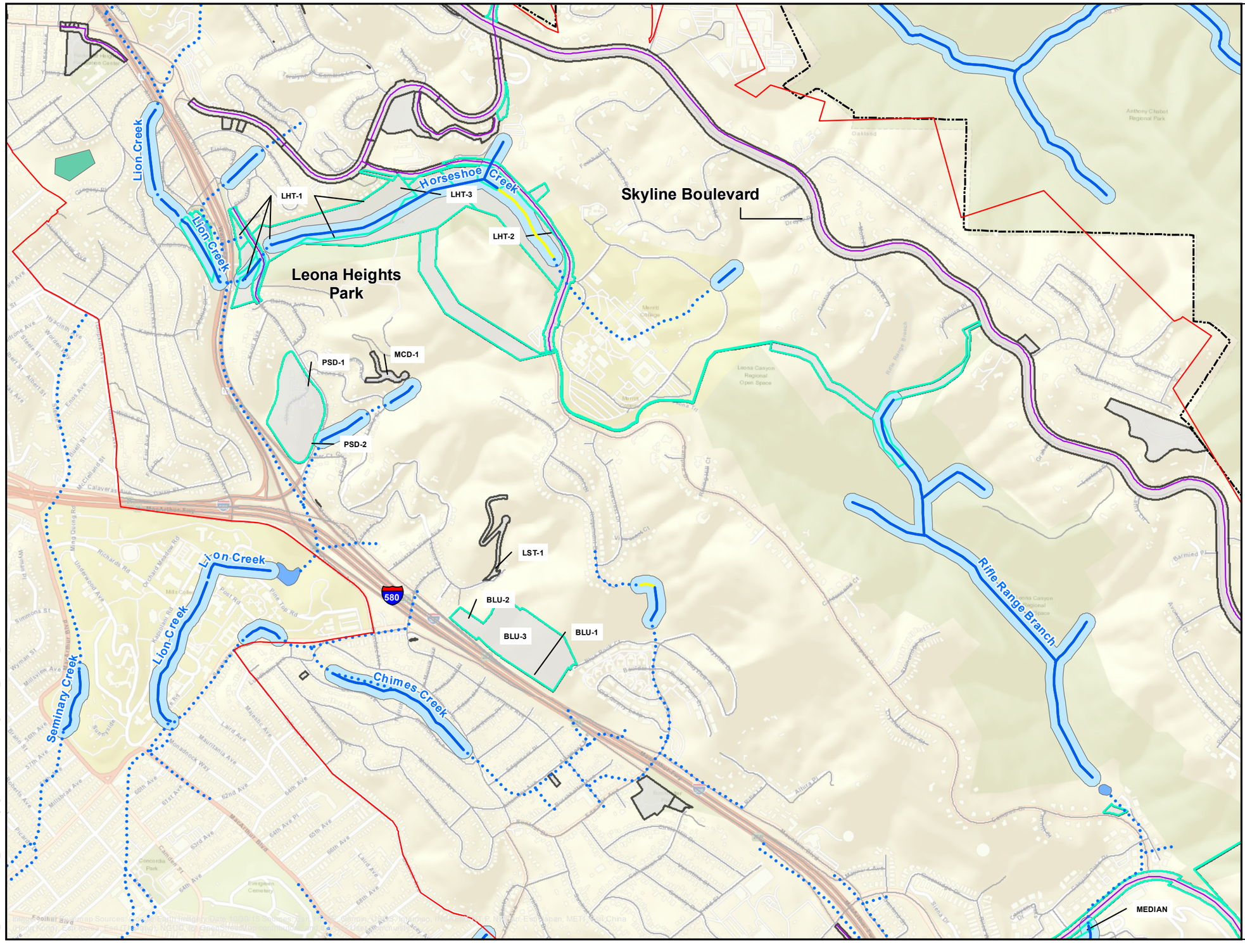

Priority 1 Roadside Treatment Areas

VMP Roadsides

VMP Parcels

VMP Creekside Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Creek 100-foot buffer

Western Alameda County Creeks

Creek

Engineered channel

Underground culvert or storm drain

National Hydrography Database (NHD)

Lake or Pond

Reservoir

N

0 0.25 0.5

Miles

Figure 3.4-4.
Lakes and Streams in the VMP Area
(sheet 4 of 6)

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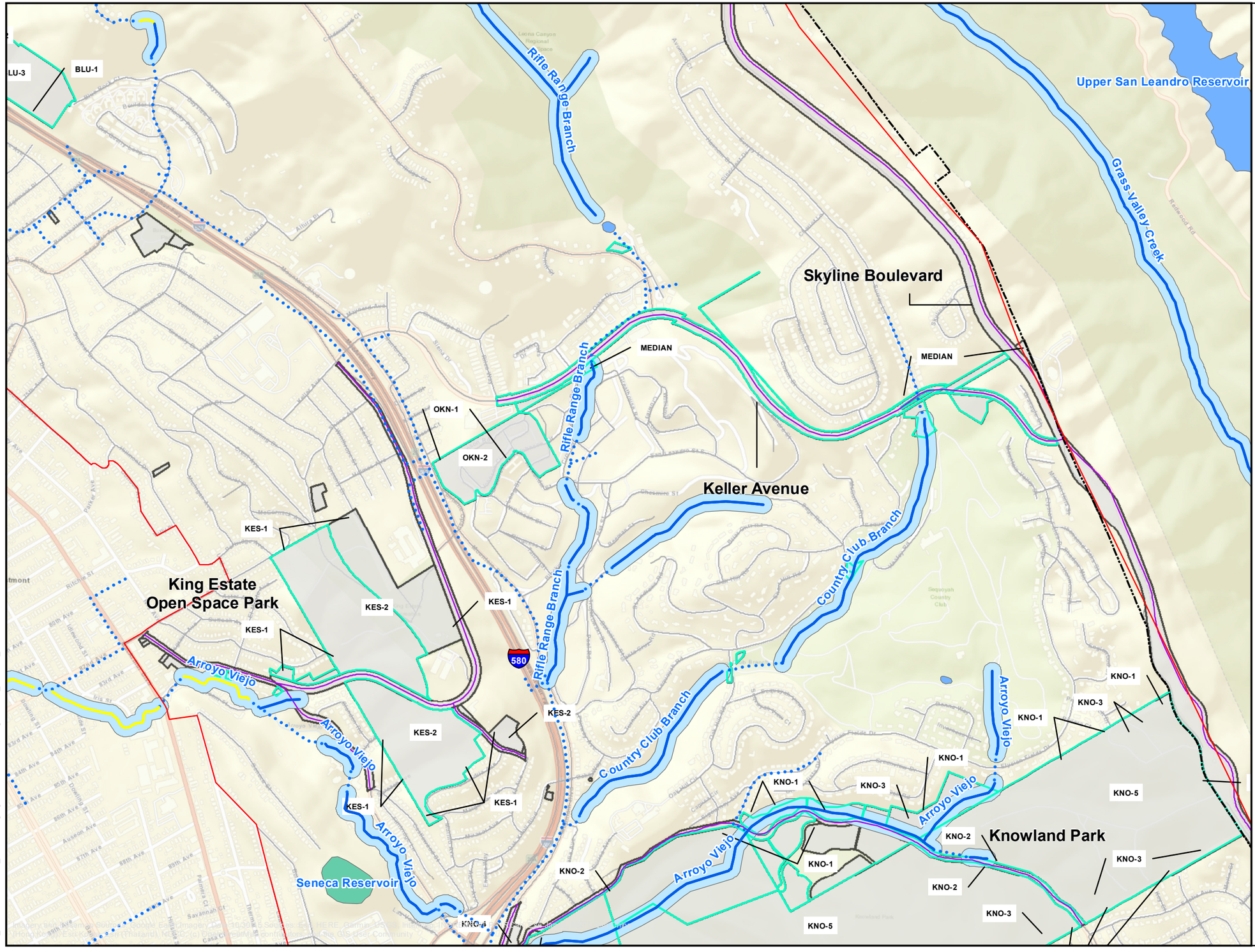

Priority 1 Roadside Treatment Areas

VMP Roadsides

VMP Parcels

VMP Creekside Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Creek 100-foot buffer

Western Alameda County Creeks

Creek

Engineered channel

Underground culvert or storm drain

National Hydrography Database (NHD)

Lake or Pond

Reservoir

N

0 0.25 0.5

Miles

Figure 3.4-5.
Lakes and Streams in the VMP Area
(sheet 5 of 6)

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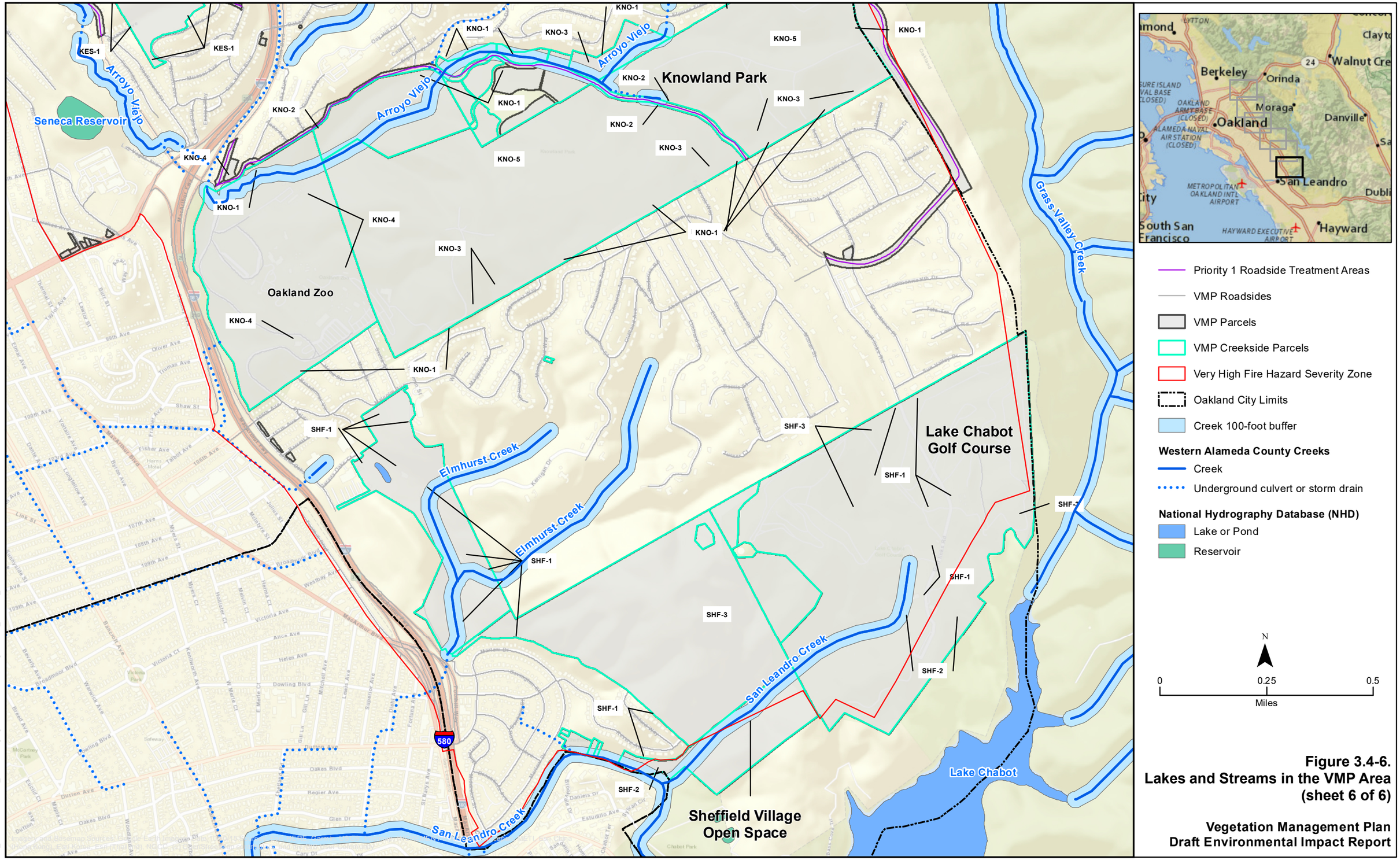

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Figure 3.4-6.
Lakes and Streams in the VMP Area (sheet 6 of 6)

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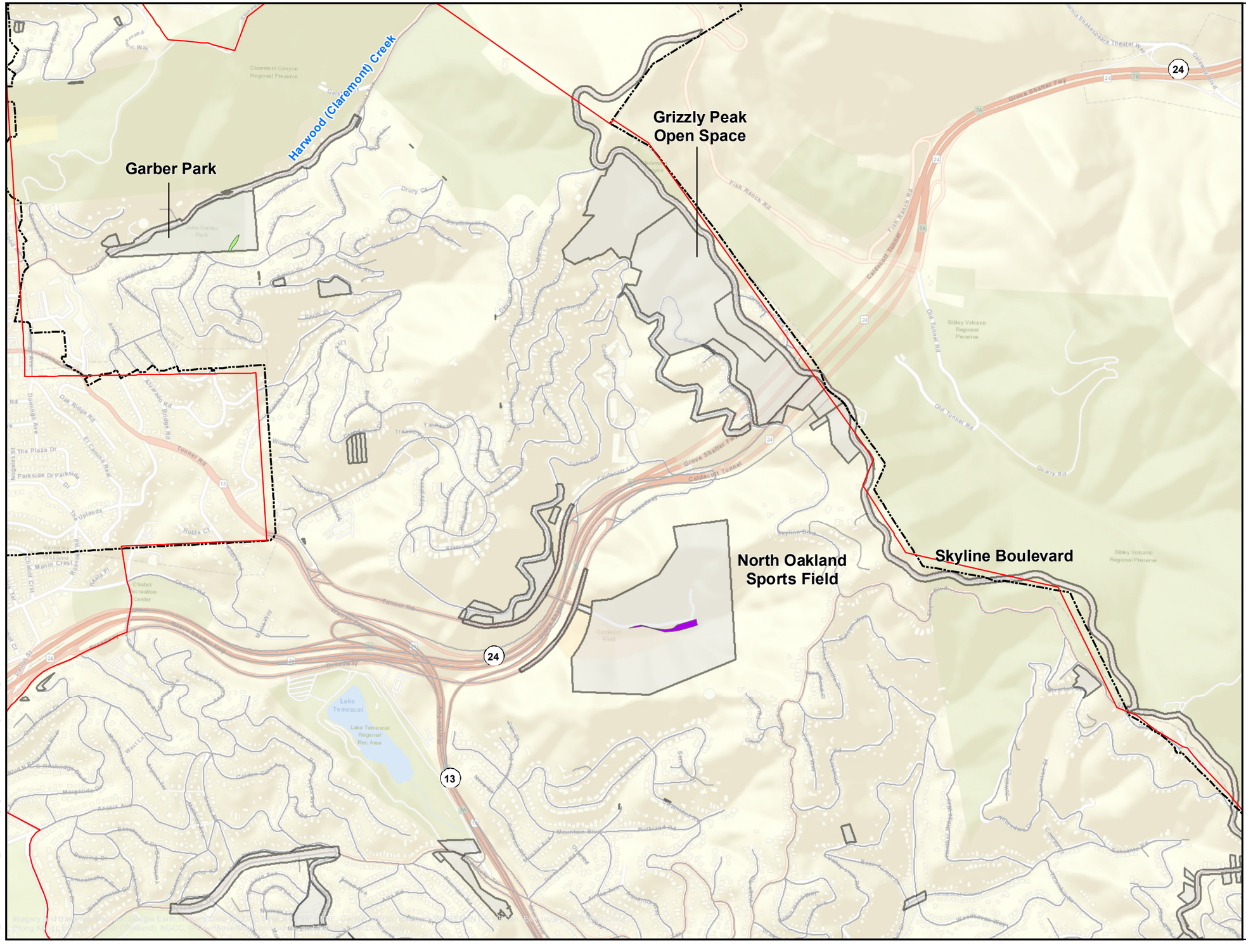

VMP Roadsides

VMP Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Sensitive Natural Communities

Freshwater Emergent Wetland

Valley/foothill Riparian

N

0 0.25 0.5

Miles

Figure 3.4-3.
Sensitive Natural Communities in the VMP Area (sheet 1 of 6)

Vegetation Management Plan
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Figure 3.4-3
Sensitive Natural Communities in the VMP Area (sheet 2 of 6)

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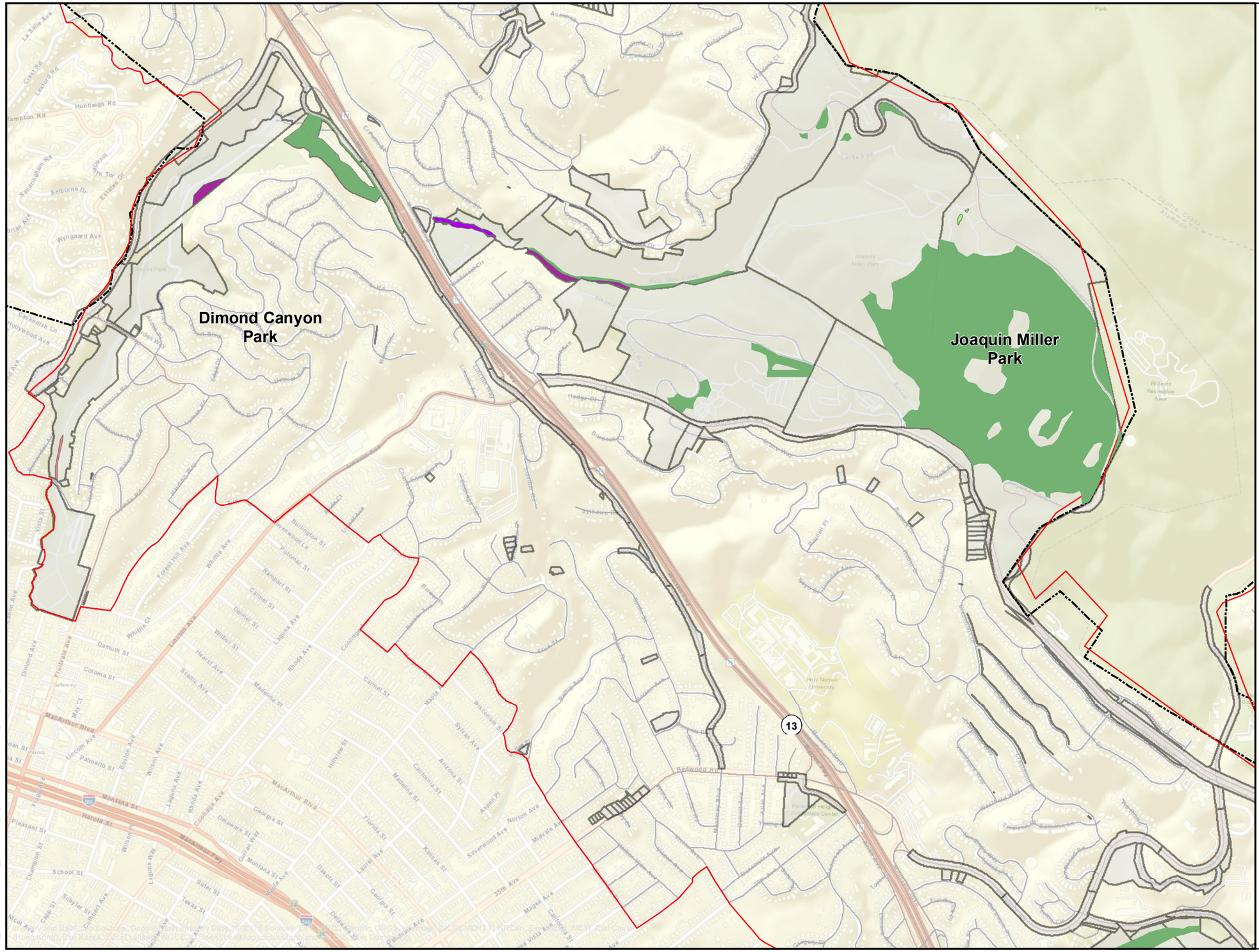

VMP Roadsides

VMP Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Sensitive Natural Communities

- California Bay Forest
- Freshwater Emergent Wetland
- Redwood Forest
- Valley/foothill Riparian
- Red Alder Forest

N

0 0.25 0.5

Miles

Figure 3.4-3
Sensitive Natural Communities in the VMP Area (sheet 3 of 6)

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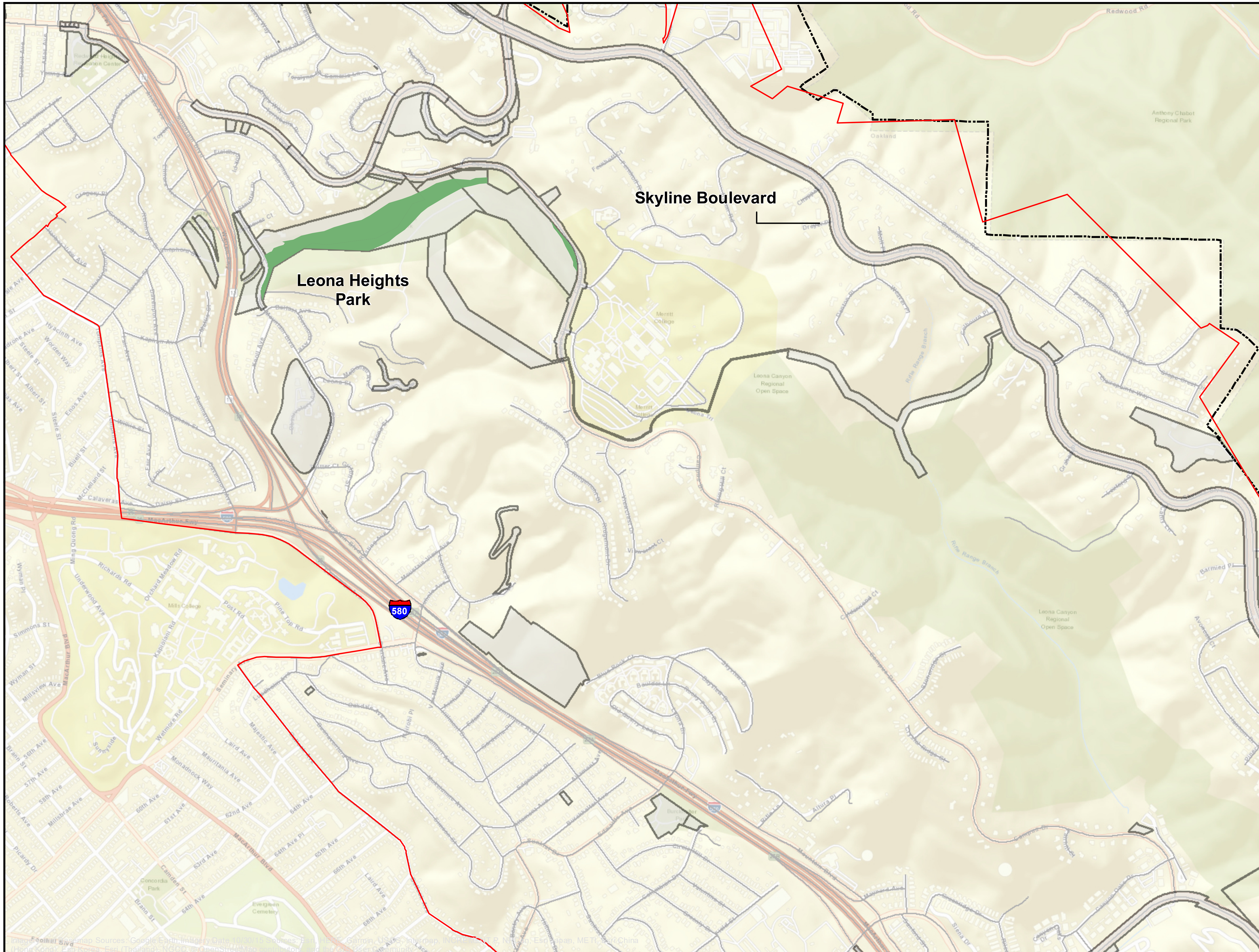

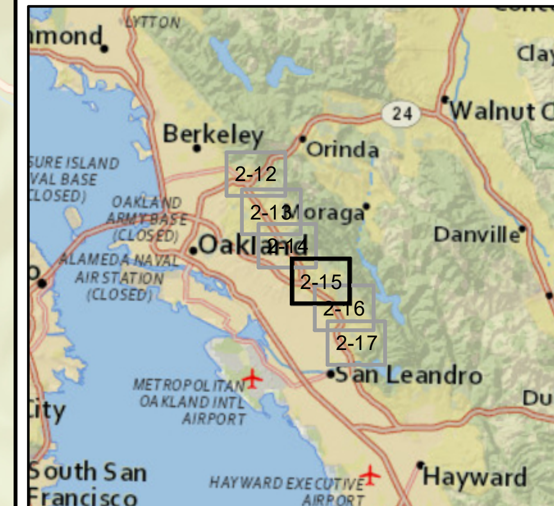

VMP Roadsides

VMP Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Sensitive Natural Communities

Redwood Forest

N

0 0.25 0.5

Miles

Figure 3.4-3
Sensitive Natural Communities in the VMP Area (sheet 4 of 6)

Vegetation Management Plan
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VMP Roadsides

VMP Parcels

Very High Fire Hazard Severity Zone

Oakland City Limits

Sensitive Natural Communities

California Bay Forest

Brittle Leaf - Wooly Leaf Manzanita Chaparral

Needle grass - Melic Grass Grassland

Bush Monkeyflower Scrub

N

0 0.25 0.5

Miles

Figure 3.4-3
Sensitive Natural Communities in the VMP Area (sheet 5 of 6)

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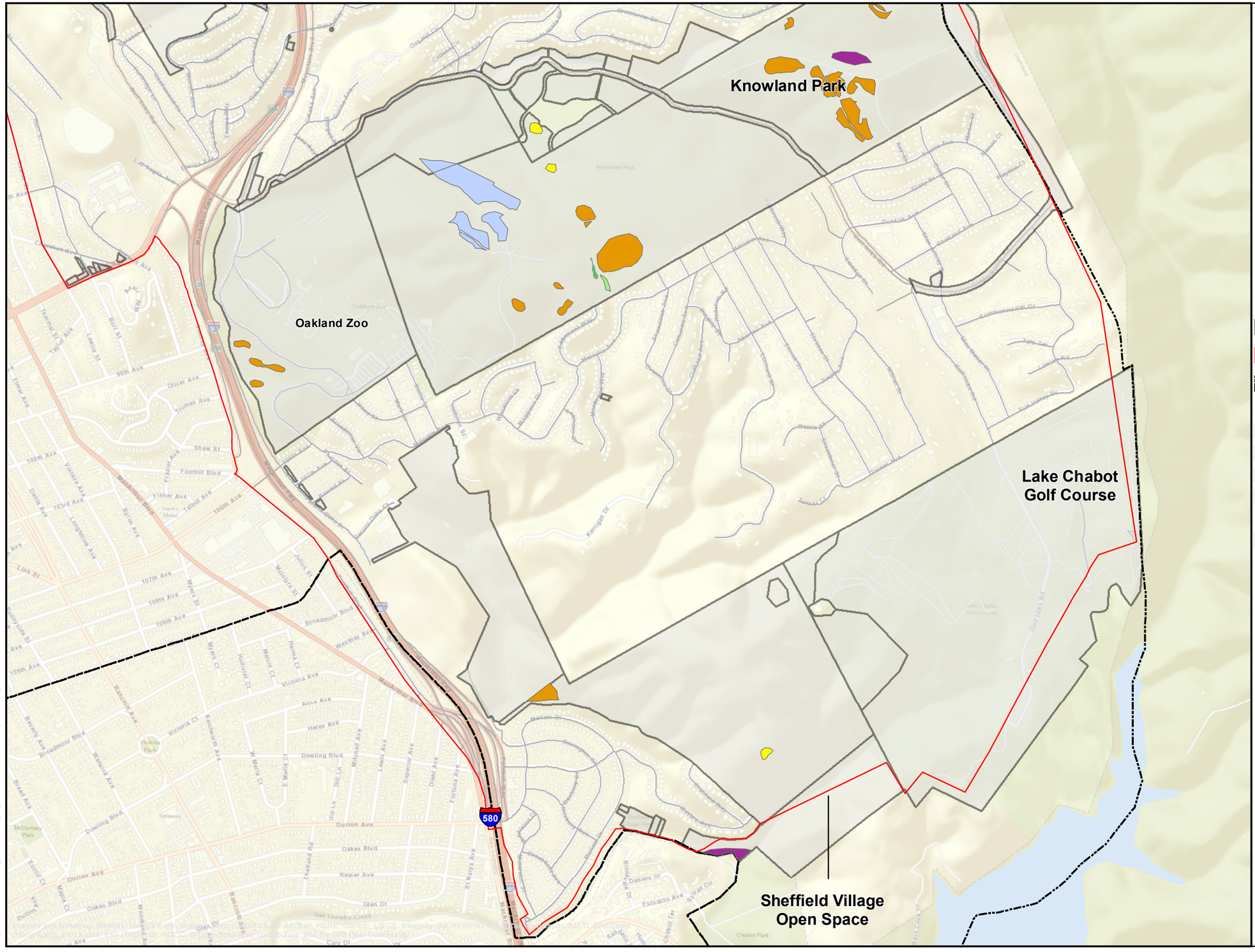

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Figure 3.4-3
Sensitive Natural Communities in the VMP Area (sheet 6 of 6)

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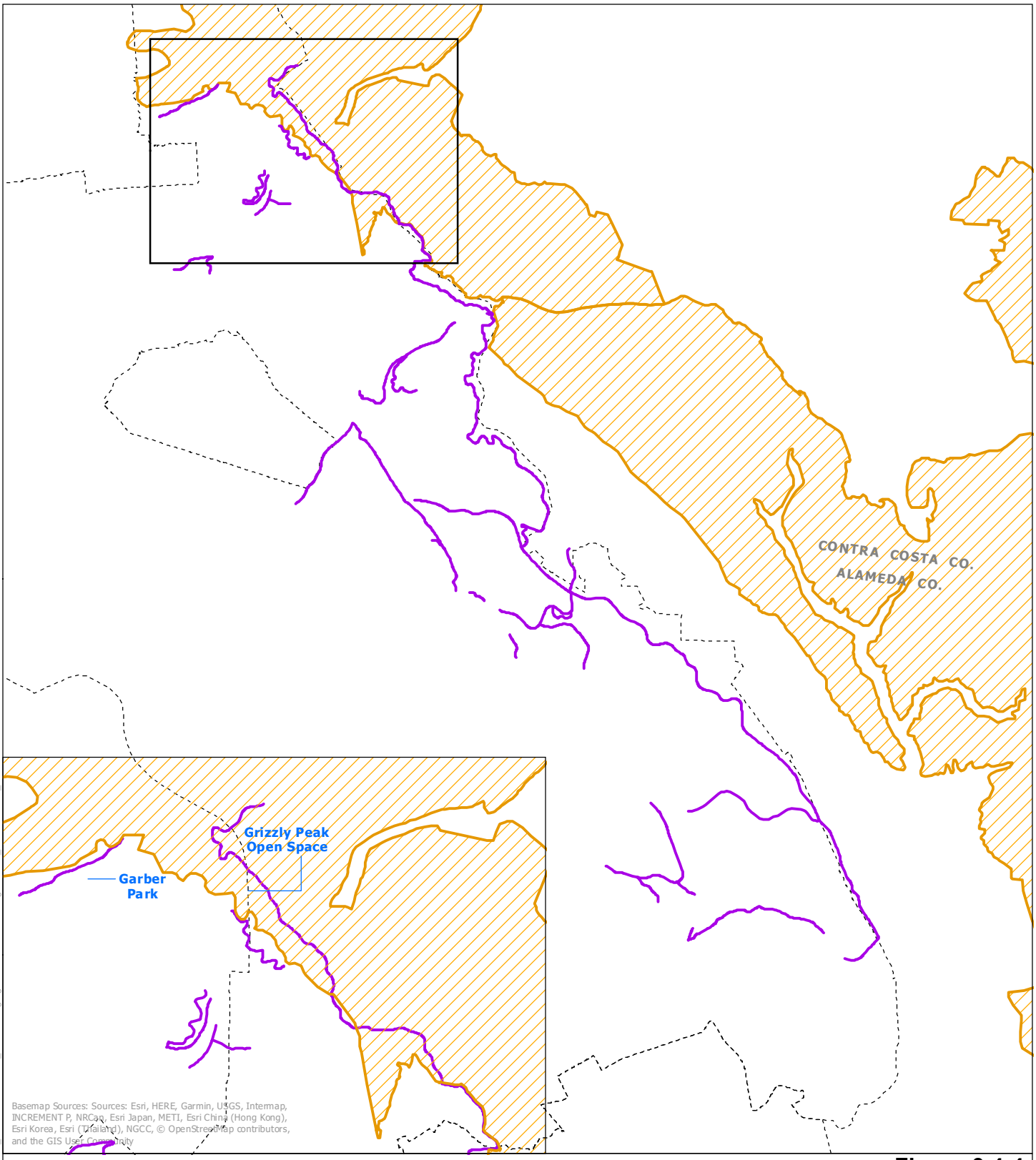

Figure 3.4-4
Critical Habitat

Sources: City of Oakland; CAL FIRE

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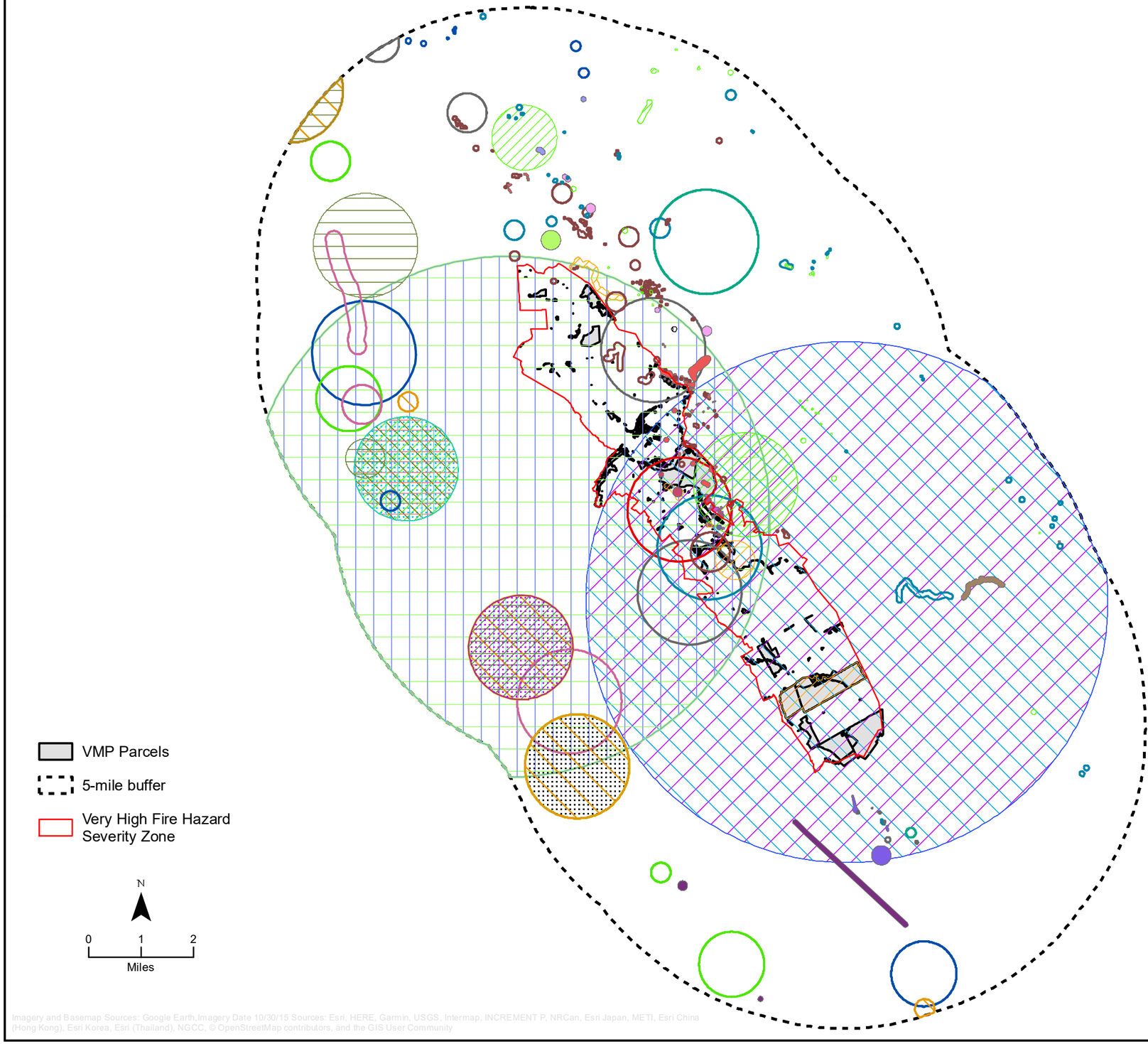

Special-Status Plant Species

Source: CNDDB October 2020 update

- California seablite
- Choris' popcornflower
- Congdon's tarplant
- Diablo helianthella
- Franciscan thistle
- Jepson's coyote-thistle
- Kellogg's horkelia
- Loma Prieta hoita
- Marin knotweed
- Mt. Diablo fairy-lantern
- Oregon meconella
- Point Reyes salty bird's-beak
- Presidio clarkia
- San Francisco Bay spineflower
- San Francisco popcornflower
- San Joaquin spearscale
- Santa Clara red ribbons
- Santa Cruz tarplant
- Tiburon buckwheat
- adobe sanicle
- alkali milk-vetch
- bent-flowered fiddleneck
- big-scale balsamroot
- dark-eyed gilia
- fragrant fritillary
- long-styled sand-spurrey
- minute pocket moss
- most beautiful jewelflower
- oval-leaved viburnum
- pallid manzanita
- robust spineflower
- saline clover
- slender-leaved pondweed
- western leatherwood
- woodland woollythreads

Figure 3.4-5
CNDDB-mapped Plants in the VMP Area

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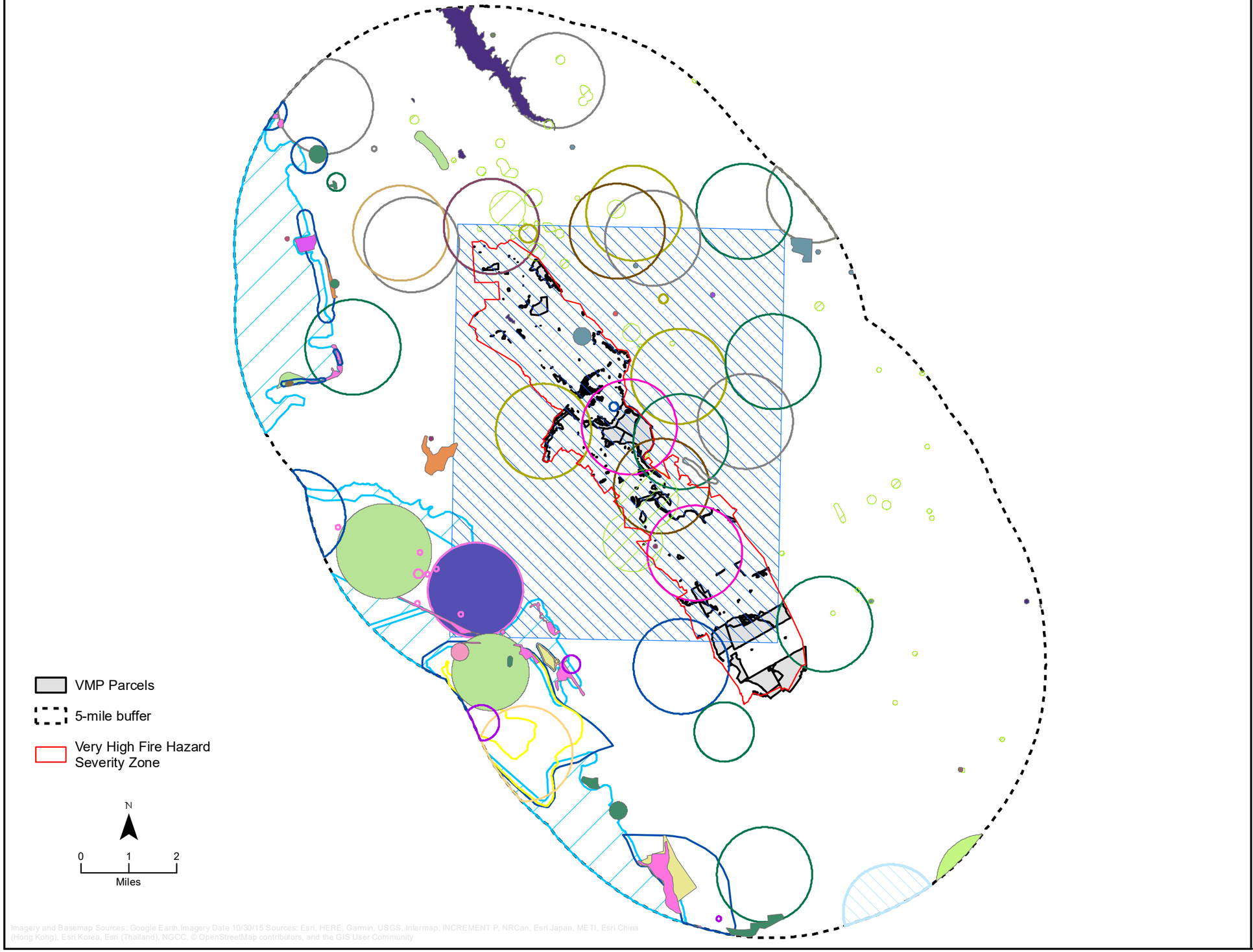

Imagery and Basemap Sources: Google Earth,Imagery Date 10/30/15 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

T:_PROJECTS\16042_OaklandVegMgmtPlan\mxd\CEQA\Figure 3-4-6_CNDDB_Animals.mxd RH 10/30/2020

Special-Status Plant Species

Source: CNDDB October 2020 update

- Alameda Island mole
- Alameda song sparrow
- Alameda whipsnake
- American badger
- American peregrine falcon
- Bay checkerspot butterfly
- California Ridgway's rail
- California black rail
- California least tern
- California red-legged frog
- California tiger salamander
- Cooper's hawk
- Crotch bumble bee
- Sacramento perch
- San Francisco dusky-footed woodrat
- Townsend's big-eared bat
- bald eagle
- big free-tailed bat
- burrowing owl
- foothill yellow-legged frog
- golden eagle
- longfin smelt
- monarch - California overwintering population
- northern harrier
- pallid bat
- salt-marsh harvest mouse
- salt-marsh wandering shrew
- saltmarsh common yellowthroat
- tidewater goby
- western bumble bee
- western mastiff bat
- western pond turtle
- western snowy plover
- white-tailed kite
- yellow rail
- yellow warbler

Figure 3.4-6
CNDDB-mapped Special-status Animals in the VMP Area

Vegetation Management Plan
Draft Environmental Impact Report

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