

# Chapter 3 Environmental Setting, Impacts, and Mitigation Measures

## 3.1 OVERVIEW

Sections 3.2 through 3.14 of this chapter describe the environmental resources and potential environmental impacts of the VMP. Each section describes the existing environmental setting and background information for a particular resource topic to help the reader understand the conditions that could be affected by the VMP. In addition, each section in Chapter 3 includes a discussion of the criteria used to determine the significance levels of the VMP's environmental impacts. If appropriate, mitigation measures are identified to reduce, where possible, the adverse effects of significant impacts.

### 3.1.1 Significance of Environmental Impacts

According to the CEQA statutes and guidelines, an EIR should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. For each environmental resource topic, significance criteria are identified to determine whether implementation of the proposed program would result in a significant environmental impact when evaluated against the baseline condition, as described in the environmental setting. The significance criteria vary depending on the environmental resource topic. In general, effects can be either significant or potentially significant (exceed the threshold) or less than significant (do not exceed the threshold). In some cases, a significant impact will be identified as significant and unavoidable if no feasible mitigation measures are available that would reduce the impact to a less-than-significant level. If a project is subsequently adopted despite identified significant impacts that would result from the project, CEQA requires the lead agency to prepare and adopt a statement of overriding considerations describing the social, economic, and other reasons for moving forward with the project despite its significant impacts.

#### ***Impact Terminology and Use of Language in CEQA***

This DEIR uses the following terminology to describe environmental effects of the VMP:

- A finding of *no impact* is made when the analysis concludes that the VMP would not affect the particular environmental resource or issue.
- An impact is considered *less than significant* if the analysis concludes that there would be no substantial adverse change in the environment and that no mitigation is needed.
- An impact is considered *significant* or *potentially significant* if the analysis concludes that there would be, or could be, a substantial adverse effect on the environment.

- An impact is considered *less than significant with mitigation* if the analysis concludes that there would be no substantial adverse change in the environment with the inclusion of the mitigation measures described.
- An impact is considered *significant and unavoidable* if the analysis concludes that there could be a substantial adverse effect on the environment and that, even with the inclusion of feasible mitigation measures, the impact would not be reduced to a less-than-significant level.
- *Mitigation* refers to specific measures or activities adopted to avoid, minimize, rectify, reduce, eliminate, or compensate for an impact.
- A *cumulative impact* can result when a change in the environment results from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively substantial projects. The cumulative impact analysis in this DEIR (provided in Section 4.5 of Chapter 4) focuses on whether the VMP's incremental contribution to significant cumulative impacts caused by past, present, or probable future projects is cumulatively considerable (i.e., significant).
- Because the term "significant" has a specific usage in evaluating impacts under CEQA, it is used only to describe the level of significance of impacts and is not used in other contexts within this document. Synonyms such as "substantial" have been used when not discussing the significance of an environmental impact.

### ***Format of Impact Titles***

Impact titles are formatted to summarize information about the impact, as follows:

#### **Impact TOPIC-#: Impact Title (*Impact Conclusion*)**

These terms are further described as follows:

- **TOPIC:** an abbreviation of the resource topic to which the impact applies (e.g., AES for aesthetics). The reader can determine the impact's resource topic by reading the impact title.
- **#:** impacts are numbered sequentially
- **Impact Title:** provides a brief text description of the impact. The reader can determine the specific issue that the impact discussion is addressing.
- **Impact Conclusion:** identifies the level of impact, with the five possibilities being No Impact, Less than Significant, Less than Significant with Mitigation, Significant and Unavoidable, or Beneficial. The reader can determine the impact's significance by reading the impact title.

### **3.1.2 Baseline Conditions**

Under CEQA, the environmental setting or "baseline" serves as a gauge to assess changes to existing physical conditions that would occur as a result of a proposed project. According to

State CEQA Guidelines (Cal. Code Regs., tit. 14, Section 15125), for purposes of an EIR, the environmental setting is generally the existing physical conditions at the project site or in the project area at the time the NOP is published. While recent changes in the CEQA Guidelines have enabled the alternative use of a future projected or historic baseline; such alternative baselines are intended to apply to unique situations.

It is important to note that certain activities that are part of the VMP have been undertaken on an ongoing basis for some time. As described in Chapter 2, Section 2.2.1, OFD conducted vegetation management activities throughout the WPAD, a City-funded special assessment district that coincides with the City's VHFHSZ and financed various vegetation management activities throughout the Oakland hills. WPAD-funded vegetation management activities occurred between 2005 and 2018; since 2018, fewer vegetation management activities have occurred on City properties. For the purposes of this EIR, the baseline condition takes into consideration the range of vegetation management activities (type and amount) that has occurred annually between 2005 and 2018. **Table 3.1-1** below summarizes the approximate range of vegetation management activities that have occurred throughout the VMP area between 2005 and 2018.

**Table 3.1-1.** Summary of Vegetation Management Activities Conducted between 2005 and 2018

Vegetation Management Activities	Acres of Treatment					
	Fiscal Year (FY) 2005-06 to FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18
Goat Grazing	600-700	900	900	900	1,100	1,100
Roadside and Urban/ Residential Parcel Treatments using Hand Labor and Mechanical Treatment Techniques	400-500	367	227	152	152	152

Source: City of Oakland pers. comm., 2020.

For the purposes of this DEIR, the baseline condition is considered the average amount of vegetation management activities conducted annually over the last 15 years: approximately 900 acres of goat grazing and 400 acres of roadside treatment and other activities using a combination of hand labor and mechanical techniques. The impact analyses in this DEIR focus on new, additional, or different activities from the baseline activities that represent a marked difference from the baseline condition. Thus, the DEIR focuses on the incremental change or effects from baseline conditions resulting from the VMP.

### 3.1.3 Sections Eliminated from Further Analysis

Six resource topics have been eliminated from further analysis based on the nature and scope of the VMP activities. A brief summary and description of these resource topics dismissed from further review is provided below.

### ***Agriculture and Forestry***

The VMP area consists entirely of land designated as “urban and built-up” or “other land” (California Department of Conservation [CDOC] 2018). No Williamson Act contract lands are included in the VMP area (Bay Area Open Space Council 2011). Implementation of the VMP would not convert Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to a non-agricultural use. Agricultural activities and plant nurseries are permitted uses with limitations or a conditional use permit in most areas of the City. However, the “Earth Resources” section of the General Plan Open Space, Conservation, and Recreation Element indicates that “large-scale agriculture is no longer feasible in Oakland due to its urbanized character” (City of Oakland 1998). Activities conducted under the VMP would take place exclusively on City-owned properties, none of which are agricultural. Therefore, the VMP would not conflict with existing zoning for agricultural uses.

While portions of the VMP area includes forested fuel types, the VMP would not convert any forest areas to non-forest types or uses. Thus, the VMP would not result in adverse effects related to forestry criteria identified in Appendix G of the CEQA Guidelines. Tree removal and treatment of tree/ woodland/forest fuels in the VMP area are addressed in Section 3.2, “Aesthetics”; Section 3.4, “Biological Resources”; and Section 3.7, “Greenhouse Gas Emissions, Climate Change, and Energy.”

Based on the above discussion, no impacts on agriculture and forestry resources would occur and this topic is not evaluated further in this EIR.

### ***Land Use and Planning***

The City has various land use plans and policies adopted for the purpose of avoiding or mitigating environmental effects. The City’s General Plan (1998) addresses topics such as open space, conservation, and recreation; public safety; and hazards, including policies related to fire safety and reduction of wildfire risk. As described in Chapter 2 of this EIR, conducting vegetation management for the purposes of maintaining defensible space is required on properties within the VHFHSZ portion of the City (refer to Fire Code Section 4907 of the Oakland Municipal Code Chapter 15.12). Development of a vegetation management program such as the VMP supports compliance with Fire Code Section 4907.

The City also relies on other planning documents to guide public safety and hazard reduction. These include the *2016-2021 City of Oakland Local Hazard Mitigation Plan* (City of Oakland 2016), which identifies mitigation actions to reduce fire risk and wildfire hazard; and the *Oakland Annex to the 2010 ABAG Local Hazard Mitigation Plan – Taming Natural Disasters* (City of Oakland 2012), which lists regional mitigation strategies and prioritizes them for implementation in Oakland.

In 1997, the City adopted an Integrated Pest Management (IPM) Policy that limits the use of pesticides to manage pest problems on City-owned property. In 2005, the City adopted Resolution 79133 authorizing staff to evaluate an additional exemption from the IPM Policy that would permit the use of glyphosate and triclopyr on City-owned land within the WPAD to “improve fire prevention and reduce wild land fuels in a cost effective and environmentally sensitive way.” The revised herbicide policy is part of the project being evaluated in this EIR.

Based on the above discussion, no impacts on land use and planning would occur and this topic is not evaluated further in this EIR.

### ***Mineral Resources***

Mining and quarrying activities for commercially valuable resources have taken place in Oakland, and extraction and quarrying are permitted uses in General Industrial and Manufacturing zoning designations with limitations and/or a conditional use permit. Only one quarry remains in operation, however. This operation has been designated a “Regionally Significant Constriction Aggregate Resource” by the State Mining and Geology Board (City of Oakland 1998). This site is not located within the VMP area, and activities conducted under the VMP would not prevent similar operations from continuing. Therefore, no impacts on mineral resources would occur and this topic is not evaluated further in this EIR.

### ***Population and Housing***

The VMP would not involve the construction of new housing or generate any long-term employment opportunities that could cause substantial population growth. Vegetation management activities would be conducted by contracted workers who would be employed temporarily in the VMP area. Because these jobs would likely be filled by the local work force, the VMP would not directly induce unplanned population growth related to new long-term employment opportunities. Further, the VMP would not result in the construction of new roads or trails that would indirectly induce population growth.

Although vegetation management activities would occur near residences throughout the VMP area, no residents would be displaced by the VMP, either temporarily or permanently. Rather, as the VMP is intended to minimize wildfire hazards, the VMP would help protect existing housing in the VMP area and surrounding areas, reduce the effect of housing loss, and limit the future displacement of residents adjacent to the VMP area in the event a catastrophic wildland fire occurred. This is considered an indirect beneficial effect of the VMP. Therefore, the VMP would not displace existing housing or people, such that replacement housing would be needed elsewhere. As such, no impacts related to housing displacement would occur, and this topic is not evaluated further in this EIR.

### ***Public Services***

The VMP does not involve construction of new or physically altered governmental facilities and no additional new or physically altered governmental facilities would be required to conduct proposed vegetation management activities. OFD and Oakland Police Department would continue to provide fire and police protection services throughout the VMP area. Implementation of the proposed vegetation treatment projects described in the VMP and summarized in Chapter 2, *Project Description*, would not require additional police or fire protection services such that acceptable service ratios could not be maintained. Rather, as one of the primary goals for the VMP is to reduce wildfire hazards along critical access/egress routes, conducting proposed vegetation management treatment projects along these routes would help ensure fire response times are maintained along these same routes in the long-term.

Additionally, because the VMP would not induce population growth which could lead to an increase in student enrollment in public schools, the VMP would not require construction of

new schools or result in Oakland public school capacities being exceeded. As such, there would be no impact on public services, and this topic is not evaluated further in this EIR.

### ***Utilities and Service Systems***

The VMP is limited to vegetation management activities and would not result in the construction of any new permanent structures that would generate wastewater, require wastewater treatment, or generate additional stormwater runoff. Proposed vegetation management activities would also not require large amounts of water or produce large amounts of wastewater. Only a minimal amount of water would be required for dust control purposes and a limited amount of wastewater treatment would be required for treating sewage generated by contractors conducting the work. Similar to other construction projects, port-a-potties would be used onsite and generated wastewater would be treated at a local wastewater treatment facility. Therefore, the VMP would not result in the construction of new or expanded water, wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities such that an adverse environmental effect would occur.

Additionally, most vegetation treatment activities would occur entirely aboveground (i.e., no excavation below the ground surface) and thus not disrupt belowground utilities such that relocation would be required. It is possible that some tree removal activities could involve more extensive ground disturbance that could affect belowground utilities. However, as standard practice, the City and/or its contractor(s) would contact Underground Service Alert (USA) North 811 prior to any excavation activities to confirm presence of any belowground utilities. In doing so, the City's contractor(s) would avoid potential adverse effects (including relocation) of existing belowground utilities.

For the reasons described above, impacts on utilities and service systems would be less than significant and this topic is not analyzed further in this EIR.

## 3.2 AESTHETICS

This section addresses the existing visual resources within the area potentially affected by the VMP and the pertinent local and state plans and policies related to the protection of visual and scenic resources. This section evaluates the potential effects of the VMP on aesthetic resources, including views from designated scenic highways, scenic areas, and public view corridors.

### 3.2.1 Environmental Setting

#### *Definitions*

When evaluating the impacts of vegetation treatments on the visual environment, the focus is on three overarching parameters: existing visual conditions; how these would be altered by implementing a treatment; and the significance of the change on scenic qualities of the landscape and publicly available viewpoints. Visual resources considered in an evaluation include those features in the natural and cultural landscapes that comprise the visible world and contribute to a person's understanding of and reaction to the scene before them. Visual resources include both natural elements, such as topography, vegetation, and water, and constructed features, such as earthworks, roads, and structures.

This visual analysis considers visual character, visual quality, and viewer sensitivity. Visual quality of treatment areas and viewer sensitivity have been ranked as being high to low. These elements of the visual analysis methodology are described below. Visual change is another term used throughout this analysis, and is described below.

- Visual character is the unique set of landscape features that combine to make a view, including native landforms, water, and vegetation patterns, as well as built features such as buildings, roads, and other structures.
- Visual quality is the intrinsic appeal of a landscape or scene and the associated public value attributed to the resource. A high rating is generally reserved for landscapes viewers might describe as “picture perfect.” Landscapes rated high generally are memorable because of the way the components combine in a visual pattern. In addition, those landscapes are free from encroaching elements that would compromise the landscapes' visual integrity. In contrast, landscapes rated low often are dominated by visually discordant alterations that have been introduced by humans. Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by viewer sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity.
  - **Vividness:** The extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements. A vivid landscape makes an immediate and lasting impression on the viewer.
  - **Intactness:** The integrity of “visual order” in the landscape, which is the extent to which the natural landscape is free from visual intrusions. If all the various elements of a landscape appear to “belong” together, there will be a high level of intactness.

- **Unity:** The extent to which visual intrusions are sensitive to and in visual harmony with the natural landscape. Unity, in other words, represents the degree to which the visual elements maintain a coherent visual pattern.
- Viewer sensitivity reflects the level of interest or concern that viewers have for a particular visual resource, with visual quality taken into account. Viewer sensitivity is a measure of how noticeable proposed changes might be in a particular setting and from a particular location or viewshed (the area visible from a fixed vantage point). Viewer sensitivity is determined based on the visibility of a resource or view, the duration that a particular view would be available to viewers, and the number of viewers.
  - Visibility is a measure of how well an object or site can be seen. It depends on the angle or direction of the view; extent of visual screening; and the topographical relationship between the object or site and existing vantage points. Visibility is determined by considering any obstructions that may be in the sightline, such as trees and other vegetation, buildings, landforms, and haze or fog. Distance becomes a factor; with increasing distance from the viewer, objects become less prominent in the view and less clearly distinguishable.
  - Duration of view is the amount of time available to view the site or activity. For example, a high or extended view of a site may be 2 minutes or longer. In contrast, a low or brief duration of view occurs in a short amount of time — generally less than 10 seconds. For stationary locations, such as public vista points, the duration is extended. For travelers on a highway, the duration may be very short.
  - Number of viewers is a measure of how many viewers per day would have a view of the proposed activity. As indicated in Appendix G of the State CEQA Guidelines, visual analysis focuses on public viewpoints, which emphasize accessible locations with higher numbers of viewers (as opposed to private views, such as those available to residential viewers).

Viewer sensitivity is generally lower for more heavily urbanized, non-residential areas, such as commercial or industrial uses. Areas such as scenic vistas, parks, trails, and scenic roadways typically have a high visual quality and viewer sensitivity because these locales are publicly protected, appear natural, have view durations that are typically long, and have close-up views that are more commonly available. Typically, travel routes or areas where viewers have moderate concerns about the visual quality of an area have moderate sensitivity. Areas apart from travel routes and use areas where there are few viewers with concern about the visual quality typically have a low viewer sensitivity.

- Visual change is a function of contrast, dominance, and view blockage or disruption. Contrast and dominance contribute more to the degree of visual change than view disruption.
  - Contrast concerns the degree to which a treatment’s visual characteristics or elements — such as its form, line, color, and texture — differ from the same visual elements in the existing landscape. The degree of contrast can range from low to high. A treatment resulting in forms, lines, colors, and textures similar to those of the existing landscape is more readily visually absorbed. When characteristics or

elements are similar to those of the existing condition, a treatment or treated site is more capable of being accepted in the landscape, compared to a landscape in which similarities are absent.

- Dominance is a measure of the proportion of the total field of view occupied by a treatment, a feature's apparent size relative to other visible landscape features, and the conspicuousness of the feature because of its location or position in the view. A feature's level of dominance is lower in a panoramic setting than in an enclosed setting with a focus on the feature itself. As the distance between a viewer and a feature increases, its apparent size decreases, decreasing its dominance. Objects seen against the sky are more prominent or dominant than objects viewed against trees, landforms, and buildings.
- View blockage is concerned with the extent to which previously visible landscape features become blocked from view. View disruption also occurs when view continuity is interrupted, such as when a treatment might break the line of a sweeping vista.

### ***Scenic Vistas***

CEQA specifically protects scenic environmental qualities (Pub. Res. Code Section 21001), and Appendix G of the CEQA Guidelines evaluates whether the project will have a substantial adverse effect on a scenic vista. Scenic vistas are specific views with high visual quality that are available from public vantage points such as lookout points or ridgeline trails. These typically provide broad, long-range scenic views that offer panoramic and exceptional landscape-scale scenic quality. Scenic vistas are sometimes recognized by public agencies through designation of protective policies or labeled on maps as designated scenic viewing destinations.

### ***Regional Visual Character***

#### **VMP Area Overview**

Treatment areas within the VMP area include various landscapes, ranging from forested ridgetops in the Oakland Hills to the north (e.g., Grizzly Peak Open Space, North Oakland Sports Field) to steep canyon areas (e.g., Dimond Canyon Park, Shepherd Canyon) and City parks and open space areas that comprise a mixture of forest, woodland, and grassland habitats. The VMP area also encompasses small urban and residential parcels, 308 miles of roadside treatment areas, and road medians that generally traverse residential/urban neighborhoods in the Oakland Hills. **Figure 3.2-1 through Figure 3.2-4** include representative photographs of several VMP treatment areas.

Overall, the VMP area's visual character is defined by a combination of residential/urban development and various types of vegetation communities (forested woodland, eucalyptus, annual grassland, scrub) across canyon areas, ridgetops, City parks and open space areas, and roadsides.

#### **Scenic Views**

Several portions of the VMP area provide the background setting for scenic views from San Francisco County and from major highways, including State Route (SR) 13, Interstate (I-) 580,

and SR 24 for commuters and travelers living and working in nearby communities. Within the VMP area, some priority roadsides such as Skyline Boulevard and Grizzly Peak Boulevard also provide long-ranging scenic views of the San Francisco Bay, greater East Bay area, and San Francisco County.

### Existing Light and Glare

Existing sources of nighttime light in the VMP area include lights along roadways, streets, walkways, and parking lots that are associated with parks, open spaces, and recreational areas, as well as structural and security lighting associated with urban/residential areas. For example, lights are present in parking lots at Joaquin Miller Park. The Montclair Golf Course, located within Dimond Canyon Park, has lights in its parking lot and the driving range also has bright outdoor lighting. Many of these lighted areas are located within forested areas. Sources of daytime glare are vehicles on roads and in parking lots. Urbanized areas contain varied light sources (e.g., streetlights, car headlights, building lighting, signage) and are sources of sky glow (area-wide illumination of the night sky from human-made light sources). Light and glare are low near most trails and forested areas in the VMP area.

### ***Existing Visual Conditions of VMP Treatment Areas***

The following sections describe the existing visual conditions (i.e., visual character, visual quality, and viewer sensitivity) of VMP treatment areas by parcel types. **Table 3.2-1** summarizes the visual character, visual quality, and viewer sensitivity of each parcel type.

#### Urban and Residential Parcels

Urban and residential parcels include parcels generally smaller than 1 acre in size and are distributed throughout the VMP area. These parcels are currently maintained by the City and undergo manual treatment of vegetation to reduce ladder fuels, control invasive species, and reduce surface fuels. A typical urban/residential parcel is shown in **Figure 3.2-1**, Photo 1. Since urban and residential parcels are scattered throughout the VMP area, the visual character and quality varies from site to site. The viewer sensitivity of nearby residents ranges from moderate to high depending on the degree of visibility of the treatment areas from nearby homes. The viewer sensitivity of motorists driving by these parcels is moderate.



**Photo 1.** View of a eucalyptus stand with treated understory vegetation on an urban/residential parcel.



**Photo 2.** View of Garber Park from the trail showing oak woodland understory vegetation.

Source: Dudek 2019

**Figure 3.2-1. Typical Views of VMP Treatment Areas  
– Urban/Residential Parcels and Canyon Areas**



**Photo 3.** View of riparian vegetation along a trail in Dimond Canyon Park.



**Photo 4.** View of grass with tree overstory in Shepherd Canyon Park.

Source: Dudek 2019

**Figure 3.2-1. Typical Views of VMP Treatment Areas  
– Urban/Residential Parcels and Canyon Areas**



**Photo 1.** View of upland vegetation in Leona Heights Park.



**Photo 2.** View of previously thinned area downslope of a non-thinned eucalyptus stand at North Oakland Sports Field

Source: Dudek 2019

**Figure 3.2-2. Typical Views of VMP Treatment Areas  
– Canyons and Ridgetop Areas**



**Photo 3.** View of the upper portion of Grizzly Peak Open Space along Grizzly Peak Boulevard.



**Photo 4.** Long-ranging view of the San Francisco Bay Area from Grizzly Peak Boulevard above Grizzly Peak Open Space.

Source: Dudek 2019

**Figure 3.2-2. Typical Views of VMP Treatment Areas  
– Canyons and Ridgetop Areas**



**Photo 1.** View of grazed grassland and oak woodlands in Sheffield Village Open Space.



**Photo 2.** View of grazed grassland and scattered trees of Knowland Park and Arboretum.

Source: Dudek 2019, Horizon 2019

**Figure 3.2-3. Typical Views of VMP Treatment Areas  
– City Park Lands and Open Space Areas**



**Photo 3.** View of an acacia tree stand along a trail in Joaquin Miller Park.



**Photo 4.** View of grazed grassland oak woodland and grass/shrub fuels in King Estate Open Space Park.

Source: Dudek 2019, Horizon 2019

**Figure 3.2-3. Typical Views of VMP Treatment Areas –  
City Park Lands and Open Space Areas**



**Photo 1.** View of grassland and oak woodland vegetation at Tunnel Road Open Space property.



**Photo 2.** View of a grazed roadside treatment area along Golf Links Road.

Source: Dudek 2019

**Figure 3.2-4. Typical Views of VMP Treatment Areas –  
Open Space Areas and Roadside Treatment Areas**



**Photo 3.** View of a roadside treatment area and median area along Joaquin Miller Road.

Source: Dudek 2019

**Figure 3.2-4. Typical Views of VMP Treatment Areas –  
Open Space Areas and Roadside Treatment Areas**

**Table 3.2-1.** Summary of Existing Visual Conditions in VMP Treatment Areas

<b>Treatment Area</b>	<b>Visual Character</b>	<b>Visual Quality</b>	<b>Viewer Sensitivity</b>
Urban and Residential Parcels	Varies from site to site.	Varies from site to site	Moderate to high for residents, passing motorists
<b><i>Canyon Areas</i></b>			
Garber Park	Characterized by predominantly oak woodland understory and the surrounding residential development along nearby roads.	Moderate	Moderate to high for adjacent residents, recreationists
Dimond Canyon Park	Characterized by riparian setting, undeveloped oak woodland habitat, and surrounding residential development.	Moderate	Moderate to high for adjacent residents; moderate for passing motorists
Shepherd Canyon Park	Marked by creek, coastal oak woodland, eucalyptus stands, and Shepherd Canyon Field.	Moderate	High for adjacent residents; moderate for passing motorists
Leona Heights Park	Defined by coastal oak woodland and redwood, steep topography, and surrounding residential development and community college.	Moderate	Moderate to high for adjacent residents, recreationists; moderate for passing motorists
Beaconsfield Canyon	Defined by closed-cone cypress, coastal oak woodland, and coastal scrub vegetation communities and native vegetation.	Moderate to high	Moderate to high for recreationists, adjacent residents
<b><i>Ridgetop Areas</i></b>			
North Oakland Regional Sports Field	Defined by ball fields, eucalyptus stands, access road, and existing electrical lines.	Moderate	Moderate to high for recreationists; moderate for passing motorists, residents
Grizzly Peak Open Space	Defined by steep slope, pine, and cypress trees mostly in the southern two-thirds of the property, and coastal scrub habitat to the north.	Moderate to high	Moderate to high for adjacent residents; moderate for passing motorists
City Stables	Defined by the existing stables and other structures on the site.	Low	Low to moderate for adjacent residents
<b><i>City Park Lands and Open Space Areas</i></b>			
Sheffield Village Open Space	Defined by a variety of land cover types, golf course, and adjacent residential development.	Moderate	Moderate for local hikers, adjacent residents
Knowland Park and Arboretum	Characterized by the zoo, various land cover types (mostly coast oak woodland, coastal scrub, and annual grassland), and surrounding residential development.	Moderate to high	Moderate for adjacent residents, passing motorists; low to moderate for motorists on I-580

<b>Treatment Area</b>	<b>Visual Character</b>	<b>Visual Quality</b>	<b>Viewer Sensitivity</b>
Joaquin Miller Park	Influenced by the developed recreational facilities in the southern portion of the park and the less developed portion to the north consisting of redwood groves, oak woodlands, meadows, and creeks.	High	High for recreationists; moderate for passing motorists
King Estate Open Space Park	Defined mostly by the annual grassland and hilly terrain.	Moderate to high	Moderate to high for adjacent residents; moderate for passing motorists
<b><i>Other Open Space Areas</i></b>			
Blue Rock Court	Characterized by eucalyptus, coast oak woodland, and grassland habitats, adjacent to residential development.	Low to moderate	Moderate for adjacent residents; low to moderate for passing motorists
Leona Street	Characterized by eucalyptus and coastal oak woodland vegetative cover on steep terrain; surrounded by low-density residential development.	Low to moderate	Low to moderate for nearby residents
McDonnell Avenue	Characterized by coast oak woodland vegetative cover.	Low to moderate	Low to moderate for nearby residents
Police/Safety Department Site on Mountain Boulevard	Characterized by eucalyptus trees, police/safety department facility, and surrounding residences.	Low to moderate	Low to moderate for nearby residents
Tunnel Road Open Space	Defined by the Oakland Hills Fire Memorial Park at the south end and coast oak woodland and grassland habitat present within this small hilly open space area.	Moderate	Moderate for passing motorists
Marjorie Saunders Park	Characterized by eucalyptus and coast oak woodland vegetation, local "painted rock," rock-lined waterfall, and native plant landscaping.	Moderate	Moderate for adjacent residents; low to moderate for motorists
Oak Knoll	Characterized by grassland, eucalyptus, and urban land covers, with surrounding residential and commercial development.	Moderate	Moderate for passing motorists

### Canyon Areas

#### *Garber Park*

Garber Park is situated primarily along the south side of Claremont Avenue at the bottom of Claremont Canyon. The park has a north-facing slope and is comprised of primarily coast oak

woodland habitat with scattered eucalyptus, acacia, and pine trees. A trail traverses through the park and is accessible from Evergreen Lane and Rispin Drive. Garber Park is characterized by the park's predominantly oak woodland understory and the surrounding residential development along Claremont Avenue, Evergreen Lane, Rispin Drive, and other nearby roads. Figure 3.2-1, Photo 2 shows a typical view of the oak woodland understory along the trail. The visual quality of the park is considered moderate due to its predominantly forested landscape and low-density residential development nearby. The viewer sensitivity is moderate to high for residents along adjacent roads and recreationists using the trail.

#### *Dimond Canyon Park*

Dimond Canyon Park is situated along Sausal Creek, south of SR 13, includes the creek channel, and is primarily surrounded by residential development. Park Boulevard generally forms the boundary of the park's northeast corner and Monterey Boulevard forms the boundary along the north. The park is also bisected by Leimert Boulevard and El Centro Avenue. The park is undeveloped north of El Centro Avenue and is developed south of this road. Dimond Canyon Park includes riparian vegetation and mostly coast oak woodland throughout the undeveloped portion of the park. A few trails traverse the park, including Old Canyon Trail, Dimond Canyon Trail, and Bridgeview Trail. Figure 3.2-1, Photo 3 shows riparian vegetation that can be seen from a trail within the park. Proposed treatments are focused along the adjacent roadsides bordering and bisecting Dimond Canyon Park. The visual character of Dimond Canyon Park is characterized by the park's riparian setting, undeveloped oak woodland habitat, and surrounding residential development. The visual quality is considered moderate as the park offers views of Sausal Creek and varied vegetation and topography. The viewer sensitivity varies between moderate and high for adjacent residents. Viewer sensitivity for motorists traveling on adjacent roads, including Leimert Boulevard, El Centro Avenue, Monterey Boulevard, and Park Boulevard, would be moderate due to speed of travel and the brief, limited viewing durations of the park.

#### *Shepherd Canyon Park*

Shepherd Canyon Park is situated along Shepherd Creek in Shepherd Canyon, northeast of SR 13. The park includes the creek channel and upland areas mapped with primarily coast oak woodland, eucalyptus, urban, annual grassland, and closed-cone pine-cypress. Montclair Railroad Trail runs from Snake Road to Mountain Boulevard. Large amounts of broom exist throughout the park, particularly along Shepherd Canyon Road. The park is surrounded by residential development to the west. Shepherd Canyon Road and Escher Road traverse the park. Views from Shepherd Canyon Road mostly consist of eucalyptus, broom, power lines, Oakland Fire Station No. 24, and the grassy Shepherd Canyon Field (public park). Figure 3.2-1, Photo 4 shows a view of the grassy and tree overstory in Shepherd Canyon Park. Montclair Railroad Trail is a paved 1.5-mile-long trail used by joggers, hikers, and bicyclists and similarly provides views of trees, broom, and grassland habitats. The park's visual character is marked by the creek, coastal oak woodland, eucalyptus stands, and Shepherd Canyon Field. The park's visual quality is considered moderate given the variety of vegetation types, sloped landforms, and presence of power lines along Shepherd Canyon Road. The viewer sensitivity is high for residents bordering the park, and moderate for motorists traveling on Shepherd Canyon Road.

### *Leona Heights Park*

Leona Heights Park is situated along a drainage south of Redwood Road and Campus Drive east of SR 13. The park includes the drainage channel and some upland vegetation (Figure 3.2-1, Photo 1), extending south of the Merritt College parking lot west of Campus Drive. Much of the park is inaccessible due to its steep terrain with the exception of some trails, the main one being the York Trail. The York Trail connects the lower portion of the park at Mountain Boulevard to the upper portion near Merritt College, and eventually joins a fire road from McDonnell Avenue. Trail users have views of oak woodland habitat filled with bay trees, berries, and wildflowers. The park's visual character is defined by the park's primary vegetation/land cover types (coastal oak woodland and redwood), its steep topography, and surrounding residential development and community college. Given the park's mostly undeveloped nature, variety of vegetation types, and surrounding development, the visual quality is considered moderate. The viewer sensitivity is moderate to high for residents adjacent to the creek and recreationists using trails within the park. The viewer sensitivity is moderate for motorists traveling on adjacent roads, including Campus Drive, Redwood Road, and Mountain Boulevard.

### *Beaconsfield Canyon*

Beaconsfield Canyon is located at the end of Keswick Court, southeast of Shepherd Canyon Park. This small 4.3-acre park consists of the following vegetation communities: closed-cone cypress, coastal oak woodland, and coastal scrub. A trail traverses through the canyon and is primarily used by nearby residents. The park's visual character is defined by these vegetation communities and native vegetation planted by the Beaconsfield Canyon Volunteers and the Friends of Sausal Creek stewardship groups. The visual quality is considered moderate to high given its natural and undeveloped setting. The viewer sensitivity is moderate to high for both recreationists using the trail and adjacent residents as this depends on level of visibility and both viewer groups typically have a higher concern of surrounding landscapes.

### Ridgetop Areas

#### *North Oakland Regional Sports Field*

The North Oakland Regional Sports Field property (approximately 53.6 acres in size) is situated to the south of SR 24 and immediately south of the Caldecott tunnels. The property is characterized by a second-growth eucalyptus stand in its northern and eastern portions, and a coastal oak woodland stand in the southern half. The lower, central portion of the property also includes a tributary stream to Temescal Creek, baseball fields, and a dirt access road that bisects the property as it runs upward from Broadway from the west, through the eucalyptus stand, toward homes above on Skyline Boulevard. Overhead power lines maintained by Pacific Gas and Electric Company (PG&E) traverse the southern portion of the property. The dirt access road is used by recreationists, providing immediate views of eucalyptus stands and understory vegetation including French broom and other invasive species like pampas grass and jubata grass. **Figure 3.2-2**, Photo 2 shows a representative view of previously thinned area downslope of non-thinned eucalyptus trees. From the southern end of the dirt access road, long-ranging views of the San Francisco Bay and greater San Francisco Bay Area can be seen. The property's visual character is defined by the ball fields, eucalyptus stands, access road, and existing electrical lines. The area's visual quality is considered moderate given the property's predominantly undeveloped state in combination with built structures. For recreationists using

the dirt access trail, the viewer sensitivity is moderate to high because close-up views of trees and vegetation are available and viewer concern of recreationists is typically high.

As noted above, primary viewers of the North Oakland Regional Sports Field include motorists traveling on SR 24 and Broadway, occasional recreationists using the dirt access road, and residents along Skyline Boulevard and the surrounding area. The viewer sensitivity of motorists traveling on SR 24 is considered moderate. While expansive views of the park are available from this highway, due to the speed of travel and because motorists are expected to be focused on safe driving, viewer sensitivity of motorists is considered moderate. Viewer sensitivity of residents is considered moderate as residents have a higher level of concern for their surroundings and have varying degrees of visibility of the North Oakland Regional Sports Field.

### *Grizzly Peak Open Space*

The Grizzly Peak Open Space property is collectively 64.5 acres in size and is situated along the southwest side of Grizzly Peak Boulevard, southeast of Marlborough Terrace. The property generally extends between Grizzly Peak Boulevard at the top of the slope down to Bay Forest Drive, Tunnel Road, Buckingham Boulevard, and Westmoreland Drive at the slope bottom. This property consists of the following vegetation communities/land cover types: closed-cone pine cypress, coastal scrub, coastal oak woodland, eucalyptus, and urban. The property extends across a steep, southwest-facing slope and abuts residential development, community assets (communications facility), and Grizzly Peak Boulevard. The visual character of the property is defined by the property's steep slope, pine, and cypress trees mostly in the southern two-thirds of the property, and coastal scrub habitat to the north. A view of the coastal scrub habitat in the northern portion of the property is shown in **Figure 3.2-2**, Photo 3. Grizzly Peak Boulevard itself provides scenic and long-range views of the greater San Francisco Bay Area, as shown in **Figure 3.2-2**, Photo 4. The visual quality is considered moderate to high as the cypress and pine trees and overall natural setting provide visual relief from adjacent residential development. Viewer sensitivity for immediately adjacent residents is moderate to high and viewer sensitivity for motorists traveling along adjacent roads (e.g., Grizzly Peak Boulevard, Bay Forest Drive, Tunnel Road) is moderate as views of the property are brief and typically motorists are focused on long-ranging panoramic views of the San Francisco Bay and greater San Francisco Bay Area.

### *City Stables*

The City stables property is 7.4 acres and located along Skyline Boulevard. The property is dominated by grassland fuels and is largely within 10 feet from existing structures, including residences. One of the City's remote automated weather stations is situated on the property. The visual character of the property is defined by the existing stables and other structures on the site, which has low visual quality. The viewer sensitivity is also low to moderate as adjacent residents are accustomed to views of the existing stable and structures.

## City Park Lands and Open Space Areas

### *Sheffield Village Open Space*

Sheffield Village Open Space is an approximately 455.5-acre area situated at the southern end of Golf Links Road and at the northwestern end of Lake Chabot. While the property includes the Lake Chabot Golf Course, no VMP projects are proposed for this portion of the property. The

property also includes the historic Dunsmuir Estate. The property is predominantly mapped with the following vegetation communities/land cover types: annual grassland (59.4 acres), closed-cone pine-cypress (5.9 acres), coastal oak woodland (143.9 acres), coastal scrub (59.3 acres), eucalyptus (27.9 acres), perennial grassland (0.8 acre), and urban (158.1 acres). The area's visual character is defined by these various land cover types, golf course, and residential development southwest of the property. **Figure 3.2-3**, Photo 1 shows a grazed grassland and oak woodland area of this property. A steep fire access road traverses the open space site from west to east and is used by local hikers. The visual quality is moderate given the property's vast open space with varying vegetation communities. Because much of the site is not publicly accessible, aside from the fire access road traversing the site, the viewer sensitivity for local hikers is moderate. For residents adjacent to the open space area, the viewer sensitivity is considered moderate.

#### *Knowland Park and Arboretum*

Knowland Park and Arboretum is collectively 473.5 acres, extends between I-580 in the southwest and Skyline Boulevard in the northeast, and is bisected by Golf Links Road. The property includes the Oakland Zoo at the southwestern edge and a newly constructed gondola between the zoo and a hilltop near the center of the property, where an additional fenced zoo exhibit is now located. The Knowland Park and Arboretum property is mapped as the following vegetation communities/land cover types: annual grassland (102.9 acres), mixed chaparral (also known as maritime chaparral) (8.1 acres), closed-cone pine-cypress (9.1 acres), coastal oak woodland (162.0 acres), coastal scrub (61.8 acres), eucalyptus (12.1 acres), freshwater emergent wetland (0.2 acre), perennial grassland (12.5 acres), redwood (0.2 acre), and urban (104.9 acres). **Figure 3.2-3**, Photo 2 shows a grazed grassland area of Knowland Park with scattered trees. Several trails in western Knowland Park provide viewing opportunities of these vegetation communities. The visual character of Knowland Park and Arboretum is characterized by the zoo, various land cover types (mostly coast oak woodland, coastal scrub, and annual grassland), and surrounding residential development to the north and south of the park. The visual quality is moderate to high as the open space portion is largely undeveloped and comprised of various vegetation types. The viewer sensitivity is moderate for adjacent residents due to their long viewing durations and high concern about the visual setting in the immediate vicinity. Viewer sensitivity is moderate for motorists traveling along Golf Links Road due to a combination of scenic viewing opportunities of the open space area and short viewing durations. The viewer sensitivity is low to moderate for motorists traveling on I-580 as much of Knowland Park is not visible due to intervening topography and vegetation, and views are fleeting due to the speed of travel along this highway.

#### *Joaquin Miller Park*

Joaquin Miller Park is 454.9 acres in size and is situated in the southeastern portion of the VMP area. The property extends between Joaquin Miller Road in the south, Skyline Boulevard in the east, Castle Drive in the west, and the Oakland Hills ridgeline in the north. Skyline Boulevard runs along the park's western edge, then through the northern portion of the park, where it exits at the park's northern corner. The southern portion of the park is more developed and includes access roads, parking areas, the Woodminster Amphitheater, a dog park, a nursery, and several structures (including the Community Center, Ranger Station, the historic Joaquin Miller house, Sequoia Lodge, Sequoia Arena, and the Metropolitan Horseman's Association Clubhouse). The northern portion of the park is less developed but provides for public access along numerous trails and dirt roads. From the trails and dirt roads, recreationists have

immediate views of various vegetation communities (**Figure 3.2-3**, Photo 3) as well as expansive views looking toward the San Francisco Bay. Joaquin Miller Park is mapped as the following vegetation communities/land cover types: annual grassland (15.0 acres), closed-cone pine-cypress (109.3 acres), coastal oak woodland (88.0 acres), coastal scrub (5.8 acres), eucalyptus (62.0 acres), redwood (121.0 acres), urban (42.8 acres), urban (acacia) (6.6 acres), urban (mixed tree stand) (3.7 acres), and valley/foothill riparian (0.8 acre).

The visual character of Joaquin Miller Park is influenced by the developed recreational facilities in the southern portion of the park and the less developed portion to the north consisting of redwood groves, oak woodlands, meadows, and creeks. The visual quality of the northern portion of the park is considered high because of the various landscapes, views of the greater San Francisco Bay Area that can be seen from public trails, and the park's varying topography. The viewer sensitivity is high for recreationists given the park's high visual quality rating and high viewer concern. The viewer sensitivity for motorists traveling on Joaquin Miller Road and Skyline Boulevard is moderate given the mix of developed and less developed uses.

#### *King Estate Open Space Park*

The King Estate Open Space Park is collectively 81.3 acres in size and is situated southwest of I-580, south of 82nd Avenue, and bisected by Fontaine Street. The King Estate Open Space Park property is mapped as the following vegetation communities/land cover types: annual grassland (61.1 acres), coastal oak woodland (12.0 acres), coastal scrub (4.3 acres), and urban (4.0 acres). The park abuts several schools, including Howard Elementary School, the Bay Area Technology School, and the Sojourner Truth Independent Study. Views of the park are primarily available from Fontaine Street, a small segment of 82nd Avenue, and the backyards of adjacent residences. The fire roads are used by nearby residents for hiking and dog walking. Views of the San Francisco Bay and greater San Francisco Bay Area are accessible from some of these fire roads. The park's visual character is defined mostly by the annual grassland and hilly terrain (**Figure 3.2-3**, Photo 4). Given the park's undeveloped nature and surrounding residential development, the visual quality is moderate to high. Because large portions of the park are not visible from local roads and residences due to the park's rolling topography, the viewer sensitivity is moderate to high for adjacent residents and moderate for motorists traveling on Fontaine Street and a small segment of 82nd Avenue.

#### Other Open Space Areas

**Figure 3.2-4** shows typical views of open space areas, roadside treatment areas, and median areas.

#### *Blue Rock Court*

This 15.4-acre parcel is largely characterized by eucalyptus, coast oak woodland, and grassland habitats. The property is situated immediately adjacent to a residential development located north of I-580 and northwest of Blue Rock Court. Visual quality is low to moderate because of the developed nature of the surroundings. Viewer sensitivity is moderate for residents within and near Blue Rock Court and low to moderate for motorists traveling on I-580.

### *Leona Street*

This 1.9-acre area is a road extension at the east end of Leona Street. The site is characterized by eucalyptus and coastal oak woodland vegetative cover on steep terrain and surrounded by low-density residential development. Visual quality is low to moderate. Viewer sensitivity is low to moderate for nearby residents due to the slope of the site and steep terrain surrounding the site; open space area is hardly visible from nearby residences.

### *McDonnell Avenue*

This 1-acre site is an extension of a narrow street and characterized by coast oak woodland vegetative cover. Visual quality is low to moderate because of the developed nature of the surroundings. Viewer sensitivity is low to moderate because partial views are limited to a few nearby residences.

### *Mountain Boulevard Police/Safety Department Site*

This 11.3-acre parcel is characterized by eucalyptus trees and the police/safety department facility in the center of the parcel, and surrounding residences. Visual quality is low to moderate because of the developed nature of the surroundings. Viewer sensitivity is low to moderate because visibility is limited to nearby residences.

### *Tunnel Road Open Space Area*

This 4-acre parcel is on Tunnel Road and west of SR 24. Visual character is defined by the Oakland Hills Fire Memorial Park at the south end and coast oak woodland and grassland habitat present within this small hilly open space area. **Figure 3.2-4**, Photo 1 shows a typical view of this open space area from Tunnel Road. Visual quality is moderate because of the park's undeveloped nature. Viewer sensitivity is moderate for motorists driving along Tunnel Road.

### *Marjorie Saunders Park*

This 3-acre park is along Ascot Drive, southeast of Shepherd Park. Situated in the Montclair Village community, this small park is characterized by eucalyptus and coast oak woodland vegetation, the presence of a "painted rock" where local residents have painted greetings for special occasions, a rock-lined waterfall, and native plant landscaping. Visual quality is moderate because of the natural surroundings. Viewer sensitivity is moderate for adjacent residents and low to moderate for motorists.

### *Oak Knoll*

This 15.7-acre property is northeast of Mountain Boulevard and south of Keller Avenue. Largely characterized by grassland, eucalyptus, and urban land covers and surrounding residential and commercial development. Visual quality is moderate because of the undeveloped nature of the site and views available from the park. Viewer sensitivity is moderate for nearby motorists traveling on Mountain Boulevard and Keller Avenue.

### Roadside Treatment Areas and Medians

As described in Chapter 2, the City manages vegetation along 308 miles of City roads within the VMP area and medians (5.7 acres). Examples of priority 1 treatment roads throughout the VMP

area include Grizzly Peak Boulevard, Skyline Boulevard, Shepherd Canyon Road, Joaquin Miller Road, Monterey Boulevard, Redwood Road, Keller Avenue, and Golf Links Road. These roads traverse multiple parcel types, including urban and residential areas, open space/park areas, canyon areas, and ridgetop areas. **Figure 3.2-4**, Photos 2 and 3 show typical views of roadside treatment areas along Golf Links Road and Joaquin Miller Road. As many of the roadside treatment areas are adjacent to the above-described parcel types, in general, the visual quality of these roads generally varies from moderate to high.

### 3.2.2 Regulatory Setting

There are no federal laws or regulations that are applicable to aesthetics in relation to the VMP. This subsection discusses state and local laws and regulations that pertain to aesthetics for the VMP.

#### ***State Laws, Regulations, and Policies***

##### California Scenic Highway Program

In 1963, the state legislature established the California Scenic Highway Program, contained in Streets and Highways Code Sections 260 et seq., to preserve and enhance the natural beauty of California (California Department of Transportation [Caltrans] 2020). The State Scenic Highway System includes designated scenic highways and those that are eligible for designation as scenic highways.

Within the VMP area, I-580 is an officially designated highway from the city limits of San Leandro to SR 24. In addition, SR 13 between SR 24 and I-580 (the MacArthur Freeway) is considered eligible for listing as a state scenic highway. Just outside of the VMP area, the portion of SR 24 east of the Caldecott Tunnel is designated as a state scenic highway.

#### ***Local Laws, Regulations, and Policies***

##### City of Oakland General Plan

The Scenic Highways Element (City of Oakland 1974) of the *Oakland Comprehensive Plan* considers the MacArthur Freeway (I-580), Skyline Boulevard, Grizzly Peak Boulevard, and Tunnel Road as scenic routes within the City's limits. Policies related to protection of scenic resources along the MacArthur Freeway that are pertinent to the VMP include the following:

2. Visual intrusions within the scenic corridor should be removed, converted, buffered, or screened from the motorist's view.
3. Panoramic vistas and interesting views now available to the motorist should not be obliterated by new structures.

Specific policies related to Skyline Boulevard/Grizzly Peak Boulevard/Tunnel Road and that are also relevant to the VMP include the following:

2. Critical stretches of open space should be left intact, preserving visual continuity within the scenic corridor.

3. Grading of land and the clearing of vegetation should be kept to an absolute minimum on the properties adjacent to the scenic route.
5. Effort should be made to retain undeveloped areas that perpetuate the full range of plant types, plant communities and wildlife variety found in Oakland.
6. As much as feasible, wooded tracts of open land should be preserved with only careful inroads for development allowed.
7. The removal of large live trees, wherever they occur, should be avoided for desirable species of trees.

#### North Oakland Hill Area Specific Plan

The 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 with a goal to enhance and protect scenic views of the region: "Traveling along the winding scenic route, the driver, cyclist, or jogger is enclosed and shaded by forest and then, with a change in plant cover to low-growing scrub, bathed in light and presented with glorious Bay views."

### **3.2.3 Impact Analysis**

#### ***Methodology***

This subsection evaluates whether the VMP would result in significant impacts related to aesthetic resources. The significance criteria listed below were used to evaluate the VMP's effects on aesthetic resources in comparison to the existing baseline condition. The visual analysis is based on evaluations of ground-based photographs of the vegetation treatment areas, Street View by Google Maps, and visual simulations of select treatment areas included in the VMP (provided in Appendix A of this DEIR).

Visual effects were assessed based on the VMP's potential to have an adverse effect on scenic vistas, substantially damage views from scenic highways, or degrade the visual character or visual quality of a VMP treatment area. The evaluation of temporary or short-term visual impacts considers whether vegetation management activities could substantially degrade the existing visual character or quality of the site or surrounding area, as well as the duration over which any such changes would occur.

Actions with long-term visual effects, such as removing or thinning trees and other vegetation, can permanently alter the landscape in a manner that could affect existing scenic resources and the visual character or quality of the area, depending on the perspective of the viewer. In determining impact potential, the assessment considers the viewer sensitivity of the treatment areas.

### ***Criteria for Determining Significance***

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

- Have a substantial adverse effect on a public scenic vista;
- Substantially damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings located within a state or locally designated scenic highway;
- If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality; or
- Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area.

### **Issues Not Evaluated Further**

The following significance criterion is dismissed from further analysis for the reasons described below.

- **Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area.** Vegetation management activities would occur during daytime hours and would not require any nighttime lighting. Once completed, the treatments themselves would not introduce a new source of light or glare. Thus, no impact would occur.

### ***Environmental Impacts***

#### **Impact AES-1: Substantial Adverse Effects on Public Scenic Vistas (*Less than Significant with Mitigation*)**

An adverse effect on the visual quality of a public scenic vista is generally most substantially adverse when viewed at a scale proportional to the scale of the activity resulting in the impact. For instance, large-scale removal of trees or shrubs may not appear significant from up close but would be more noticeable from a distance or in the context of a scenic vista. Similarly, small-scale shrub or tree removal could be perceived as a substantial adverse effect within close-range views but, when viewed from afar in the context of a scenic vista, such changes would likely be unnoticeable.

Within the VMP area, Grizzly Peak Boulevard, particularly the segment close to the Caldecott Tunnel, is often used as a scenic viewing area by motorists and recreationists as this road provides long-range views of the San Francisco Bay and greater Bay Area. Trails and fire access roads within some of the VMP treatment areas also provide scenic viewing opportunities of the Bay Area (e.g., trails within Joaquin Miller Park, King Estates Park, and the dirt access road in North Oakland Sports Field).

Proposed vegetation management activities that would occur throughout VMP treatment areas include hand labor, mechanical treatments, grazing, and herbicide treatments. Because vegetative conditions vary across treatment areas, multiple treatment methods would be employed at any given area, and treatment activities would be prioritized and phased over a 10-year timeframe, the likelihood of any one vegetation management activity occurring over a large enough area to have a substantial adverse effect on a scenic vista is minimal. The following VMP treatment projects would involve larger scale removal of trees and shrubs that could be noticeable from scenic vistas: NOR-1, NOR-2, NOR-3, GPO-1, and JMP-1. Potential effects on scenic vistas at these treatment areas are described in detail below.

#### North Oakland Sports Field (NOR-1, NOR-2, and NOR-3)

NOR-1, a priority 1 project at the North Oakland Sports Field, would involve thinning/removal of eucalyptus (12.06 acres), coast oak woodland (5.11 acres) and coastal scrub (0.47 acre) across a 21.51-acre total area using both mechanical and hand removal techniques. Such activities would be focused along the dirt access road, within 300 feet of ridgelines, and near the park's access gate. Mature eucalyptus stands would be thinned to ensure 35-foot horizontal spacing between trunks, and second-growth eucalyptus stands would be thinned to reach an average 25-foot spacing between trunks. Smaller trees, shrubs, grasses, and/or eucalyptus seedlings/saplings would be removed to achieve vertical separation between the top of surface fuels and lowest tree branch. The oak woodland stand in the southern portion of NOR-1 would be managed to create vertical separation between the top of surface fuels and the lowest tree branch. NOR-2 is a priority 2 project that would involve removal of 7.76 acres of eucalyptus in the northern portion of the property not addressed by NOR-1. NOR-3, a priority 3 project, would involve removing eucalyptus and other highly flammable species and invasive plants from oak woodland communities across an 18.65-acre area in the southern half of the property. Similar management standards described above for NOR-1 would also be applied at NOR-2 and NOR-3.

As noted previously, scenic views of the greater Bay Area are accessible from the fire access road along the ridgeline in the southern portion of the property, which is used by hikers and dog walkers. While the thinned eucalyptus stands could be seen from this viewpoint, the dominant vegetation types throughout this treatment area (mostly eucalyptus and oak woodland) would remain. Proposed thinning of eucalyptus stands and understory vegetation would reduce the density of these trees and other flammable vegetation but would not entail removing large swaths of trees. In addition, given the expansiveness of these treatment projects, activities would be phased over multiple years where 3-5 acres are thinned at a time; this would also spread out the effect on views from this vista point. However, because of the relatively large scale of tree removal proposed at North Oakland Sports Field, tree removal activities at this recreation area could have an adverse effect on the scenic vista from the ridgeline's access road. Implementation of **Mitigation Measure AES-1 (Conduct Visual Reconnaissance Prior to Implementing Tree Removal Activities to Determine if Vegetation Relocation or Thinning of Publicly Visible Treatment Areas is Necessary)** would require the City to conduct a visual reconnaissance of the treatment areas prior to conducting VMP activities to determine visibility of proposed treatments and, if determined necessary, potentially modify the location of tree removal activities or thin adjacent vegetation of the treatment area to reduce the visibility of removed vegetation from public viewpoints. The phasing of treatments VMP treatment projects NOR-1, NOR-2, and NOR-3 in combination with implementation of Mitigation Measure AES-1 would ensure that effects on scenic vistas would be less than significant.

### Grizzly Peak Open Space (GPO-1)

GPO-1, a priority 1 project, would involve removing closed-cone pine cypress vegetation (12.29 acres), coast oak woodland (1.62 acres), coastal scrub (10.37 acres), and eucalyptus (2.83 acres) using hand labor techniques due to the steepness of the property. This work would be focused within 100 feet of structures, 300 feet of ridgelines, and 30 feet of Tunnel Road and Bay Forest Drive. Treatments for closed-cone pine cypress would involve thinning mature trees to obtain 30-foot horizontal spacing between trunks and removal of small trees, shrubs, grasses, and invasive species beneath tree canopies to create vertical separation between the top of surface fuels and the lowest tree branch. Coastal scrub vegetation would be managed to remove dead and dying scrub and thin shrub crowns to achieve horizontal separation from adjacent shrubs, shrub groupings, or trees. The treatments for eucalyptus would be the same as those described above for North Oakland Sports Field projects.

Scenic views of the greater Bay Area are accessible from Grizzly Peak Boulevard, which abuts the northern portion of GPO-1. As Grizzly Peak Boulevard is at the ridgeline and sits above the open space area, tree-thinning activities would not substantially affect long-ranging views of the Bay Area. If anything, removal of trees immediately adjacent to the road would open up views looking toward the Bay. Effects on scenic vistas at GPO-1 would be less than significant.

### Joaquin Miller Park (JMP-1)

JMP-1 is a priority 1 project encompassing 117.32 acres that would involve managing various vegetation types within 100 feet of structures, 300 feet of ridgelines, 150 feet of park access gates, and congregation/activity areas along Skyline Boulevard and the top of Woodside Glen Court. Hand labor techniques would be applied for all tree removal activities within closed-cone pine cypress, eucalyptus, redwood, and urban vegetation types. The management standards would be similar to those described above for the North Oakland Sports Field and Grizzly Peak Open Space projects.

Within Joaquin Miller Park, views of most trails are limited to trees and vegetation immediately adjacent to the trail. However, some trails, such as the Sequoia-Bayview Trail, offer long-range views of the greater Bay Area. Proposed vegetation management activities may be noticeable from the Sequoia-Bayview Trail and other trails with scenic vistas, but such activities are not expected to substantially impair long-range views of the Bay Area. As with GPO-1, removal of select trees could potentially expand scenic views of the Bay Area. Nonetheless, the removal of trees could be perceived as an adverse effect on immediate views from certain vantage points along trails in Joaquin Miller Park. This would be a potentially significant impact.

Implementation of **Mitigation Measure AES-1**, which requires a visual reconnaissance and, if necessary and feasible, actions that reduce the treatment area's visibility from public viewpoints would reduce effects on scenic vistas within Joaquin Miller Park to less than significant.

### Mitigation Measures

#### **Mitigation Measure AES-1: Conduct Visual Reconnaissance Prior to Implementing Tree Removal Activities to Determine if Vegetation Relocation or Thinning of Publicly Visible Treatment Areas is Necessary**

The City will conduct a visual reconnaissance of VMP treatment areas involving tree thinning and removal to observe the surrounding landscape and determine if vegetation

management activities will have a significant effect on scenic vistas, public trails, or scenic routes that have views of the treatment area. If none are identified, treatments may be conducted without additional mitigation.

If the City identifies that public viewing points such as public trails or recreation areas with extended views of a VMP treatment area would be significantly affected, prior to conducting vegetation treatment activities, the City will identify opportunities to potentially modify the location of tree removal activities to reduce the visibility of removed vegetation from public viewpoints. If no changes are feasible without compromising the intended vegetation management standards and goals described in the VMP, the City will thin adjacent vegetation to break up the linear edges of treatment areas and reduce the contrast between the treatment area and surrounding vegetation.

### Conclusion

Based on the above descriptions, vegetation management activities proposed at most VMP treatment areas would not obstruct or substantially degrade views from scenic vistas. Large-scale tree removal and thinning activities proposed at North Oakland Sports Field (NOR-1, NOR-2 and NOR-3) and Joaquin Miller Park (JMP-1) could degrade views from scenic vistas. Implementation of Mitigation Measure AES-1 would require that a visual reconnaissance occurs prior to reconnaissance of the treatment areas prior to conducting VMP activities to determine visibility of proposed treatments and, if necessary and feasible, a change in the location of tree removal actions to an area less publicly visible or thin vegetation surrounding the treatment area. With implementation of Mitigation Measure AES-1, the impact on scenic vistas would be **less than significant with mitigation**.

### **Impact AES-2: Substantial Damage to Scenic Views, Including Those within a State or Locally Designated Scenic Highway (*Less than Significant with Mitigation*)**

Within the VMP area, the State of California has identified I-580 from the city limits of San Leandro to SR 24 as an officially designated state scenic highway. SR 13 between SR 24 and I-580 is considered eligible for listing as a state scenic highway.

### Effects on Views from I-580

VMP treatment areas that are near I-580 include Blue Rock Court, Oak Knoll, King Estate Open Space Park, and Sheffield Village Open Space. Blue Rock Court is partially visible from I-580 to the east, although mature trees lining the highway partially screen views from I-580. Oak Knoll, another residential area, is partially visible from this highway but partially screened by mature vegetation along the highway and a retaining wall. Views of King Estate Open Space Park are largely screened by intervening topography and mature vegetation between the highway and open space park. Similarly, views of Sheffield Village Open Space are largely screened by constructed landforms and development between the highway and open space area. For treatment areas that are partially visible from I-580, limited vegetation management activities that could be seen range from goat grazing to tree and shrub removal using both hand removal and mechanical techniques. Tree and shrub removal activities proposed in these areas would occur in discrete locations (i.e., within 100-300 feet of structures) for fire reduction purposes and would not remove broad swaths of trees and shrubs. Because views of these treatment

areas would be largely screened by existing development, topography, or vegetation and any limited views of proposed vegetation management activities would be short in duration due to the high speed of travel along I-580, proposed vegetation management activities would not substantially damage views from this scenic highway.

### Effects on Views from SR 13

Some of the roadside treatment projects west of SR 13 (e.g., Monterey Road) and treatments at Joaquin Miller Park closest to the highway may be partially visible from this portion of SR 13. However, mature trees along SR 13 provide visual screening of views looking toward these treatment areas. Additionally, due to the high speed of travel along SR 13, vegetation management activities proposed within these treatment areas would hardly be noticeable to motorists traveling on SR 13. Therefore, vegetation management activities proposed near SR 13 would not damage views from this highway.

### Effects on Views from Skyline Boulevard, Grizzly Peak Boulevard, and Tunnel Road

The Scenic Highways Element (City of Oakland 1974) of the Oakland Comprehensive Plan considers the I-580, Skyline Boulevard, Grizzly Peak Boulevard, and Tunnel Road as scenic routes within the City's limits. Impacts to views from I-580 are discussed above. The following discussion describes the VMP's effects and potential conflicts with policies protecting views along Skyline Boulevard, Grizzly Peak Boulevard and Tunnel Road.

#### *Skyline Boulevard*

Skyline Boulevard provides long-ranging scenic views of the San Francisco Bay, greater East Bay Area, and San Francisco County. Below is a description of VMP treatment areas visible from Skyline Boulevard.

- **Skyline Boulevard at Urban/Residential Parcels.** Several priority projects on urban/residential parcels (less than 1 acre) are located immediately adjacent to Skyline Boulevard. The majority of these VMP projects are interspersed within developed residential parcels and do not provide long-range views of the Bay Area. Under the VMP, the dominant vegetation types within these parcels would remain. As these VMP projects are small in scale and scattered throughout the VMP area and often adjacent to parcels that would not be treated, vegetation management activities proposed at urban/residential parcels near Skyline Boulevard would not substantially damage views from this scenic route. Nonetheless, limited tree removal immediately adjacent to Skyline Road could be perceived as an adverse visual effect. Implementation of Mitigation Measure AES-1 would reduce this effect to a less-than-significant level.
- **Skyline Boulevard at Joaquin Miller Park.** In general, the portion of Skyline Boulevard that passes through Joaquin Miller Park offers mostly short-range views of mature trees and vegetation. Treatment projects located adjacent to Skyline Boulevard within Joaquin Miller Park would be visible from this road. Some long range-range views are available from Skyline Boulevard as it passes through Joaquin Miller Park in a few locations. Vegetation treatment within 300 feet of the ridgeline in Joaquin Miller Park may open up views of the Bay Area from these locations. While large swaths of trees would not be removed from treatment areas along this segment of Skyline Boulevard,

tree removal could be perceived as an adverse visual effect. Implementation of Mitigation Measure AES-1 would reduce this effect to a less-than-significant level.

- **Skyline Boulevard at Knowland Park.** As Skyline Boulevard passes through Knowland Park, treatment areas immediately adjacent to the road would be visible. Other treatment areas within Knowland Park are largely blocked due to topography. Proposed thinning of eucalyptus stands and understory vegetation immediately adjacent to Skyline Boulevard would reduce the density of these trees and other flammable vegetation but would not entail removing large swaths of trees. Nonetheless, tree removal activities could be perceived as an adverse effect. Implementation of Mitigation Measure AES-1 would reduce this impact to a less-than-significant level.

#### *Grizzly Peak Boulevard*

Scenic views of the greater Bay Area are accessible from Grizzly Peak Boulevard. As Grizzly Peak Boulevard is at the ridgeline and sits above the Grizzly Peak open space area, tree-thinning activities within Grizzly Peak Open Space would not substantially affect long-ranging views of the Bay Area. If anything, removal of trees immediately adjacent to the road would open up views looking toward the Bay. Treatment areas within North Oakland Sports Field would also be visible from portions of Grizzly Peak Boulevard, although the majority of treatment areas are on slopes that are less visible from this vantage point. The dominant vegetation types throughout the North Oakland Sports Field (mostly eucalyptus and oak woodland) would remain. Proposed thinning of eucalyptus stands and understory vegetation would reduce the density of these trees and other flammable vegetation but would not entail removing large swaths of trees. In addition, given the expansiveness of the treatment projects within the North Oakland Sports Field, vegetation management activities would be phased over multiple years which would also spread out the effect on views from Grizzly Peak Boulevard. Nonetheless, tree removal activities could be perceived as an adverse visual effect. Implementation of Mitigation Measure AES-1 would ensure that treatment activities at North Oakland Sports Field and Grizzly Peak Open Space would not substantially degrade scenic views from Grizzly Peak Boulevard.

#### *Tunnel Road*

Similar to Grizzly Peak Boulevard, treatment activities proposed along Tunnel Road may open up views towards the Bay. A small portion of treatment areas within Grizzly Peak Open Space would be visible from Tunnel Road. While treatments are not anticipated to substantially damage views from this road, tree removal could be perceived as an adverse visual effect. Implementation of Mitigation Measure AES-1 would ensure that treatment activities along Tunnel Road would not substantially degrade scenic views from this road.

#### Conclusion

The impact on views from scenic highways and scenic routes would be **less than significant with mitigation.**

### **Impact AES-3: Short-term Degradation of Visual Character or Quality of Public Views (*Less than Significant with Mitigation*)**

Proposed vegetation management activities would have varying effects on visual character or quality of public views. The following impact discussion focuses on the short-term aesthetic effects of treatment activities proposed under the VMP while the activities are being conducted.

#### Grazing

Similar to existing conditions, goat grazing would be used to reduce fine fuel loads in grasslands and brushlands and beneath tree canopies at the following areas: King Estate Open Space Park, Joaquin Miller Park, Knowland Park, Sheffield Village Open Space, and Shepherd Canyon. This technique would also be used at Leona Heights Park, Beaconsfield Canyon, North Oakland Sports Field, roadside treatment areas and medians, and other small open space areas. Goat grazing would be temporary and intermittent at each treatment area, and would occur during the late spring to end of summer. The presence of goats, temporary fencing to keep them contained, and water troughs for the goats may be visible for a short duration to motorists passing by, nearby residents, and other recreationists. Because goats are not uncommon in natural landscapes, this activity would have limited visual intrusiveness on public views. Therefore, goat grazing activities would not substantially degrade the visual character or quality of views of the VMP treatment areas.

#### Mechanical and Hand Labor Treatments

During hand labor and mechanical vegetation treatment activities, hand-held and large mechanical equipment such as chainsaws, loppers, tractors, and other vehicles would be used with attachments intended to cut, uproot, crush/compact or chop vegetation. Hand labor treatment activities would not substantially alter the visual character or quality of an area due to the small size of hand-held equipment. Mechanical treatment activities would involve larger equipment than hand labor treatments but would typically be completed in a shorter duration than hand labor treatments as work would occur at a faster pace. Treatment activities for grass fuel types would be relatively faster than those associated with shrub or tree fuel types. Both hand labor and mechanical treatment activities already occur on an annual basis along roadside treatment areas; thus, many residents and other sensitive viewers are accustomed to seeing these activities. However, because the scale of these activities would increase under the VMP, the presence of large equipment and workers could contrast with the surrounding environment and temporarily degrade the visual character or quality of some VMP treatment areas. This impact would be potentially significant. Implementation of **Mitigation Measure AES-2 (Staging)** would ensure that equipment and materials are staged on access roads or already disturbed areas and not on major roadways. This mitigation measure would help minimize the visibility of vegetation management activities from public roadways. With implementation of Mitigation Measure AES-2, potential effects on visual character or visual quality of public views in VMP treatment areas would be less than significant with mitigation.

#### Herbicides

Under the VMP, herbicides would be applied by hand only. Where large eucalyptus and acacia trees have been removed, the cut-and-daub treatment would be applied primarily on the freshly cut stump or stem of such trees to reduce the need for ongoing maintenance. A backpack sprayer would be used to apply herbicides directly onto highly flammable/rapidly spreading

(including such plants as French broom, Scotch broom, pampas grass, and jubata grass). For both herbicide treatment methods, only 2-3 personnel would be on-site at any given treatment area. This treatment activity would also be temporary at any given location and limited to controlling plant growth as described above. For these reasons, herbicide application activities would not substantially degrade the visual character or visual quality of public views in VMP treatment areas. This impact would be less than significant.

### Mitigation Measures

#### **Mitigation Measure AES-2: Staging (VMP BMP GEN-4)**

To the extent feasible, staging will occur on access roads, surface streets, or other disturbed areas that are already compacted and support only ruderal vegetation. Similarly, all vegetation management equipment and materials will be contained within the existing service roads, paved roads, or other predetermined staging areas. Staging areas for equipment, personnel, vehicle parking, and material storage will be sited as far as possible from major roadways.

### Conclusion

Short-term effects on visual character and visual quality due to grazing, hand labor, and herbicide treatment activities would be less than significant. Use of large, heavy equipment for mechanical treatment activities could temporarily degrade the visual character or quality of a treatment area, but implementation of Mitigation Measure AES-2 would reduce this impact to **less than significant with mitigation**.

#### **Impact AES-4: Long-term Degradation of Visual Character or Quality of Public Views (*Less than Significant with Mitigation*)**

In describing the intent of the VMP and its proposed treatment activities, Chapter 2, *Project Description*, states that the goal of vegetation management in the VMP is not the wholesale removal of all vegetation or conversion of vegetation type; rather, the VMP proposes targeted vegetation management activities to minimize the potential for ignitions, crown fires, and extreme fire behavior; create potential fire breaks; and retain safe evacuation routes. This is accomplished by reducing fuel loads; maintaining those conditions; and altering the structure, composition, and spacing of retained vegetation. **Figure 3.2-5 through Figure 3.2-7** depict existing and simulated post-treatment views of representative treatment activities.

As noted in Section 3.2.1, “Environmental Setting,” and summarized in Table 3.1-1, the VMP treatment areas vary by landform (i.e., steep canyons, ridgetops, hilly open space areas) and have a mixture of dominant vegetation/land cover types, including annual grasslands, coastal scrub, coast oak woodland, eucalyptus, closed-cone cypress, redwood, acacia, and a mixture of other urban tree species among other vegetation types. The visual character of each VMP treatment area is characterized by these varying landforms and mixture of dominant vegetation types, and they generally have moderate to high visual quality as these natural settings are mostly undeveloped and provide pleasing visual contrast to the surrounding residential/urban development throughout the VMP area.

In many cases, public views of the treatment areas would be available only at foreground viewing distances (approximately 0.25 mile or less) from trails, roads, and residences. Steep and

hilly terrains in canyons and other open space areas limit the viewing distance of several treatment areas such as King Estates Open Space, Dimond Canyon Park, Beaconsfield Canyon, Leona Heights Park, and other treatment areas. Some treatment areas, such as the North Oakland Sports Field and Grizzly Peak Open Space, are visible from SR 24 but such views would be short in duration due to the speed of travel along this highway. Similarly, partial views of Knowland Park and Arboretum, Sheffield Village Open Space, and Oak Knoll are available from I-580, although largely obscured by intervening trees and development, and are fleeting due to the speed of travel.

The following impact discussion focuses on the long-term aesthetic effects of treatment activities proposed under the VMP after treatment activities have been completed.



**Existing Condition.** Area above the dirt access road within the proposed 30-foot roadside treatment area at North Oakland Sports Field.



**Visual Simulation.** Simulated condition of the 30-foot roadside treatment area along the dirt access road in North Oakland Sports Field (Treatment Project NOR-1). Area treated to remove all but the dominant tree trunk for multi-trunk trees; surface vegetation treated to remove ladder fuels and retain some shrubs and non-flammable trees. Subsequent treatments would be necessary to achieve 25-foot spacing between retained trees.

Source: Dudek 2019

**Figure 3.2-5. Existing Condition and Visual Simulation of NOR-1 at North Oakland Sports Field.**



**Existing Condition.** Area along Grizzly Peak Boulevard looking west.



**Visual Simulation.** Simulated condition of the roadside along Grizzly Peak Boulevard treated to thin brush density, remove flashy fuels (grasses/weeds), remove pyrophytic trees, and provide horizontal (ladder fuels) and vertical separation between well-spaced retained trees (Treatment Project GPO-1).

Source: Dudek 2019

**Figure 3.2-6. Existing and Visual Simulation of GPO-1 at Grizzly Peak Open Space.**



**Existing Condition.** Area along the west side of Shepherd Canyon Road, looking west.



**Visual Simulation.** Simulated condition of the roadside treatment area along Shepherd Canyon Road treated to remove broom understory, apply surface mulch, prune select lower limbs to remove ladder fuels, mow weeds along roadside edge. Future treatments would be required to achieve a desired 35-foot spacing between retained trees. The simulation shows the interim treatment, allowing for retained trees to become more wind-firm before additional thinning occurs.

Source: Dudek 2019

**Figure 3.2-7. Existing and Visual Simulation of SHP-2 at Shepherd Canyon Park.**

### Grazing

As described above in Impact AES-3, goat grazing would primarily occur in grasslands and brushland environments and beneath tree canopies to reduce fine fuel loads. Under baseline conditions, this technique has been utilized by the City to manage fire fuels on approximately 900 acres annually over the last 15 years. Under the VMP, goat grazing would be utilized on a total of approximately 1,100 acres across multiple treatment areas over the 10-year VMP period. Goats browse on woody vegetation (tree leaves, twigs, vines, and shrubs) and consume materials up to 6 feet above the ground. Once goat grazing is completed in the summer or fall season, some sensitive viewers with close-up views of a parcel may notice that vegetation has been reduced; however, such a change would be minor in scale and would not substantially alter the visual character of an area. Because vegetation within treated areas would grow back and goat grazing is an ongoing activity throughout the VMP area, this treatment technique would not substantially degrade the visual character or quality of VMP treatment areas in the long term.

### Mechanical and Hand Labor Treatments

Once completed, mechanical and hand labor treatment activities proposed for shrub and tree removal would have varying effects on the visual character and quality of VMP treatment areas. Under the VMP, the levels of vegetation thinning activities would be determined according to vegetation management standards and goals established to remove flammable vegetation and reduce fire hazard risks. Treatment activities would also be prioritized whereby priority 1 projects would focus on managing vegetation within 100 feet of structures to provide defensible space for existing structures, 30 feet from roadside edges along major access/egress routes to reduce potential for wildfires generated by human activity, and within 300 feet of ridgelines to reduce fuel loads and ladder fuels where high and erratic winds have potential to occur. In shrub-dominant communities, priority 1 projects would typically involve removing all dead and dying brush/scrub, removing shrubs to create horizontal separation among other adjacent shrubs, and thinning shrubs to create vertical separation between the top of the shrub and the lowest tree branches. As another example, in eucalyptus and closed-cone pine-cypress stands, proposed management standards would focus on thinning mature tree stands to achieve horizontal spacing between trunks and removing understory growth of small trees, grasses, and other highly flammable species beneath tree canopies to create vertical separation between the top of surface fuels and the lowest tree branch. Refer to Chapter 2, Section 2.3.3, "Vegetation Management Standards," for a summary of the VMP's management standards and goals; refer to Section 9.1 of the VMP (Appendix A of this DEIR) for a complete description of management standards and goals by dominant vegetation type. It is important to note that, by conducting vegetation management activities in accordance with these management standards, the VMP would not completely eliminate dominant vegetation types or large swaths of trees in any given treatment area.

**Effects on Visual Character and Visual Quality from Foreground Views.** As part of the VMP, visual simulations were prepared for select treatment projects proposed at the North Oakland Regional Sports Field, Grizzly Peak Open Space, and Shepherd Canyon Park. Existing and simulated conditions of the following treatment projects are presented in **Figure 3.2-5** through **Figure 3.2-7**: NOR-1, GPO-1, and SHP-2. The long-term changes to visual character and visual quality at each of these treatment areas are described below.

- **VMP Treatment Project NOR-1.** One component of VMP treatment project NOR-1 would involve managing eucalyptus stands within 30 feet of the dirt access road at the North Oakland Sports Field. As shown in **Figure 3.2-5**, eucalyptus stands would be thinned to remove all but the dominant tree trunks for multi-trunk trees. Surface vegetation beneath the eucalyptus trees would also be managed to remove ladder fuels while retaining some shrubs and lower fire risk trees. From the perspective shown in **Figure 3.2-5**, vegetation and tree thinning along the dirt access road would result in a minor or moderate visual change and could be noticeable to hikers and other recreationists who use this road frequently. Because the larger and more mature eucalyptus trees would remain intact, the visual character and visual quality of the site would not substantially change from this perspective. Over time, the thinned understory would fill in with successional vegetation. Successional vegetation is anticipated to be similar in species composition to the vegetation at the treatment location prior to treatment, with the exception of areas that are actively revegetated. Removing select understory vegetation would potentially improve the visual conditions along this access road over time.
- **VMP Treatment Project GPO-1.** Under VMP treatment project GPO-1, one management action would involve thinning of shrubs, weeds, and grasses along Grizzly Peak Boulevard, removing some lower fire risk trees, and providing horizontal and vertical separation between retained trees. As shown in **Figure 3.2-6**, these actions would result in a moderate change but views of the slope below Grizzly Peak Boulevard would remain intact as this activity would merely reduce the density of vegetation surrounding shrubs. While such actions may be perceptible to adjacent residents who are accustomed to viewing this treatment areas, such actions would not be readily noticeable to motorists passing by. Because coastal shrubs would remain the dominant vegetative community, proposed treatment activities would not substantially degrade the visual character or quality of this treatment area.
- **VMP Treatment Project SHP-2.** Under VMP treatment project SHP-2, roadside treatment activities along Shepherd Canyon Road would involve removing French broom understory, pruning select lower limbs to remove ladder fuels, and mowing weeds along the roadside edge. This particular simulation shows an interim treatment; additional treatments would be necessary to achieve 35-foot spacing between retained trees. The interim treatment activities would allow retained trees to become more wind-firm before additional thinning activities would occur. As shown in **Figure 3.2-7**, along this segment of Shepherd Canyon Road, mature eucalyptus trees would remain in place, and the thinning of understory vegetation would not substantially degrade the visual character or quality of this stretch of road. Rather, such actions would clean up and improve the visual conditions of this roadside treatment area.

The simulations presented in **Figure 3.2-5** through **Figure 3.2-7** show select examples of how the visual character and quality of views would change in the immediate foreground of treatment projects NOR-1, GPO-1, and SHP-2. While visual character and quality vary from site to site, the same management recommendations by dominant vegetation type (in addition to other standards described in Section 9.1 of the VMP [Appendix A of this DEIR]) would apply across the VMP treatment areas. Such standards are intended to reduce fuel loads, composition, and

spacing of retained vegetation and not necessarily to remove all vegetation within treatment areas.

Within some open space areas and parks, such as Joaquin Miller Park (e.g., project JMP-1), the VMP proposes thinning of trees and understory vegetation near public trails and park access gates. Although large trees and other vegetation would remain in VMP treatment areas, less vegetation would be present where mechanical and manual tree removal occurs. Given the high viewer sensitivity from public trails and high volume of recreationists at Joaquin Miller Park, there could be an adverse visual impact to the existing visual character and quality of views from some trails in this park as views tend to be extended for recreationists. Similarly, removal or pruning of large trees adjacent to other public trails throughout the VMP area could be perceived as an adverse visual effect to recreationists. As a result, the visual character and visual quality could be degraded in select areas throughout the VMP area. This is a potentially significant impact. Implementation of Mitigation Measure AES-1 would reduce this impact to a less-than-significant level.

**Effects on Visual Character and Visual Quality from Middle Ground Views.** Some treatment areas, including the North Oakland Sports Field and Grizzly Peak Open Space, would be visible from middle ground distances from eastbound SR 24, other nearby roads, and residences south of these treatment areas. As noted previously, vegetation management activities within these two treatment areas would involve thinning of trees and vegetation in select areas (e.g., within 30 feet of access roads and 300 feet of ridgelines) to reduce the fire hazard risks. Selective thinning of eucalyptus, pine, and Monterey cypress trees in these areas (in accordance with management recommendations for VMP treatment projects GPO-1, GPO-2, NOR-1 and NOR-2) would result in moderate permanent changes in the existing visual character of the landscape as the tree densities would be reduced. At a large scale, these actions could be more noticeable from middle ground distances, such as from eastbound SR 24, nearby roads, and residences south of the North Oakland Sports Field and Grizzly Peak Open Space. As described in Chapter 2, *Project Description*, Table 2-6, the City estimates the maximum amount of manual tree removal activities would be 20 acres per year and the maximum amount of mechanical tree removal activities would be 5 acres per year. Given the size of the treatment areas within the North Oakland Sports Field and Grizzly Peak Open Space, it is anticipated that mechanical and hand labor tree removal activities would be phased over the VMP's 10-year timeframe; thus, visual changes to the altered landscape would also occur in a phased manner. Over time, other understory vegetation anticipated to be similar in species composition to pre-treatment conditions would grow to fill in the areas where vegetation has been removed. For these reasons and because large trees would remain where thinning occurs (in accordance with horizontal spacing requirements imposed by the VMP's management standards), impacts on middle ground views from mechanical and hand labor tree and shrub removal activities would not result in a long-term, substantial degradation of the existing visual character or visual quality at the North Oakland Sports Field and Grizzly Peak Open Space.

### Herbicides

As described above in Impact AES-3, herbicide application would be limited in scope and would primarily occur in areas where eucalyptus and acacia trees have been removed and to limit or reduce plant growth and plant coverage of surface fuels (including such plants as French broom, Scotch broom, pampas grass, and jubata grass). Herbicides would be applied to the cut stump or stems of secondary-growth eucalyptus and acacia trees to reduce the need for ongoing

maintenance. As noted in Chapter 2, *Project Description*, Table 2-6, this treatment would be limited to 20 acres per year. Therefore, because the scope of herbicide application would be limited to controlling the growth and cover of specific trees that have already been removed and on select highly flammable/rapidly spreading plants within treatment areas, herbicide application activities alone would not substantially alter or degrade the long-term visual character or quality of public views.

#### Mitigation Measures

See text in Impact AES-1 above.

#### Conclusion

Based on the discussion above, long-term effects of VMP activities on visual character and quality would be **less than significant with mitigation**.

### 3.3 AIR QUALITY

This section describes the existing air quality conditions in the study area, which includes the VMP area and the San Francisco Bay Area Air Basin (SFBAAB). This section also describes the relevant air quality regulations, air quality significance criteria, methodology used to evaluate impact significance, and the VMP's resulting air quality impacts. This section also describes mitigation measures that would reduce potentially significant air quality impacts. Detailed information about the assumptions and modeling results discussed in this section are provided in **Appendix C, Air Quality/Greenhouse Gas/Energy Calculations**, of this DEIR.

#### 3.3.1 Environmental Setting

##### *Study Area*

The study area consists of the locations where physical actions associated with the VMP would take place. This area is located within the SFBAAB, which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The study area for air quality impacts is evaluated at both local and regional scales. Air quality at the local scale involves evaluating the potential for local "hot spots" to result in areas adjacent to anticipated VMP treatment sites due to emissions of pollutants of local concern, including carbon monoxide, particulate matter, and toxic air contaminants. Air quality at the regional scale involves evaluating air pollutants of regional concern such as ozone, ozone precursors, and particulate matter.

##### *San Francisco Bay Area Air Basin*

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic air drainage features. The SFBAAB, managed by BAAQMD, comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, as well as portions of Solano and Yolo Counties. Air quality is determined by natural factors such as climate, topography, and meteorology, in addition to the presence of air pollution sources and ambient conditions.

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, all of which distort normal wind flow patterns. The Coast Ranges split, resulting in a western coast gap, the Golden Gate, and an eastern coast gap, Carquinez Strait; these allow air to flow in and out of the SFBAAB and the Central Valley (BAAQMD 2017a).

BAAQMD divides the SFBAAB into subregions with distinct climate and topographic features. The proposed VMP area is located in the Northern Alameda and Western Contra Costa Counties Subregion of the SFBAAB.

##### Northern Alameda and Western Contra Costa Counties Subregion

This climatological subregion stretches from Richmond to San Leandro. Its western boundary is defined by the San Francisco Bay (the Bay) and its eastern boundary by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills have a ridgeline height of approximately 1,500 feet, a substantial barrier to air flow. The most densely populated area of the subregion lies in a strip of land between the Bay and the lower hills. In this area, marine air traveling through the Golden

Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The prevailing winds for most of this subregion are from the west.

Temperatures in this subregion have a narrow range due to the proximity of the moderating marine air. Maximum temperatures during summer average in the mid-70s (in degrees Fahrenheit [°F]), with minimums in the mid-50s. Winter highs are in the mid- to high 50s, with lows in the low to mid-40s.

The air pollution potential is lowest for the parts of the subregion that are closest to the Bay, due largely to good ventilation and less influx of pollutants from upwind sources. The occurrence of light winds in the evenings and early mornings occasionally causes elevated pollutant levels. The air pollution potential at the northern (Richmond) and southern (Oakland, San Leandro) parts of this subregion is marginally higher than at communities directly east of the Golden Gate because of the lower frequency of strong winds.

This subregion contains a variety of industrial air pollution sources. Some industrial facilities are quite close to residential areas. The subregion is also traversed by major freeways that are frequently congested. Traffic and congestion, along with the motor vehicle emissions they generate, are increasing (BAAQMD 2017a).

### ***Air Pollutants***

Several air pollutants of concern would be associated with VMP activities. These air pollutants are discussed briefly below. Two main categories of air pollutants are described: criteria air pollutants and toxic air contaminants. Criteria air pollutants are those air pollutants with national and/or state air quality standards that define allowable concentrations of these substances in the ambient air. TACs are those air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations.

#### Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is formed by the incomplete combustion of fuels and is emitted directly into the air. Ambient CO concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distribution of vehicular traffic. CO concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions (when a low layer of warm air, along with its pollutants, is held in place by a higher layer of cool air), CO concentrations may be distributed more uniformly over an area to some distance from vehicular sources. CO binds with hemoglobin, the oxygen-carrying protein in blood, and thereby reduces the blood's capacity to carry oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, impair mental abilities, and cause death.

#### Ozone

Ozone (O<sub>3</sub>) is a reactive gas that, in the troposphere (the lowest region of the atmosphere), is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when nitrogen oxides and reactive organic gases react in the presence of sunlight.

Ozone at the Earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground-level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill natural communities, agricultural crops, and some human-made materials (e.g., rubber, paint, and plastics).

#### Nitrogen Oxides

Nitrogen oxides (NO<sub>x</sub>) is a family of gaseous nitrogen compounds that are precursors to the formation of ozone and particulate matter. The major component of NO<sub>x</sub>, nitrogen dioxide (NO<sub>2</sub>), is a reddish-brown gas that is toxic at high concentrations. NO<sub>x</sub> results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

#### Reactive Organic Gases

Reactive organic gases (ROG) consist of hydrocarbon compounds that exist in the ambient air. ROG contributes to the formation of smog and/or may itself be toxic. ROG emissions are a major precursor to the formation of ozone.

#### Particulate Matter

Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets. PM is made up of various components, including acids, organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to the potential for causing health problems. PM particles that are smaller than 10 micrometers in diameter, called PM<sub>10</sub>, are of most concern because these particles pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM<sub>10</sub> particles are typically found near roadways and industrial operations that generate dust. PM<sub>10</sub> particles are deposited in the thoracic region of the lungs. Fine particles, called PM<sub>2.5</sub>, are particles less than 2.5 micrometers in diameter and are found in smoke and haze. PM<sub>2.5</sub> particles penetrate deeply into the thoracic and alveolar regions of the lungs. Ultrafine particulate matter, which has a diameter less than 0.1 micrometer (PM<sub>0.1</sub>), is not federally regulated at this time, although it is a subset of PM<sub>10</sub> and PM<sub>2.5</sub> emissions. It is generally recognized that smaller particles are more harmful to human health. Unlike larger particles, PM<sub>0.1</sub> can penetrate pulmonary tissue, enter the bloodstream, and circulate throughout the body. Thereby, PM<sub>0.1</sub> can damage internal systems that may be inaccessible to larger particles.

#### Sulfur Dioxide

Sulfur dioxide (SO<sub>2</sub>) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Suspended SO<sub>2</sub> particles contribute to poor visibility in the SFBAAB and are a component of PM<sub>10</sub>.

#### Lead

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. There is no known safe exposure level to lead. The health effects of lead poisoning include loss of appetite,

weakness, apathy, and miscarriage. Lead poisoning can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract and can reduce mental capacity.

Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out since 1996, which has resulted in dramatic reductions in ambient concentrations of lead. Because lead persists in the environment forever, however, areas near busy highways continue to have high levels of lead in dust and soil.

### Hydrogen Sulfide

Hydrogen sulfide (H<sub>2</sub>S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plant operations, and confined animal feeding operations. H<sub>2</sub>S is extremely hazardous in high concentrations and can cause death.

### Sulfates

Sulfates are the fully oxidized, ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds result primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO<sub>2</sub> during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO<sub>2</sub> to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

CARB's sulfate standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

### Vinyl Chloride

Vinyl chloride is a colorless gas that does not occur naturally. It is formed when other substances, such as trichloroethane, trichloroethylene, and tetrachloroethylene, are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) for a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

### Toxic Air Contaminants

Hundreds of different types of toxic air contaminants (TACs) exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. For some chemicals, such as carcinogens, no thresholds exist below which exposure can be considered risk-free. Examples of TAC sources in the VMP area include fossil fuel combustion sources, pesticides, and asbestos, including naturally occurring asbestos (NOA).

Sources of TACs include stationary sources, area-wide sources, and mobile sources. The U.S. Environmental Protection Agency (USEPA) maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are also included on CARB's list of TACs (CARB 2020a). According to the *California Almanac of Emissions and Air Quality* (CARB 2013), many

researchers consider diesel PM (DPM) to be a primary contributor to health risk from TACs because particles in diesel exhaust carry a mixture of many harmful organic compounds and metals, rather than being a single substance as are other TACs. Unlike many TACs, outdoor DPM is not monitored by CARB because no routine measurement method has been identified. However, using the CARB emission inventory's PM10 database, ambient PM10 monitoring data, and results from several studies, CARB has made preliminary estimates of DPM concentrations throughout the state (California Office of Environmental Health Hazard Assessment [OEHHA] 2001).

### Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring, fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments far below the surface of the earth. By the time they are exposed at the ground surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks, along their boundaries, or in the soil. Asbestos that occurs naturally in the environment (NOA) was identified as a TAC in 1986 by CARB. NOA is located in many parts of California and is commonly associated with ultramafic rocks, according to the California Department of Conservation, Division of Mines and Geology's 2002 special publication, *Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California*. (The department was renamed the California Geological Survey [CGS] in 2006.)

For individuals living in areas with NOA, there are many potential pathways for airborne exposure. Exposure to soil dust containing asbestos can occur under a variety of scenarios, including children playing in the dirt; dust raised from unpaved roads and driveways covered with crushed serpentine; grading and earth disturbance associated with construction activity; quarrying; and gardening. For homes built on asbestos outcroppings, asbestos can be tracked into the home on shoes and can also enter as fibers suspended in the air. Once such fibers are indoors, they can be entrained into the air by normal household activities such as vacuuming; many respirable fibers are small enough to pass through vacuum cleaner bags.

People exposed to low levels of asbestos may be at an elevated risk (e.g., above background rates) for lung cancer and mesothelioma. The risk is proportional to the cumulative inhaled dose (quantity of fibers), and also increases with the time since first exposure. Although numerous factors influence the disease-causing potency of any form of asbestos (such as fiber length and width, fiber type, and fiber chemistry), all forms are carcinogenic.

### Odors

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., roasting coffee). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is known as odor

fatigue; a person can become desensitized to almost any odor, after which recognition occurs only with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word “strong” to describe the intensity of an odor. Odor intensity depends on the concentration in the air. When an odor sample is progressively diluted, the odor concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odor reaches a level that is no longer detectable.

### ***Air Quality Attainment and Local Conditions***

CARB and USEPA have established ambient air quality standards (AAQS) to protect human health and welfare. Geographic areas are deemed to be in “attainment” if these standards are met or in “nonattainment” if they are not met. Nonattainment status is classified by the severity of the nonattainment problem. Marginal, moderate, serious, severe, and extreme nonattainment classifications have been established for ozone; nonattainment classifications for PM range from marginal to serious. **Table 3.3-1** shows the state and federal attainment status for the SFBAAB.

**Table 3.3-1.** San Francisco Bay Area Air Basin Attainment Status

Contaminant	Averaging Time	Concentration	State Standards Attainment Status <sup>1</sup>	Federal Standards Attainment Status <sup>2</sup>
Ozone	1-hour	0.09 ppm	N	See footnote 3
	8-hour	0.070 ppm	N	N (Marginal)
Carbon Monoxide	1-hour	20 ppm	A	
		35 ppm		A
	8-hour	9.0 ppm	A	A <sup>4</sup>
Nitrogen Dioxide	1-hour	0.18 ppm	A	
		0.100 ppm <sup>6</sup>		U
	Annual arithmetic mean	0.030 ppm	A	
		0.053 ppm		A
Sulfur Dioxide (SO <sub>2</sub> )	1-hour	0.25 ppm	A	
		0.075 ppm		A
	24-hour	0.04 ppm	A	
		0.14 ppm		A
	Annual arithmetic mean	0.030 ppm		A
Particulate Matter (PM <sub>10</sub> )	24-hour	50 µg/m <sup>3</sup>	N	
		150 µg/m <sup>3</sup>		U
	Annual arithmetic mean	20 µg/m <sup>3</sup>	N	
Fine Particulate Matter (PM <sub>2.5</sub> )	24-hour	35 µg/m <sup>3</sup>		N (Moderate) <sup>7</sup>
	Annual arithmetic mean	12 µg/m <sup>3</sup>	N	U/A
Sulfates	24-hour	25 µg/m <sup>3</sup>	A	
Lead <sup>8</sup>	30-day average	1.5 µg/m <sup>3</sup>	A	
Hydrogen Sulfide	1-hour	0.03 ppm	U	
Vinyl Chloride <sup>8</sup> (chloroethene)	24-hour	0.010 ppm	U	
Visibility Reducing Particles	8-hour (10:00 to 18:00 PST)	See footnote 5	U	

A – attainment

ppm – parts per million

N – nonattainment

µg/m<sup>3</sup> – micrograms per cubic meter

U – unclassified

PST – Pacific Standard Time

**Notes:**

1. California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM10, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular measurements that are excluded include those that the CARB determines would occur less than once per year on average.
2. National standards shown are the “primary standards” designed to protect public health. National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once per year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 parts per billion) or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150  $\mu\text{g}/\text{m}^3$ . The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 35  $\mu\text{g}/\text{m}^3$ . Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met by spatially averaging annual averages across officially designated clusters of sites and then determining if the 3-year average of these annual averages falls below the standard.
3. The national 1-hour ozone standard was revoked by USEPA on June 15, 2005. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 ppm to 0.070 ppm. An area meets the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. This table provides the attainment statuses for the 2015 standard of 0.070 ppm.
4. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
5. Statewide Visibility-Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average of nitrogen dioxide at each monitoring station within an area must not exceed 0.100 ppm (effective January 22, 2010).
7. On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour PM2.5 national standard. This USEPA rule suspends key state implementation plan (SIP) requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as “nonattainment” for the national 24-hour PM2.5 standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to USEPA, and USEPA approves the proposed redesignation.
8. CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure below which there are no adverse health effects determined.

Source: CARB 2019, USEPA 2020, BAAQMD 2020c

### Air Monitoring Data

BAAQMD, CARB, and USEPA operate an extensive air monitoring network to measure progress toward attainment of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The closest air monitoring station to the VMP area is in Oakland on International Boulevard, located south and west of the VMP area. **Table 3.3-2** shows the most recent three years of available data from stations in the area. Site-level data were available for ozone, PM<sub>2.5</sub>, and NO<sub>2</sub>.

**Table 3.3-2.** Air Monitoring Data for 2016-2018

Monitoring Station	Pollutant Standard		2016		2017		2018	
			Exceed-ances <sup>a</sup>	Maximum Concentration	Exceed-ances <sup>a</sup>	Maximum Concentration	Exceed-ances <sup>a</sup>	Maximum Concentration
Oakland-9925 International Blvd	Ozone	8-hour	0/0	0.057	2/2	0.100	0/0	0.052
		Hourly	0/0	0.082	2/1	0.136	0/0	0.061
	PM <sub>2.5</sub>	24-hour	0	15.500	7	70.200	13	172.100
	NO <sub>2</sub>	Hourly	0/0	59.200	0/0	64.900	0/0	72.900

**Notes:** ppb = parts per billion; ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter; N/A = Not Applicable

<sup>a</sup> The first value represents the number of days on which the federal standard was exceeded. The second number is the number of days on which the state standard was exceeded.

<sup>b</sup> Annual values for particulate matter are averages.

Maximum concentration is obtained from national data where national and state values differ. No data for PM<sub>10</sub> or CO were available from these sites.

Source: CARB 2020b.

### TACs in SFBAAB

In 2006, BAAQMD undertook the creation of a regional emissions inventory for TACs from major sources of emissions in the Bay Area, including nearly 200 toxic gases or particles. Emissions inventories for 2005 and 2015 were used as data inputs to a regional air quality model to predict concentrations of key toxic compounds and the associated cancer risk. Some of the key findings from this work were that DPM contributed more than 85 percent of the total inventoried cancer risk and that simulated potential cancer risk from TACs is highest near major DPM sources. Another key finding is that cancer risk from TACs is dropping; when emissions inputs accounted for state diesel regulations and other reductions, modeled risk values were projected to drop by more than 50 percent between 2005 and 2015. Measurement-based assessments of cancer risk from air pollution show similar reductions. According to the most recent analysis (for 2012), the average regional cancer risk was about 300 per million. That is, for every 1 million residents exposed for 70 years to current levels of TACs, 300 would be expected to develop cancer as a result of the exposure. According to the analysis, more than 70 percent of the cancer risk related to air pollution in the Bay Area is attributable to DPM, and 90 percent of the total risk is attributable to three compounds: DPM, benzene, and 1,3-butadiene. All three of these compounds are produced through fuel combustion (BAAQMD 2014).

### Sensitive Receptors

Sensitive receptors are those segments of the population most susceptible to poor air quality: children, the elderly, and individuals with pre-existing serious health problems affected by air quality (e.g., asthma) (CARB 2005). Examples of locations that contain sensitive receptors are residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences include houses, apartments, and senior living complexes. Medical facilities can include hospitals, convalescent homes, and health clinics. Playgrounds include play areas associated with parks or community centers. Receptors in the vicinity of VMP activities could include any of these receptor types, in particular single-family residences in rural, suburban, and urban settings. VMP project sites are generally located in the Oakland Hills and border residential areas and open spaces. **Table 3.3-3** includes information on the sensitive receptors closest to the major VMP treatment areas. Smaller parcels, which are not included in the table, often include or are adjacent to single-family residences.

**Table 3.3-3. Sensitive Receptors Near VMP Treatment Areas**

VMP Treatment Area	Sensitive Receptor	Distance in Feet to Nearest Receptor from VMP Treatment Area (center/edge)
Garber Park	Multiple residences along Alvarado Road, Evergreen Lane, Siler Place, and Rispin Drive	215 / 0
	Claremont Hotel	1,600 / 600
Grizzly Peak Open Space	Multiple residences along Tunnel Road, Bay Forest Drive, Buckingham Boulevard, and Westmoorland Drive	290 / 0
North Oakland Sports Field	Residences along Gwin Road, Fairlane Drive, Swainland Road, and Skyline Boulevard	1,100 / 300
Skyline Boulevard	Multiple single-family residences along Skyline Boulevard	30 (from road center) / 0
	Shepherd Canyon Park, Shepherd Canyon Trail, and Montclair Park	0 / 0
Shepherd Canyon	Single-family residences along Magellan Drive, Cortereal Avenue, Snake Road, Drake Drive, Zinn Drive, Cortez Court, Bishop Court, Westover Drive, Pelham Place, Scarborough Drive	425 / 0
	First Church of Christ Scientist	2,800 / 350
Dimond Canyon Park	Single-family residences along Leimert Boulevard, Monterey Boulevard, Bridgeview Drive, Arden Place, Clemens Road, Oakmore Road, Park Boulevard, Hanly Road, El Centro Avenue, Lyman Road, Canon Avenue, Vista Street	220 / 0
	The Renaissance International School, Corpus Christi School, Glenview Elementary School	415 / 100
Joaquin Miller Park	Dimond Branch Oakland Public Library	4,000 / 670
	Zion Lutheran Church, Corpus Christi Church	415 / 85
Joaquin Miller Park	Residences along Joaquin Miller Road, Burdeck Court, Butters Drive, Robinson Drive, Skyline Boulevard, Castle Drive, Waybridge Court, Castle Park Way, Mastlands Drive, Joaquin Miller Court, Woodcrest Circle	1,500 / 0
	Joaquin Miller Park, Chabot Space and Science Center	0 / 0
Leona Heights Park	A Child's House – Preschool	1,800 / 150
	Church of Jesus Christ of Latter-Day Saints	4,500 / 1,200
Leona Heights Park	Residences along Redwood Road, Geranium Place, Berneves Court, Mountain Boulevard	280 / 0
	East Hills Community Church	1,700 / 330

VMP Treatment Area	Sensitive Receptor	Distance in Feet to Nearest Receptor from VMP Treatment Area (center/edge)
	Mountain Boulevard Montessori School, Chatham Nursery School, Carl B Munck Elementary School, Merritt College	640 / 5
	Sunrise of Oakland Hills (Assisted Living Facility)	2,100 / 1,350
King Estate Open Space Park	Residences along Greenly Drive, Sterling Drive, McCormick Avenue, Sunkist Drive, 82 <sup>nd</sup> Avenue, El Monte Avenue, Aster Avenue, Ney Avenue, Fontaine Street, Blandon Road, Sarazen Avenue, Castlewood Street, Calandria Avenue, Murillo Avenue, Crest Avenue	550 / 0
	Sojourner Truth School, Charles P. Howard Elementary School	410 / 0
	Bethany Home Care, E.E. Cleveland Manor (assisted living facilities)	2,400 / 750
	United Lutheran Church of Oakland, Center of Hope Community Church, Masjid Al-Islam	1,040 / 10
Knowland Park	Residences along Golf Links Road, Anza Avenue, Burgos Avenue, Sigourney Avenue, Orinda Vista Drive, Royal Oak Road, Elysian Fields Drive, Riviera Court, Pebble Beach Drive, Fox Hills Court, Scotia Avenue, Merlin Court, Cotter Street, Key Court, Caloden Lane, Fallbrook Way, Malcolm Avenue, Elvessa Street, Ettrick Street, Lochard Street, Cameron Avenue, Snowdown Avenue, Edgemont Way, Maggiora Drive, Hellman Street, Stella Street, Mark Street, Hood Street, 106 <sup>th</sup> Avenue, Sheldon Street, Broadmoor View, Stanley Avenue	920 / 0
	St. Paschal Baylon Catholic Church, Northern Light School, Grass Valley Elementary School, BJ's Daycare Center	2,800 / 210
	Oakland Zoo, Knowland Park	0 / 0
	Sunny Care Home, Bethany Home Care, D'Nalor Care Homes (assisted living facilities)	3,535 / 120
	Harris Motel, Commodore Hotel, Premier Inn & Suites, Starlite Motel, Welcome Inn, Crown Lodge Motel, Travis Lodge Motel 16	5,800 / 1,350
	Residences along Sun Valley Drive, Golf Links Road, Turner Avenue, Lochard Street	1,200 / 10
	East Bay Bible Church	2,650 / 1,325
	Sheffield Village Open Space	1,100 / 0
	Residences along Cranford Way, Revere Avenue, Marlow Drive, Malcolm Avenue, Broadmoor View, Daniels Drive, Sylvan Circle, Lochard Street	725 / 0
	East Bay Innovation Academy	3,650 / 10

VMP Treatment Area	Sensitive Receptor	Distance in Feet to Nearest Receptor from VMP Treatment Area (center/edge)
	Fairhaven Bible Chapel, Creekside Community Church	2,580 / 650
	Dunsmuir Hellen Historic Estate, Lake Chabot Golf Course	1,100 / 0
	D’Nalor Care Homes	5,550 / 1,890

Source: Based on Google Earth aerial views.

***Existing Levels of Emissions Generated by Vegetation Treatment Activities***

As detailed in Chapter 2, *Project Description*, and Section 3.1.2, “Baseline Conditions,” the baseline conditions for this EIR consider a range of existing vegetation management activities and assume that a certain amount of goat grazing and roadside treatment (via hand labor and mechanical activities) is being performed. These activities would generate air pollutant emissions from the consumption of fossil fuels during equipment and vehicle use. Existing air pollutant emissions from the baseline activities assumed in Section 3.1.2 are summarized in **Table 3.3-4**. According to City staff, current and past goat grazing activities have resulted in no known odor complaints (Hansen 2020, pers. comm.).

**Table 3.3-4.** Baseline Conditions Criteria Pollutant Emissions

Vegetation Management Activity		Emissions – Annual (Tons / Year)			
		ROG	NO <sub>x</sub>	PM10	PM2.5
Grazing	Grazing	0.00	0.00	0.00	0.00
	Worker Trips	2.61E-03	0.019	0.01	1.64E-03
Roadside Treatments	Roadside Treatments	1.00	0.15	0.02	0.02
	Worker Trips	3.59E-03	0.03	0.01	2.26E-03
Baseline Total		1.01	0.20	0.04	0.02

**3.3.2 Regulatory Setting**

This subsection discusses the federal, state, regional, and local laws, regulations, and policies that pertain to air quality in the VMP area.

***Federal Laws, Regulations, and Policies***

USEPA is responsible for establishing the NAAQS, enforcing the federal Clean Air Act (CAA), and regulating transportation-related emission sources such as aircraft, ships, and certain types of locomotives, under the exclusive authority of the federal government. USEPA also establishes vehicular emission standards, including those for vehicles sold in states other than California. (Automobiles sold in California must meet stricter emission standards established by CARB, as described below.)

Clean Air Act

The CAA required USEPA to establish NAAQS, which are described above and shown in Table 3.3-1. The CAA also required each state to prepare an air quality control plan.

Non-road Emission Regulations

USEPA has adopted emissions standards for various types of non-road engines, equipment, and vehicles. For non-road diesel engines, USEPA has adopted multiple tiers of emission standards.

USEPA signed a final rule on May 11, 2004, introducing the Tier 4 emission standards, to be phased in between 2008 and 2015 (69 Code of Federal Regulations [CFR] 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of PM and NO<sub>x</sub> be further reduced by about 90 percent. Such emission reductions can be achieved using control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, such as catalytic particulate filters and NO<sub>x</sub> absorbers, USEPA also mandated reductions in sulfur content in non-road diesel fuels. In most cases, federal non-road regulations also apply in California, which has only limited authority to set emission standards for new non-road engines. The CAA preempts California's authority to control emissions from new farm and construction equipment less than 175 horsepower (CAA Section 209[e][1][A]) and requires California to receive authorization from USEPA for controls over other off-road sources (CAA Section 209[e][2][A]).

### ***State Laws, Regulations, and Policies***

#### **California Clean Air Act**

The California Clean Air Act (CCAA) requires nonattainment areas to achieve and maintain the health-based CAAQS by the earliest practicable date. The CCAA is administered by CARB at the state level; at the regional level, local air quality management districts are required to develop plans and control programs for attaining the state standards. Table 3.3-1 shows the CAAQS.

CARB is responsible for ensuring implementation of the CCAA, meeting state requirements of the federal CAA, and establishing the CAAQS. It is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications.

#### **In-use Off-road Diesel Vehicle Regulation**

In 2007, CARB adopted a regulation to reduce DPM and NO<sub>x</sub> emissions from in-use, off-road, heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. In December 2011, the regulation was amended to modify the compliance dates for performance standards and establish requirements for compliance with verified diesel emission control strategy technologies that reduce PM and/or NO<sub>x</sub> emissions.

#### **Truck and Bus Regulation**

In 2008, CARB approved a regulation to substantially reduce emissions of DPM, NO<sub>x</sub>, and other pollutants from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance standards and requirements by 2023. Affected vehicles included on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds. The regulation was updated in 2011 and 2014 to provide more compliance flexibility and reflect the impact of the 2008 economic recession on vehicle activity and emissions. Heavy-duty trucks used for VMP activities would be required to comply with this regulation.

### Heavy-duty On-board Diagnostic System Regulations

In 2004, CARB adopted regulations requiring on-board diagnostic (OBD) systems on all 2007 and later model year heavy-duty engines and vehicles (i.e., vehicles with a gross vehicle weight rating greater than 14,000 pounds) in California. CARB subsequently adopted a comprehensive OBD regulation for heavy-duty vehicles model years 2010 and beyond. The heavy-duty OBD regulations were updated in 2010, 2013, and 2016 with revisions to enforcement requirements, testing requirements, and implementation schedules. Heavy-duty trucks used during VMP activities would be required to comply with the heavy-duty OBD regulatory requirements.

### Heavy-duty Vehicle Inspection Program

The heavy-duty vehicle inspection program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering and for compliance with engine certification labels. Any heavy-duty vehicle (i.e., a vehicle with a gross vehicle weight rating greater than 14,000 pounds) traveling in California, including vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found to be in violation are subject to penalties starting at \$300 per violation. Heavy-duty trucks used during VMP activities would be subject to the inspection program.

### California Standards for Diesel Fuel Regulations

These regulations require diesel fuel with sulfur content of 15 parts per million (ppm) or less (by weight) to be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, other than diesel fuel used solely in locomotives or marine vessels. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

### Airborne Toxic Control Measures

CARB regulates TACs by requiring implementation of various airborne toxic control measures (ATCMs), which are intended to reduce emissions associated with toxic substances. The following ATCMs may be relevant to VMP activities.

#### *Naturally Occurring Asbestos ATCMs*

These regulations ensure that activities in areas containing NOA must implement asbestos dust mitigation measures, and they restrict the use of asbestos-containing material on road surfacing to less than 0.25 percent. Projects that disturb more than 1 acre in areas containing NOA must submit and obtain local air district approval of an asbestos dust mitigation plan. The plan must specify how the operation will minimize emissions and must address specific emission sources. This ATCM supersedes the BAAQMD's natural asbestos-related regulation and requires permits from the BAAQMD (as detailed in "Regional Laws, Regulations, and Policies" below).

#### *ATCM to Limit Diesel-fueled Commercial Motor Vehicle Idling*

On October 20, 2005, CARB approved an ATCM to limit idling of diesel-fueled commercial motor vehicles. This regulation was a follow-up to previous idling ATCMs, and it consists of new engine and in-use truck requirements, as well as idling emission performance standards. The regulation

requires 2008 and newer model year heavy-duty diesel-fueled engines to be equipped with a nonprogrammable engine shutdown system that automatically shuts down the engine after 5 minutes of idling or, optionally, meets a stringent NO<sub>x</sub> idling emission standard (i.e., 30 grams per hour). The regulation also applies to the operation of in-use trucks, requiring operators of both in-state and out-of-state registered, sleeper berth–equipped trucks to manually shut down their engines when idling more than 5 minutes at any location within California, beginning in 2008. Affected vehicles include diesel-fueled commercial vehicles with a gross vehicle weight rating greater than 10,000 pounds. The regulation contains exceptions for equipment that requires the engine to remain on to operate, such as ready-mix concrete trucks. Trucks used for hauling or vendor delivery of materials for VMP activities would be required to comply with these requirements.

### ***Regional Laws, Regulations, and Policies***

BAAQMD is responsible for implementing air quality regulations on a regional level, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS. BAAQMD also implements permit programs for the construction, modification, and operation of air pollution sources and enforces air pollution statutes and regulations governing stationary sources. With CARB oversight, BAAQMD also administers local regulations.

#### Regulations and Rules

The BAAQMD supports incentive programs to reduce criteria pollutant emissions within its jurisdiction, as well as establishing rules and permitting requirements. The VMP may be subject to some or all of the following BAAQMD rules (BAAQMD 2020b):

**Regulation 2: Permits** outlines the air permitting program, including exemptions and sources that require permitting.

**Regulation 2, Rule 1: Permits General Requirements** outlines permitting requirements and exemptions. This rule prohibits any source from causing a public nuisance, defines what equipment is subject to permitting/new source review requirements, and exempts portable stationary equipment (e.g., generators or soil screeners) from permitting if they comply with all applicable requirements of CARB's Portable Equipment Registration Program.

**Regulation 6, Rule 1: Particulate Matter** restricts emissions of PM.

**Regulation 11, Rule 14: Asbestos-Containing Serpentine** was adopted in 1991 to control asbestos emissions from unpaved road surfaces and other surfacing operations. This regulation has been superseded by CARB's ATCM for Surfacing Applications and for Construction, Grading, Quarrying, and Surface Mining Operations; however, applicable VMP activities would be required to obtain BAAQMD approval of asbestos dust mitigation plans and notify BAAQMD of maintenance operations (BAAQMD 2020a, 2020b).

### BAAQMD Planning

BAAQMD has adopted several air quality improvement plans, as required by state and federal regulations, to ensure progress in attaining and maintaining the NAAQS and CAAQS. These plans are described below.

#### *Bay Area 2010 Clean Air Plan*

BAAQMD adopted the *Bay Area 2010 Clean Air Plan (2010 CAP)* (BAAQMD 2010) to improve Bay Area air quality and meet public health goals. More specifically, the control strategy described in the 2010 CAP is designed to reduce emissions and decrease ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce greenhouse gas (GHG) emissions to protect the climate.

The 2010 plan addresses four categories of pollutants: (1) ground-level ozone and its key precursors, ROG and NO<sub>x</sub>; (2) particulate matter, primarily PM<sub>2.5</sub>, as well as precursors to secondary PM<sub>2.5</sub><sup>5</sup>; (3) airborne toxic contaminants; and (4) GHGs. The control strategy in the 2010 CAP describes measures that address or control stationary source s, transportation, mobile source s, land use and local impact s, energy and climate s, and further study measures to reduce air pollutants (BAAQMD 2010).

#### *2017 Clean Air Plan*

The 2017 CAP updates the 2010 CAP and provides a regional strategy to protect public health and protect the climate (BAAQMD 2017b). The 2017 CAP includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as PM, O<sub>3</sub>, and TACs; reduce emissions of methane and other “super-GHGs” that are potent climate pollutants in the near term; and decrease emissions of carbon dioxide (CO<sub>2</sub>) by reducing fossil fuel combustion.

#### *Particulate Matter Plan*

To fulfill federal air quality planning requirements, BAAQMD adopted a PM<sub>2.5</sub> emissions inventory for 2010 at a public hearing in November 2012. This was transmitted to CARB for inclusion in the California State Implementation Plan (SIP). BAAQMD also produced an informational report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area* to help guide ongoing efforts to analyze and reduce PM in the Bay Area (BAAQMD 2012). The 2010 and 2017 CAPs contain multi-pollutant approaches that include several measures for reducing PM emissions in the Bay Area.

In January 2013, USEPA issued a final rule determining that the San Francisco Bay Area has attained the 24-hour PM<sub>2.5</sub> NAAQS; this action suspended federal SIP planning requirements for the Bay Area (BAAQMD 2020c).

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<sup>5</sup> PM includes all particles that are suspended in the air. PM is both directly emitted (referred to as direct PM or primary PM) and also formed in the atmosphere through reactions among different pollutants (referred to as indirect or secondary PM).

### BAAQMD CEQA Significance Thresholds

The CEQA Guidelines recommend that criteria established by the local air district should be relied upon to make determinations of significance regarding air quality impacts. BAAQMD has developed CEQA guidelines to assist local jurisdictions in evaluating potentially adverse impacts on air quality. Based on the most recent CEQA Guidelines (BAAQMD 2017a), were used to identify the thresholds provided below.

### ***Local Laws, Regulations, and Policies***

#### City of Oakland General Plan

The City of Oakland General Plan's Open Space Conservation and Recreation Element contains the following objectives, policies, and actions that may be relevant to the VMP (City of Oakland 1996):

**Objective CO-12: Air Resources.** To improve air quality in Oakland and the surrounding Bay Region.

**Action CO-12.2.2: Use of Non-Gasoline Powered Vehicles.** As funding permits, convert City fleet vehicles to non-gasoline powered vehicles.

**Policy CO-12.6: Control of Dust Emissions.** Require construction, demolition and grading practices which minimize dust emissions. These practices are currently required by the City and include the following:

- Avoiding earth moving and other major dust generating activities on windy days.
- Sprinkling unpaved construction areas with water during excavation, using reclaimed water where feasible.
- Covering trucks hauling dirt and debris to reduce spills. If spills do occur, they should be swept up promptly before materials become airborne.
- Preparing a comprehensive dust control program for major construction in populated areas or adjacent to sensitive uses like hospitals and schools.
- Operating construction and earth-moving equipment, including trucks, to minimize exhaust emissions.

#### Oakland 2030 Equitable Climate Action Plan

The City's 2030 Equitable Climate Action Plan (ECAP) contains the following policy that may be relevant to the VMP (City of Oakland 2020):

**Policy CL-2: Phase Out Fossil Fuel Dependency in All City Agreements and Contracts.**

Explore ways to eliminate fossil fuel reliance in all agreements and contracts entered into by the City of Oakland, including utility and contractor franchise agreements, facility and infrastructure design and construction contracts, and other agreements in which fossil fuels will be directly or indirectly utilized to conduct the City's business.

### 3.3.3 Impact Analysis

This discussion describes the methodology for estimating air pollutant emissions and the significance criteria used to evaluate air quality impacts from implementing the VMP's proposed vegetation management activities. Where feasible, mitigation measures are identified to reduce the level of potentially significant impacts.

#### ***Methodology***

This section describes the methods used to evaluate whether the vegetation management activities of the VMP would result in significant impacts related to air quality, odors, and TACs. Emissions associated with proposed management activities were quantified; the sources of these emissions include off-road equipment such as chainsaws, tractors, mowers, chippers, masticators, and excavators; material-hauling vehicles; vendor trips, and worker commutes. Emissions of criteria pollutants were estimated based on the equipment, phasing, duration, material import and export volumes, vegetation management area sizes, and worker quantities. See Section 2.3.9, "Construction Personnel" for more information on worker quantities. The assumptions used to develop these estimates are summarized in Appendix C of this DEIR.

Emissions from livestock and off-road equipment were estimated based on values used in a project with similar equipment and vegetation management activities, specifically the emission rates used in the California Vegetation Treatment Program (CalVTP) EIR (California Board of Forestry and Fire Protection 2019). Emissions from worker, vendor, and hauling trips were estimated using California Emissions Estimate Model (CalEEMod) Version 2016.3.2. Herbicide emissions were estimated using the California Department of Pesticide Regulation's volatile organic compound (VOC) emissions calculator for the following assumed formulations of herbicides: Rodeo, Triclopyr 3A, and Imazapyr 2SL. To provide a conservative approach to the impact analysis, maximum application of each herbicide was assumed for the full annual herbicide-treated area under the VMP (described in Tables 2-3 and 2-5). Appendix C of this DEIR provides relevant emission rate data from the CalVTP EIR, calculations for the VMP treatment area, CalEEMod modeling results, and herbicide use assumptions.

TAC risks and odor-related impacts were evaluated qualitatively, given the scope and nature of the VMP and the varying project locations. Potential sources of odors and TACs were considered in the evaluation.

BAAQMD uses average daily and maximum annual emissions values for construction- and operational-related thresholds. Average daily emissions were calculated by dividing the maximum annual emissions by the number of days on which vegetation management work is anticipated to take place in a given year. The VMP's average daily emissions were compared against BAAQMD's mass emission thresholds (described below), and the City of Oakland's thresholds, which are based on the BAAQMD's mass emission thresholds (also described below) to determine whether the proposed activities would result in a significant impact.

#### ***Criteria for Determining Significance***

The criteria for determining significance used for this EIR were based on Appendix G of the CEQA Guidelines, the City of Oakland's *CEQA Thresholds of Significance Guidelines* (2013), and local

BAAQMD significance criteria. The Appendix G thresholds are presented first, followed by the City's, and then the BAAQMD's thresholds. The Appendix G thresholds were applied in the "Environmental Impacts" discussion below with consideration of the City's and the BAAQMD's thresholds, which are largely numeric. As such, the discussions and tables in this section indicate which City and BAAQMD thresholds are relevant to specific Appendix G thresholds and their cumulative consideration in the impact discussions below.

According to Appendix G of the CEQA Guidelines, the VMP would result in a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations as defined by BAAQMD; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The City's CEQA thresholds of significance are based on BAAQMD thresholds, including numeric BAAQMD criteria pollutant thresholds for daily and annual emissions, as detailed in the BAAQMD thresholds. **Table 3.3-5** provides the City's thresholds of significance (as provided in its *CEQA Thresholds of Significance Guidelines*) and the applicable Appendix G thresholds. These numeric City thresholds were considered in the impact discussions matching the relevant Appendix G threshold.

**Table 3.3-5.** City of Oakland Air Quality Thresholds of Significance and Relevant CEQA Guidelines Appendix G Thresholds

City of Oakland Threshold	Applicable Appendix G Threshold
During project construction, result in average daily emissions of 54 pounds per day of ROG, NOx, or PM2.5, or 82 pounds per day of PM10.	2
During project operation, result in average daily emissions of 54 pounds per day of ROG, NOx, or PM2.5 or 82 pounds per day of PM10; or result in maximum annual emissions of 10 tons per year of ROG, NOx, or PM2.5 or 15 tons per year of PM10.	2
Contribute to carbon monoxide (CO) concentrations exceeding the CAAQS of nine ppm averaged over eight hours and 20 ppm for one hour.*	2
For new sources of TACs, during either project construction or project operation expose sensitive receptors to substantial levels of TACs under project conditions resulting in (a) an increase in cancer risk level greater than 10 in one million, (b) a non-cancer risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average PM2.5 of greater than 0.3 micrograms per cubic meter; or, under cumulative conditions, resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM2.5 of greater than 0.8 micrograms per cubic meter.	3
Expose new sensitive receptors to substantial ambient levels of TACs resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM2.5 of greater than 0.8 micrograms per cubic meter.**	NA
Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.	4

\* The City of Oakland's CEQA Thresholds of Significance Guidance notes that the CO threshold is applicable as follows: "Pursuant to BAAQMD CEQA Guidelines, localized CO concentrations should be estimated for projects in which (a) project-generated traffic would conflict with an applicable congestion management program established by the county congestion management agency or (b) project-generated traffic would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, such as tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways). In Oakland, only the MacArthur Maze portion of Interstate 580 exceeds the 44,000 vehicles per hour screening criteria.)

\*\* This threshold is not applicable to the project since the project does not propose to add any new sensitive receptors.

Source: *City of Oakland 2013.*

BAAQMD has established mass emission thresholds of significance to determine if air pollutant emissions would result in a cumulatively considerable net increase of criteria pollutant for which the air basin is already designated in nonattainment for AAQS (BAAQMD 2017a). These mass emissions thresholds are shown in **Table 3.3-6**.

**Table 3.3-6.** BAAQMD Air Quality Thresholds of Significance

Pollutant	Average Daily Emissions (pounds per day)	Annual Emissions (tons per year)
ROG	54	10
NO <sub>x</sub>	54	10
PM10 (Exhaust)	82	15
PM2.5 (Exhaust)	54	10
PM10/PM2.5 (Fugitive Dust)	Implementation of BMPs	None
Local CO	None	None

Source: BAAQMD 2017a.

BAAQMD recommends implementing BMPs for all projects to reduce fugitive dust emissions. With implementation of fugitive dust BMPs, BAAQMD considers the impact of fugitive dust emissions to be less than significant.

Similarly, BAAQMD requires that several prescriptive fugitive dust measures be included in the Asbestos Dust Mitigation Plan, which is required under the state Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations for projects in ultramafic rock areas that may emit or re-suspend dust that may contain NOA. With implementation of the required fugitive dust measures in the Asbestos Dust Mitigation Plan, the BAAQMD considers the impact of NOA emissions to be less than significant.

BAAQMD has also established screening criteria that specify an acceptable distance between sensitive receptors and common sources of odors, such as landfills and wastewater treatment plants. BAAQMD specifies that an odor source with five or more confirmed complaints per year averaged over 3 years would be considered to have a significant impact on receptors within the screening distance. BAAQMD acknowledges that a lead agency has discretion under CEQA to use other established odor detection thresholds or other significance thresholds for CEQA review.

### ***Environmental Impacts***

#### **Impact AQ-1: Conflict with or Obstruct Implementation of Applicable Air Quality Plans (*Less than Significant*)**

The VMP would have a significant impact if it would conflict with or impair implementation of applicable air quality plans that address the SFBAAB's existing nonattainment status of ozone, PM2.5, and PM10 for state and/or federal air quality standards. Applicable air quality plans include the 2010 and 2017 CAPs.

The 2010 CAP (BAAQMD 2010) contains a control strategy that includes measures for stationary sources, mobile sources, transportation controls, land use and local impacts, energy and climate, and additional measures to control ozone and its precursors (ROG and NO<sub>x</sub>), PM10, PM2.5, and TACs. The 2017 CAP (BAAQMD 2017b) similarly provides ozone control strategies

related to numerous potential ozone precursor sources, including stationary sources, transportation, natural and working lands, waste management, energy, and buildings. In particular, Policy TR-19 of the 2017 CAP provides incentives for lower emission trucks, and Policy TR-22 of the CAP provides incentives for the use of lower-emitting construction equipment. Compliance with these policies would reduce transportation- and construction-related ozone precursor emissions (BAAQMD 2017b).

As shown in Table 2-6 in Chapter 2, *Project Description*, and discussed in more detail in Impact AQ-2 and Appendix C of this DEIR, hand labor techniques would involve the use of chainsaws, while mechanical techniques would be conducted with heavy-duty off-road equipment such as mowers, tractors, chippers, and excavators. Hand labor and prescribed herbivory activities (grazing) are currently conducted as part of baseline activities in the VMP area, while mechanical treatment and herbicide use would be new activities under the VMP (see **Table 3.3-7**). Policy CL-2 of the ECAP encourages the City to reduce reliance on fossil fuel dependency in City agreements and contracts; compliance with this policy could limit contractors' use of these types of equipment while conducting vegetation management activities. Although the City recently adopted a ban on certain fossil fuel-powered tools (such as leaf blowers), if these equipment types are used to conduct VMP treatment activities they would likely rely on portable generators to provide recharging capabilities on site; therefore, the ban would not affect emissions from VMP treatment activities.

**Table 3.3-7.** VMP and Baseline Treatment Activities

Cal VTP Treatment Activity Category	Acres Treated Per Year	
	Baseline	VMP
Mechanical – Tree removal	0	5
Mechanical – Shrub removal	0	5
Mechanical – Grass removal	0	5
Hand labor – Tree removal	0	20
Hand labor – Shrub removal	110	145
Hand labor – Grass removal	290	375
Herbicide – Tree removal	0	20
Herbicide – Shrub removal	0	15
Prescribed Herbivory – Tree and Shrub removal	900	1,100

The VMP would involve temporary maintenance-related emissions, would not result in induced growth, and would not result in a permanent new source of emissions. As described below in Impact AQ-2, annual emissions from the VMP would be slightly higher than baseline emissions. Over time, VMP emissions from vehicles would decline through compliance with stricter statewide vehicle emission regulations. As shown in Table 3.3-7, for all criteria pollutant emissions, the existing baseline and VMP-related emissions would be less than the BAAQMD's thresholds and in compliance with the 2017 CAP goals of meeting attainment for these criteria pollutants.

### Conclusion

The VMP would not result in a permanent new source of emissions and would not induce population growth. Therefore, it would not conflict with applicable air quality plans, and this impact would be **less than significant** and no mitigation is required.

### **Impact AQ-2: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation or Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region Is in Nonattainment (*Less than Significant with Mitigation*)**

The VMP would result in emission of criteria pollutants for vegetation management activities through the combustion of fossil fuels by equipment, worker and vendor vehicles, and material-hauling trucks.

The nonattainment status of ozone, PM10, and PM2.5 in the SFBAAB is considered an existing significant cumulative impact. All other criteria pollutants are in attainment. The BAAQMD has established significance thresholds that apply to determining if there would be a violation of any air quality standard or contribute substantially to an existing or projected air quality violation. These thresholds also apply to cumulative air impacts and a project's potential to considerably contribute to a cumulative impact. These significance thresholds were developed considering the region's air pollutant sources and anticipated population growth and related emissions in the air basin. A project that does not exceed these significance thresholds would not violate or considerably contribute to a cumulative air quality impact. BAAQMD recommends implementation of BMPs to reduce fugitive dust emissions for all projects. With implementation of the BAAQMD BMPs and fugitive dust control measures listed in **Mitigation Measure AQ-1 (Fugitive Dust BMPs)**, BAAQMD considers fugitive dust emissions to be less than significant. Although not required to reduce the significance of fugitive dust emissions or other air quality pollutants, **Mitigation Measure GEO-1 (Minimize Area of Disturbance)**, **Mitigation Measure HAZ-1 (Vehicle and Equipment Maintenance)**, and **Mitigation Measure HAZ-5 (Standard Herbicide Use Requirements)** would further minimize potential air quality pollutant emissions by minimizing the area of disturbance, ensuring proper vehicle and equipment maintenance, and ensuring appropriate use of herbicides.

As demonstrated in the emissions calculations presented in **Table 3.3-8** and Appendix C of this DEIR, VMP treatment activities would generate criteria pollutants below the threshold levels established by BAAQMD and those of the City. Further, the VMP's limited activities and short duration at any given treatment area would not be anticipated to generate the traffic conditions requiring a quantitative analysis for local CO concentrations (i.e., would not conflict with an applicable congestion management program established by the county congestion management agency or cause traffic volume increases at affected intersections to more than 44,000 vehicles per hour). As discussed in more detail in Section 3.12, "Transportation," in Impact TRA-2, the addition of 3-8 workers under the VMP would result in 18-48 additional daily vehicle trips beyond the City's current activities for the duration of each project, well below the City's threshold of 100 trips per day and OPR's threshold of 110 trips per day. The VMP would not exceed the City's thresholds of significance for carbon monoxide and the other criteria pollutants. Additionally, the purpose of the VMP is to decrease the frequency and scale of

wildfires in the VMP area that would result in uncontrolled emissions of criteria pollutants, including NO<sub>x</sub> and PM.

**Table 3.3-8. VMP Criteria Pollutant Emissions**

VMP Activity		Emissions – Annual (Tons / Year)			
		ROG	NO <sub>x</sub>	PM10	PM2.5
<b>Baseline</b>					
Grazing	Grazing	0.00	0.00	0.00	0.00
	Worker Trips	2.61E-03	0.019	0.01	1.64E-03
Roadside Treatments	Roadside Treatments (Assume all Hand Labor)	1.00	0.15	0.02	0.02
	Worker Trips	3.59E-03	0.03	0.01	2.26E-03
Baseline Total		1.01	0.20	0.04	0.02
<b>VMP</b>					
Grazing	Grazing	0.00	0.00	0.00	0.00
	Grazing – Trips	0.00278	0.0183	0.00679	0.00188
Hand Labor	Hand Labor	1.78	0.24	0.03	0.02
	Hand Labor – Trips	5.29E-03	3.81E-02	1.30E-02	3.58E-03
Mechanical	Mechanical	1.04E-02	2.53E-02	1.95E-03	1.60E-03
	Mechanical – Trips	1.20E-04	1.61E-03	2.80E-04	1.00E-04
Herbicide	Herbicide	0.14	0.00	0.00	0.00
	Herbicide – Trips	6.00E-05	4.00E-05	1.40E-04	4.00E-05
<b>Summary</b>					
Annual	Emissions – Annual (tons/year)				
	VMP Total	1.93	0.33	0.05	0.03
	VMP Total – Baseline	0.93	0.13	0.02	0.01
	BAAQMD Threshold	10	10	15	10
Average Daily	Emissions – Average Daily (lb/day)				
	VMP Total	15.98	2.71	0.43	0.24
	VMP Total – Baseline	4.26	0.40	0.02	0.01
	BAAQMD Threshold	54	54	82	54
Above Threshold?		No	No	No	No

### Mitigation Measures

#### **Mitigation Measure AQ-1: Fugitive Dust BMPs**

The City and its contractors will implement the following measures:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California ATCM identified in 13 CCR Section 2485). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and name of the City staff person to contact regarding dust complaints. Following the review of any dust complaints, the City contact person shall respond and take corrective action within 48 hours. Assessments and responses to dust complaints will be conducted in compliance with the BAAQMD's applicable particulate matter rules and regulations, including but not limited to Regulation 6.

**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-1: Vehicle and Equipment Maintenance (VMP BMP GEN-8)**

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**

Emissions from VMP treatment activities would be below BAAQMD and City thresholds. Implementing Mitigation Measure AQ-1 would ensure the impact from fugitive dust emissions would be less than significant. Implementing Mitigation Measures GEO-1, HAZ-1, and HAZ-5 would further decrease emissions of criteria pollutants. Additionally, the purpose of the VMP is

to decrease the frequency and scale of wildfires in the VMP area that would result in uncontrolled emissions of criteria pollutants, including NO<sub>x</sub> and PM. Therefore, this impact would not be cumulatively considerable and would be **less than significant with mitigation**.

### **Impact AQ-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations (*Less than Significant with Mitigation*)**

#### Mechanical and Hand Labor Treatments

Mechanical treatments would involve the use of off-road equipment such as mowers, chippers, tractors, masticators, and excavators. These types of equipment are often diesel powered and emit DPM. Hand labor treatments would involve the use of chainsaws, which, when powered with gasoline mixed with engine oil, emit VOCs and PM. TAC exposure for short durations is generally not quantified as cancer potency factors are based on lifetime exposure (estimated at 70 years) and there is considerable uncertainty in trying to evaluate the cancer risk from activities that would last only a small fraction of a lifetime (OEHHA 2015). In addition, concentrations of mobile-source DPM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005). At any given treatment area, VMP activities would be of short duration (1 to 5 days). VMP activities would not involve the construction of any homes or creation of new sensitive receptors, and would not expose sensitive receptors to substantial levels of TACs resulting in increased health risks.

Ultramafic rock, which can contain NOA, may be present on VMP parcels near SR 13, Joaquin Miller Road, Skyline Boulevard, and parcels near Lake Chabot. While mechanical treatment activities have the potential to disturb soil, treatment activities would be limited to 15 acres per year, with the area of disturbed ground being less than that. As described above, the BAAQMD requires implementation of fugitive dust control-related mitigation measures during construction/maintenance activities to minimize potential emissions or resuspensions of NOA, and enforces compliance with the NOA-related ATCM by requiring that the BAAQMD is notified of maintenance operations and approves asbestos dust mitigation plans prior to the commencement of maintenance activities. In addition to Mitigation Measures AQ-1 and GEO-1, implementation of **Mitigation Measure AQ-2 (Comply with Asbestos ATCM by Obtaining an Approved Asbestos Dust Mitigation Plan or Exemption)** would ensure that the City prepares and implements a BAAQMD-approved asbestos dust mitigation plan, and corresponding dust control BMPs, for treatment activities within potential NOA areas.

VMP treatment activities near individual sensitive receptors would be temporary and infrequent. For these reasons and those described above, the impact from these treatment types would be less than significant with mitigation. Additionally, though difficult to quantify or evaluate, VMP activities would decrease the risk of unpredictable, uncontrolled exposure to pollutant emissions due to large wildfires in the VMP area.

#### Grazing

Prescribed herbivory would involve transporting goats between VMP treatment areas. Emissions from vehicles used for transportation would be the main source of air quality-related pollutant emissions from this activity. Direct emissions from livestock are discussed in Section 3.7, "Greenhouse Gas Emissions, Climate Change, and Energy." The use of vehicles to transport

goats near individual sensitive receptors would be short in duration and infrequent. Therefore, the impact from this treatment type would be less than significant.

### Herbicides

This activity would involve the spraying of herbicides on surface fuels (such as French broom, Scotch broom, pampas grass, and jubata grass) and cut-and-daub application of herbicides on stumps of removed trees. Herbicides can be used in numerous formulations that vary in terms of emissions of VOCs and other compounds that could be harmful to sensitive receptors. As detailed in Chapter 2, *Project Description*, and Table 2-4, the application of herbicides in any individual treatment area would be temporary and infrequent, and the volumes used would be limited due to the treatment techniques used. Herbicide use would be conducted in compliance with BAAQMD's applicable permits and regulations, and other applicable laws and regulations related to herbicides (as detailed in Section 3.8, "Hazards and Hazardous Materials").

Furthermore, **Mitigation Measures HAZ-4 (Measures to Avoid or Minimize Adverse Effects on People, Pets, or Other Non-Target Organisms from Use of Herbicides)** and HAZ-5, include standard herbicide use requirements and measures to avoid or minimize adverse effects on people from use of herbicides. Therefore, this activity would not pose long-term or substantial health risks to nearby residents and workers near VMP treatment sites. Therefore, the impact from this treatment type would be less than significant with mitigation.

### Mitigation Measures

Mitigation Measure AQ-2 would limit the potential for sensitive receptors to be exposed to NOA by requiring the preparation and implementation of an asbestos dust mitigation plan. The implementation of Mitigation Measures AQ-1, GEO-1, HAZ-1, and HAZ-5 would further limit the potential for sensitive receptors to be exposed to pollutants.

#### **Mitigation Measure AQ-2: Comply with Asbestos ATCM by Obtaining an Approved Asbestos Dust Mitigation Plan or Exemption**

VMP-related ground-disturbing activities greater than 1 acre within potential NOA-containing areas (specifically areas near SR 13, Joaquin Miller Road, Skyline Boulevard, and parcels near Lake Chabot) will be required to comply with CARB's ATCM for NOA. The City and its contractors will prepare and implement an asbestos dust mitigation plan in compliance with the State Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations with the BAAQMD's implementation requiring submission of an Asbestos Dust Mitigation Plan Application, which includes a checklist of BMPs that must be implemented. The plan will specify actions to be taken during VMP treatment activities to minimize NOA emissions. The plan will also address specific emission sources as identified by the BAAQMD to be: track-out onto the paved public road; active storage piles; inactive disturbed surface areas and storage piles; traffic on unpaved on-site roads; earthmoving activities; off-site transport of materials; and post-project stabilization of disturbed soil surfaces. Specific measures to be implemented will include but not be limited to removing visible track out, keeping active storage piles covered or wet, controlling inactive areas or storage piles, maintain trucks and wet loads to prevent spillage, and limit vehicle speeds. The City and its contractors will submit the plan to BAAQMD for approval prior to implementation, and will not proceed with VMP implementation until BAAQMD has approved the plan and proposed BMPs or an exemption is received.

**Mitigation Measure AQ-1: Fugitive Dust BMPs**

See text for Impact AQ-2 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-1: Vehicle and Equipment Maintenance (VMP BMP GEN-8)**

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."

Conclusion

VMP activities would be performed in compliance with BAAQMD's applicable permits and regulations. Activities near individual receptors would be temporary and infrequent. Additionally, VMP activities would decrease the risk of unpredictable, uncontrolled exposure to pollutant emissions from wildfires. Any potential NOA-related impacts from VMP ground-disturbing activities in potential ultramafic rock areas would be fully mitigated by compliance with CARB's ATCM for NOA and implementation of Mitigation Measure AQ-2. Therefore, the VMP's impact on sensitive receptors from fugitive dust and other TACs would be **less than significant with mitigation**.

**Impact AQ-4: Result in Other Emissions Such as Odors Adversely Affecting a Substantial Number of People (*Less than Significant*)**

Activities associated with the VMP would not generate permanent or long-term objectionable odors but could generate short-term, temporary odors related to grazing livestock; cut, chipped, or stockpiled vegetation; and the operation of gasoline- or diesel-powered equipment.

VMP treatment activities would not include any land uses or operation types identified by BAAQMD as most likely to cause odors (e.g., landfills, wastewater treatment plants) (BAAQMD 2017a). Odors associated with grazing and gasoline- or diesel-powered equipment would not be significant because they would occur for brief periods at any given location. In addition, VMP activities would reduce the likelihood of future uncontrolled wildfires that would expose sensitive receptors to objectionable odors.

Conclusion

VMP activities could generate temporary odors related to grazing livestock; cut, chipped, or stockpiled vegetation; and the operation of fossil fuel-powered equipment. With respect to individual receptors, these activities would be short in duration and infrequent. In addition, VMP activities would reduce the likelihood of future uncontrolled wildfires that would expose

sensitive receptors to objectionable odors. Therefore, the potential for the VMP to create objectionable odors that would affect a substantial number of people would be **less than significant** and no mitigation is required.

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