Chapter 5
Alternatives

5.1 INTRODUCTION

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the project that would feasibly attain most of the identified project objectives but would avoid or substantially lessen one or more of the project's significant impacts. This chapter describes the alternatives to the VMP that were considered and evaluated for their potential environmental impacts. The CEQA requirements for consideration of alternatives are presented. The chapter then continues with a description of the alternative development process and an analysis of the alternatives carried forward. The chapter concludes with identification of the environmentally superior alternative.

5.2 CEQA REQUIREMENTS FOR ALTERNATIVES EVALUATION

The CEQA Guidelines require that an EIR evaluate a reasonable range of alternatives to a proposed project, including an alternative where no project would be developed. Although no clear rule exists for determining a "reasonable range," the CEQA Guidelines provide direction on defining the range of alternatives for consideration in the environmental document.

The range of alternatives to be developed under CEQA is governed by the "rule of reason," which requires that the EIR examine only alternatives that could feasibly attain most of the project's objectives and would avoid or substantially lessen one or more of the significant environmental impacts of the project. The range of feasible alternatives should be selected and presented in a manner that will foster public participation and informed decision making (CEQA Guidelines Section 15126.6[f]). In determining whether an alternative is feasible, lead agencies are guided by the general definition of feasibility found in CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

In accordance with CEQA Guidelines Section 15126.6(f)(1), the lead agency may consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent's control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied on in making the selection. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, and briefly explain the reason for their exclusion (CEQA Guidelines Section 15126[c]).

A "No Project Alternative" also must be considered. The No Project Alternative is the "existing conditions at the time the Notice of Preparation is published" as well as "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based

on current plans" (CEQA Guidelines Section 15126.6[e][2].). The No Project Alternative does not need to feasibly attain most of the project objectives or avoid or substantially lessen one or more of the significant environmental impacts of the project. "When the project involves revision of an existing plan, policy, or ongoing operation, the no-project alternative should reflect continuation of the existing plan, policy, or operation." (Kostka & Zischke, *Practice Under the California Environmental Quality Act* (CEB 2020) Section 15.19, citing CEQA Guidelines Section 15126.6[e][3][A].) "In such a situation, the no-project alternative should be described as a continuation of the existing operation." (Kostka & Zischke, *Practice Under the California Environmental Quality Act* (CEB 2020) Section 15.20, citing *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 Cal.App.4th 214, 254.) "The no-project analysis reflects whether failure to approve the project would preserve existing environmental conditions or instead would lead to other changes to the environment." (Kostka & Zischke, *Practice Under the California Environmental Quality Act* (CEB 2020) Section 15.19, citing CEQA Guidelines Section 15126.6[e][2].) The intent of the No Project Alternative is to allow decision makers to compare the impacts of approving the project against the impacts of not approving the project (CEQA Guidelines Section 15126[e][1]).

5.3 ALTERNATIVES DEVELOPMENT PROCESS

Public and stakeholder comments received during the public outreach process associated with development of the VMP and this EIR provided guidance on the consideration of alternatives. In addition, the VMP's goals and objectives and significant environmental impacts identified in this EIR were also considered while developing suitable alternatives that aim to achieve the primary project goals and objectives and avoid or substantially lessen significant environmental effects compared to the VMP.

5.3.1 Public Meetings and Comments

During development of the VMP, numerous public and stakeholder engagement meetings were conducted, including six workshops/meetings in 2017 and 2018 and 12 group meetings in spring 2019 (refer to Section 2.2.2 for more information). As part of the DEIR process to provide the public and responsible and trustee agencies an opportunity to ask questions and submit comments on the VMP and the scope of the DEIR, the City also held a public scoping meeting on November 20, 2019, during the public scoping period. The City received 41 public comments during the public scoping period for the DEIR, including several comments on the consideration of different alternatives.

5.3.2 Project Goals and Objectives

The following goals have been identified for the VMP:

- Reduce wildfire hazard on City-owned land and along critical access/egress routes within the City's VHFHSZ;
- Reduce the likelihood of ignitions and extreme fire behavior to enhance public and firefighter safety;

- Implement practices to avoid or minimize impacts to natural resources;
- Maintain an active role in regional efforts to reduce wildfire hazard in the Oakland hills.

The objectives of the VMP are as follows:

- Reduce the likelihood of catastrophic wildfires by limiting ignition potential, reducing fuel loads, and modifying fuel arrangements on City-owned lands.
- Reduce the likelihood of extreme fire behavior within the VMP area.
- Identify and define vegetation management actions that consider site-specific vegetation type, fuel hazard, treatment effectiveness, and ongoing maintenance requirements.
- Identify and prioritize fuel treatment areas based on fuel loads and arrangements, terrain, topographic exposure, and proximity to roads and structures.
- Retain vegetation where feasible to reduce wind exposure, retain soil and surface fuel moisture, and reduce the potential for soil erosion.
- Develop management recommendations that enable OFD to make informed, adaptive decisions on an annual basis (or more often as necessary) regarding vegetation management within the VMP area, considering the benefits of treatment, potential environmental effects, and treatment costs.
- Avoid, minimize, and/or reduce potential adverse effects of vegetation management on sensitive biological resources, water resources, aesthetics, soils, and slope stability.
- Increase the ability of OFD and other responding agencies to suppress wildfire in the VMP area in order to minimize wildfire impacts to VMP area resources.
- Routinely evaluate the effectiveness and implementation frequency of vegetation management actions within the VMP area.

5.3.3 Significant and Unavoidable Environmental Impact of the VMP

The VMP would result in one significant and unavoidable impact related to generating substantial temporary or periodic increase in ambient noise in violation of the City of Oakland noise thresholds (Section 3.10, Impact NOI-1). Mechanical treatment activities and the use of chainsaws during hand labor treatments would expose sensitive receptors to noise levels above the City's daytime weekday noise threshold of 80 dBA, resulting in a significant and unavoidable impact.

5.4 ALTERNATIVES CONSIDERED

The following alternatives were considered based on public input and because they would meet most of the VMP objectives, may be feasible, and would avoid or substantially reduce significant and unavoidable impacts of the VMP:

- Alternative 1: No Project Alternative
- Alternative 2: Reduced Vegetation Management Activities Alternative
- Alternative 3: No Herbicide Use Alternative
- Alternative 4: Reduced Herbicide Use Alternative

Aside from these four alternatives, no other alternatives were considered or dismissed.

5.4.1 Alternative 1: No Project Alternative

Characteristics of this Alternative

Under the No Project Alternative, the City would not implement a VMP to guide and direct targeted vegetation management activities to minimize the potential for ignitions, crown fire, and extreme fire behavior on City-owned land and along access/egress routes. Instead, the City would continue to conduct vegetation management activities consistent with existing (2017 and 2018) operations (refer to Table 3.1-1 for a summary of vegetation management activities conducted over the last 15 years). Under the No Project Alternative, the City would conduct approximately 1,100 acres of goat grazing and approximately 152 acres of roadside treatment and other activities each year, using a combination of hand labor and mechanical techniques. Similar to existing conditions, no chemical techniques (i.e., herbicides) would be used.

It is important to note that the underlying need for increased targeted vegetation management activities proposed under the VMP—to reduce wildfire risk in the City portions of the VHFHSZ—would remain unaddressed with implementation of the No Project Alternative. Without implementation of the VMP, the City would only be able to address a limited number of vegetation management activities annually based on the Public Works/OFD annual budget. By reducing the acreage of treatment that occurs in a given year compared to annual treatment acreages under the VMP, the No Project Alternative would fail to meet VMP goals and objectives. These goals and objectives, established in the midst of the region's pattern of catastrophic wildfires, include reducing wildfire hazard on City-owned land and along critical access/egress routes within the City's VHFHSZ; reducing the likelihood of ignitions and extreme fire behavior; implementing practices to avoid or minimize impacts to natural resources; reducing the likelihood of catastrophic wildfires by limiting ignition potential, reducing fuels loads, and modifying fuel arrangements on City-owned lands; and avoiding adverse effects to sensitive resources. The No Project Alternative would not meet the following VMP objectives: identifying site-specific vegetation management actions based on vegetation type, fuel hazard, treatment effectiveness, and requirements; identifying and prioritizing fuel treatment areas based on fuel load arrangements, terrain, topographic exposure, and proximity to roads and structures; developing management recommendations so that OFD can make informed

vegetation management decisions that consider the benefits of treatment, environmental effects, and costs; routinely evaluating the effectiveness of the VMP; and increasing the ability of the OFD and responding agencies to suppress wildfire.

As mentioned above, consideration of a No Project Alternative is required under CEQA Guidelines Section 15126(e)(1).

Impact Analysis

Annual goat grazing activities under the No Project Alternative would be consistent with the acreage treated under the proposed VMP. However, the area subject to hand labor and mechanical treatment techniques each year would be less than under the VMP, treating approximately 152 acres compared to an annual maximum of 555 acres of hand labor and mechanical treatment under the VMP. Thus, the No Project Alternative would have no impact related to construction in comparison to the VMP. Because no additional vegetation management activities would be completed under the No Project Alternative, no construction-related effects (e.g., air quality/GHG emissions, noise, traffic, and biological resources effects) would result because no additional construction-related vehicle trips, equipment operations, or ground disturbance would take place.

Goat grazing activities would occur primarily between May and August, while hand labor and the use of mechanical equipment would occur year-round as needed. Under the No Project Alternative, OFD's Fire Prevention Bureau would continue to operate an annual vegetation inspection program on public and private property in the VHFHSZ portion of the City, as mandated by City of Oakland Ordinance No. 11640. The inspection program identifies properties that are out of compliance with the City's defensible space standards and requires that inspections be conducted until properties are brought into compliance. Without approval of the VMP, the inspection program and vegetation management activities would continue, dependent upon the Public Works/OFD annual budget and consistent with past OFD vegetation management activities.

Under the No Project Alternative, OFD would continue to conduct vegetation management activities using current equipment and techniques. The City of Oakland Planning Code contains laws and standards that may be relevant to the VMP, in particular Section 17.120.050, Noise, and Section 17.120.060, Vibration. In addition, Section 17.120.04 from the City Planning Code establishes allowable noise level standards (City of Oakland 2020a). Because no changes in operation would take place, the No Project Alternative would result in no additional noise impact compared to the VMP, which would have a significant and unavoidable impact related to sensitive receptors.

The Oakland Hills is one of the highest risk areas in the country for devastating WUI fires. Because no additional acreage of vegetation management activities would be conducted under the No Project Alternative compared to the VMP, the wildfire risk throughout the VHFHSZ would not be reduced and fire hazard conditions would likely worsen. As indicated in recent risk assessments (Dudek 2019), without improved vegetation management practices, fuel loads and fire risk will continue to increase (Stephens et al. 2012), and future catastrophic wildfires in the region are likely to result in greater impacts to life, property, and the environment.

Additionally, the No Project Alternative would not include the requirements established in the VMP for close coordination between OFD and local volunteer and stewardship groups active in the VMP area. Without clear communication protocols in place between OFD and local stewardship groups, locally sponsored projects may conflict with City plans or goals for vegetation management, potentially resulting in greater environmental impacts.

In conclusion, the No Project Alternative would not meet any of the goals or objectives of the VMP, particularly reducing wildfire hazard on City-owned land and along critical access/egress routes within the City's VHFHSZ. Although it would reduce the VMP's significant and unavoidable noise impact on sensitive receptors and other significant impacts related to biological resources and other environmental resources, it would also fail to address the need for wildfire risk reduction identified by the City, OFD, stakeholders, and members of the public throughout the years-long VMP development process.

Under the No Project Alternative, the City would fail to comply with the following plans and policies related to wildlife risk reduction and fuel management:

- Governor Newsom's Strike Force report (State of California 2019), which stated that the growing risk of catastrophic wildfires has created an imperative for the state to act urgently and swiftly to expand fire prevention efforts;
- CAL FIRE's 2018 Strategic Fire Plan for California, which sets forth sets forth goals focused on fire prevention, improved natural resource management, and increased fire suppression efforts (CAL FIRE 2018);
- policies and objectives from the City of Oakland General Plan Open Space, Conservation, and Recreation Element (City of Oakland 1996);
- goals and objectives of the California Forest Carbon Plan to reduce GHG and other carbon emissions associated with management activities, conversion, wildfire events, and other disturbances (Forest Climate Action Team 2018);
- the BAAQMD's 2017 Bay Area Clean Air Plan and Regional Climate Protection Strategy, which provide a road map for the BAAQMD's future efforts to reduce air pollution (BAAQMD 2017); and
- policies related to wildfire risk reduction from the City's 2030 Equitable Climate Action Plan (City of Oakland 2020b).

5.4.2 Alternative 2: Reduced Vegetation Management Activities Alternative

Characteristics of this Alternative

Alternative 2 is a modified version of the VMP with reduced annual treatment acreage. Under Alternative 2, the City would conduct approximately 1,100 acres of goat grazing and approximately 300 acres of roadside treatment and other activities using a combination of hand labor, mechanical treatments, and herbicide treatments. Additionally, no vegetation

management activities would occur on urban and residential treatment areas, which total 47.5 acres. While vegetation treatment activities would still occur in close proximity to sensitive uses, the use of equipment generating noise of 85 dBA at 50 feet (such as chainsaws) would be prohibited within 90 feet of sensitive receptors, and the use of equipment generating noise of 88 dBA at 50 feet (such as a chipper or excavator) would be prohibited within 130 feet of sensitive receptors.

By reducing the acreage of treatment that occurs in a given year, vegetation would be more likely to become overgrown, resulting in a greater wildfire risk in the City portion of the VHFHSZ than under the VMP. Additionally, urban and residential treatment areas are considered Priority 1 treatment areas; eliminating vegetation management activities adjacent to these structures would result in a greater risk of catastrophic wildfires affecting structures than under the VMP and would conflict with the City's defensible space guidelines.

Alternative 2 was selected as an alternative to the VMP based on public input and because the restriction on equipment use near sensitive receptors would reduce significant and unavoidable noise impacts associated with mechanical treatment activities and the use of chainsaws during hand labor treatments.

Project Objectives

Alternative 2 would only partially meet VMP goals and objectives, such as reducing wildfire hazard on City-owned land and along critical access/egress routes within the City's VHFHSZ; reducing the likelihood of ignitions and extreme fire behavior; reducing the likelihood of catastrophic wildfires by limiting ignition potential, reducing fuels loads, and modifying fuel arrangements on City-owned lands; identifying and prioritizing fuel treatment areas based on fuel loads arrangements, terrain, topographic exposure, and proximity to roads and structures; and increasing the ability of the OFD and responding agencies to suppress wildfire.

Impact Analysis

Goat grazing activities under Alternative 2 would be conducted consistent with the acres treated under the VMP; however, hand labor, mechanical, and herbicide techniques would be reduced from VMP levels, treating approximately 300 acres annually compared to 590 acres under the VMP, with no treatment occurring in urban and residential parcels. Compared to the VMP, this alternative would reduce construction-related impacts associated with the VMP, including air pollutant and GHG emissions from operating equipment, traffic from vehicle and truck trips, and noise. The restrictions on the operation of loud construction equipment near sensitive receptors during hand labor treatments (i.e., chainsaws) and mechanical treatments (i.e., excavators and chippers) near sensitive receptors, noise levels would not exceed the City's weekday daytime threshold of 80 dBA. Thus, Impact NOI-1 would be reduced from a significant and unavoidable impact under the VMP to a less-than-significant level. Similarly, Alternative 2 would result in fewer impacts to sensitive habitats and nesting birds as a result of reducing the number of projects and overall ground disturbance relative to the VMP.

Reducing the acreage of vegetation treatment conducted on an annual basis would delay the reduction of fuel loads in individual treatment areas, however, resulting in an increased likelihood of ignition and catastrophic wildfires in the VHFHSZ compared with the VMP. A future wildfire in the region would likely be more damaging and result in greater impacts to life,

property, and the environment than under the VMP. Additionally, deferring vegetation management projects could result in the need for emergency work that tends to be addressed without adequate planning. Further, because fewer projects would occur under this alternative and no activities would occur on urban and residential parcels, Alternative 2 may result in additional impacts not identified for the VMP, such as increased public safety risks. For example, without the increased level of inspection and management proposed in the VMP, the potential exists for fallen branches and trees located on City property to damage utility lines or existing structures (i.e., residences) on private property.

In conclusion, Alternative 2, the Reduced Vegetation Management Activities Alternative, would meet some of the goals or objectives of the VMP; however, the reduced annual acreage of treatment would slow OFD's progress in addressing wildfire risk concerns. Although it would reduce the VMP's significant and unavoidable noise impact on sensitive receptors and other significant impacts related to biological resources and other environmental resources, it would fail to fully address the need for wildfire risk reduction to the level identified by the City, OFD, stakeholders, and members of the public.

5.4.3 Alternative 3: No Herbicide Use Alternative

Characteristics of this Alternative

Alternative 3 is a modified version of the VMP that excludes the use of herbicides for vegetation management. Other vegetation management methods described in the VMP (i.e., grazing, hand labor techniques, and mechanical techniques) would be used in lieu of herbicides. Under Alternative 3, the City would conduct approximately 1,100 acres of goat grazing and approximately 555 acres of roadside treatment and other activities using a combination of hand labor and mechanical techniques. Under this alternative, no herbicides would be used (compared to an annual maximum of 35 acres of proposed herbicide treatment under the VMP). All other maintenance activities described in Chapter 2, *Project* Description, of this EIR would be conducted as described in the VMP.

As background, in 2005, the City adopted Resolution 79133, which directed staff to evaluate the selective use of glyphosate and triclopyr for managing vegetation to reduce wildfire hazard in the City's Wildfire Prevention Assessment District. To date, herbicides have not been used for vegetation management on City-owned property or along roadsides in the VMP area. This VMP EIR process evaluates the potential environmental effects of herbicide use. However, the City also received feedback from the public during the VMP development and scoping process to consider a "no herbicide" alternative to address concerns about the potential impacts of herbicide use in the City. As such, Alternative 3 reflects public input on early drafts of the VMP.

Project Objectives

By eliminating herbicide treatment, Alternative 3 would be more likely to allow vegetation to become overgrown, increasing the wildfire risk and the potential for a catastrophic wildfire that would affect existing structures. Alternative 3 would only partially meet VMP goals and objectives such as reducing wildfire hazard on City-owned land and along critical access/egress routes within the City's VHFHSZ; reducing the likelihood of extreme fire behavior and catastrophic wildfires by limiting ignition potential, reducing fuels loads, and modifying fuel

arrangements on City-owned lands; identifying and prioritizing fuel treatment areas based on fuel load arrangements, terrain, topographic exposure, and proximity to roads and structures; and increasing the ability of the OFD and responding agencies to suppress wildfire.

Impact Analysis

Alternative 3 would require additional follow-up vegetation management activities involving a combination of grazing, hand removal techniques, and mechanical removal in some areas due to rapid regrowth of certain highly flammable vegetation types when removed and not treated with herbicide. Under Alternative 3, certain types of vegetation may be even more difficult to control without herbicides, resulting in persistent degraded habitat conditions. Because grazing, hand removal, and mechanical vegetation removal techniques may be less effective than herbicides, this alternative may also require the City to remove certain rapidly spreading/high fire risk plants, including such plants as eucalyptus, acacia, French broom, Scotch broom, pampas grass, and jubata grass, on a more frequent basis. As such, an increase in use of mechanical vegetation removal techniques across a greater area and on a more frequent basis would result in greater air pollutant emissions and more truck trips; in addition, greater noise effects could result, as this alternative would entail more worker trips and greater use of equipment, potentially in close proximity to sensitive uses. Accordingly, this alternative would result in more potentially significant environmental impacts than the VMP.

Alternative 3 would eliminate potential effects related to accidental spills, use of herbicides, and other risks associated with herbicide use. However, impacts related to hazards and hazardous materials are not identified as significant and unavoidable impacts of the VMP because all such impacts associated with the VMP would be mitigated to a less-than-significant level. Significant and unavoidable noise impacts associated with mechanical treatment activities and the use of chainsaws during hand labor treatments identified for the VMP would remain with Alternative 3.

Feasibility

Due to the need for increased frequency of vegetation removal, under this alternative, the City and OFD would require a larger number of employees and many more hours to treat a similar area compared to herbicide use and would be less effective, requiring more frequent treatment. It is estimated that if the City were to rely on hand removal and mechanical treatments in place of herbicide, it would cost the City up to 40 times more to treat these areas than under the VMP. The cost for herbicide treatments, not including any associated physical treatments, is approximately $250-$500 per acre. This reflects a range of potential vegetation conditions, vegetation types, and densities. The cost for hand removal and mechanical treatments is estimated at approximately $1,000-$4,000 per acre, using the same range of site-specific conditions.

A key difference in comparing costs of herbicide treatment to hand removal and mechanical treatment is the reduced effectiveness of these treatments, requiring repeated applications up to five times to achieve the effectiveness of a single herbicide treatment (DiTomaso, Kyser, et al. 2013) (as shown in Appendix D, *Biological Resources Information*, of this DEIR). Accounting for the need to conduct five work cycles with hand removal and mechanical treatments, the estimated treatment cost increases to $5,000-$20,000 per acre for hand removal and mechanical treatments compared to herbicide treatment.

Over the course of the 10-year planning timeframe for the VMP, these differences in effort and increased costs by not using herbicide treatment would result in an added cost ranging from $1,660,000 to $6,825,000 by using hand removal and mechanical treatments in place of herbicide to achieve a similar level of vegetation management. Accordingly, even though this alternative would achieve some of the project objectives, the substantial increase in cost compared to the proposed VMP renders this alternative infeasible (Pub. Res. Code Section 21061.1.).

In conclusion, Alternative 3, the No Herbicide Use Alternative, would meet some of the goals or objectives of the VMP; however, the elimination of herbicide use as an available vegetation management treatment would slow progress toward reducing fuel loads in the VMP area. This alternative would result in additional costs and staffing needs to conduct follow-up treatments in areas where mechanical and hand removal treatments are less effective than herbicide treatments. The significant and unavoidable noise impact of the VMP related to sensitive uses would not be reduced with this alternative and would likely be more severe than under the VMP because of the need for repeated hand labor or mechanical treatments in some locations.

5.4.4 Alternative 4: Reduced Herbicide Use Alternative

Characteristics of this Alternative

Alternative 4 is a modification of the VMP that would reduce, but not eliminate, herbicide application in the VMP area compared to the proposed VMP. Under Alternative 4, annual herbicide use would be reduced to a maximum of 10 acres of treatment for trees and 7.5 acres of treatment for shrubs (compared to the annual maximum of 20 acres of treatment for trees and 15 acres of treatment for shrubs under the VMP). Additionally, no herbicide application would occur within 100 feet of any creeks (which is 40 feet larger than the no-herbicide-use buffer from creeks proposed in Mitigation Measure HAZ-5). Further, under this alternative, the City would use only non-Roundup™ formulations of glyphosate. In contrast, the VMP allows non-Roundup™ formulations of glyphosate as well as triclopyr and imazapyr. Alternative 4 would only allow application of herbicides using the cut-and-daub application method with a hand brush or sponge; no hand spraying would be conducted under this alternative. The City would conduct approximately 1,100 acres of goat grazing, as with the VMP, along with approximately 572.5 acres of roadside treatment and other activities (a reduction from 590 acres with the VMP) using a combination of hand labor, mechanical, and herbicide techniques.

As described above for Alternative 3, in 2005, the City adopted Resolution 79133, which directed staff to evaluate the selective use of glyphosate and triclopyr for managing vegetation to reduce wildfire hazard in the City's Wildfire Prevention Assessment District. To date, herbicides have not been used for vegetation management on City-owned property or along roadsides in the VMP area. This VMP EIR process evaluates the potential environmental effects of herbicide use. However, the City also received feedback from the public during the VMP development and scoping process to consider a "reduced herbicide" alternative to address concerns about the potential impacts of herbicide use in the City. As such, Alternative 4 reflects public input on early drafts of the VMP.

Project Objectives

By reducing the acreage of herbicide treatment that occurs in a given year, vegetation would be more likely to become overgrown, increasing the wildfire risk and the potential for a catastrophic wildfire that would affect existing structures. Alternative 4 would only partially meet VMP goals and objectives such as reducing wildfire hazard on City-owned land and along critical access/egress routes within the City's VHFHSZ; reducing the likelihood of ignitions and extreme fire behavior; reducing the likelihood of catastrophic wildfires by limiting ignition potential, reducing fuels loads, and modifying fuel arrangements on City-owned lands; identifying and prioritizing fuel treatment areas based on fuel loads arrangements, terrain, topographic exposure, and proximity to roads and structures; and increasing the ability of the OFD and responding agencies to suppress wildfire.

Impact Analysis

Annual goat grazing, hand labor, and mechanical treatments activities under Alternative 4 would be consistent with the acreage treated under the VMP, for a total of 555 acres. However, the area subject to herbicide techniques each year would be less than under the VMP, treating approximately 17.5 acres annually, compared to an annual maximum of 35 acres, with no herbicide treatment occurring within 100 feet of creeks. Compared to the VMP, this alternative would reduce potential effects to biological resources and water quality by limiting herbicide application to occur at least 100 feet from a creek (i.e., outside of riparian areas) and prohibit spraying which may result in drift. Further, although impacts related to hazards and hazardous materials are not identified as significant impacts of the VMP, Alternative 4 would reduce potential effects related to accidental spills, chemicals, and other risks associated with herbicide use.

Reducing the acreage treated with herbicides on an annual basis would delay the reduction of fuel loads in individual treatment areas, however, increasing the likelihood of ignition and catastrophic wildfires in the VHFHSZ as vegetation conditions worsen. Under Alternative 4, certain types of vegetation may be more difficult to control with reduced herbicides, resulting in persistent degraded habitat conditions. Additionally, under this alternative, OFD would only use glyphosate and would be prohibited from using hand sprayers (only hand brushing or sponging would be conducted), which would reduce overall treatment options and effectiveness and increase costs. Glyphosate may not be as effective to treat certain types of vegetation as other herbicides (e.g., triclopyr, imazapyr), and excluding these herbicides may require the City to remove certain types of vegetation on a more frequent basis. As such, an increase in the frequency of herbicide application would result in more truck trips and air quality emissions, as well as more frequent ground disturbance.

Feasibility

Hand brushing or sponging under the cut-and-daub method is time consuming, requiring more labor, thereby increasing time and labor requirements for the City. As described in Alternative 3, areas proposed for herbicide treatment under the VMP if treated only with hand removal and mechanical treatments would require up to five additional treatment cycles to match the effectiveness of herbicide treatment (DiTomaso, Kyser, et al. 2013) (see Appendix D of this DEIR for more information). Using the same methodology as described in Alternative 3 above, over the course of the 10-year planning timeframe for the VMP these differences in effort and

increased costs result in an added cost ranging from $831,250 to $3,412,500 for not using herbicide and using hand removal and mechanical treatments in place of herbicide to achieve a similar level of vegetation management. Accordingly, this alternative is financially infeasible.

In conclusion, Alternative 4, the Reduced Herbicide Use Alternative, would meet some of the goals or objectives of the VMP; however, restrictions on the types and amounts of herbicide use as an available vegetation management treatment would slow progress toward improvement of fuel loads in the VMP area compared to the proposed VMP. This alternative would result in additional costs and staffing needs to conduct follow-up treatments in areas where mechanical and hand removal treatments are less effective than herbicide treatments. The significant and unavoidable noise impact of the VMP related to sensitive uses would not be reduced with this alternative and would likely be more severe because of the need for repeated hand labor or mechanical treatments in some locations.

5.5 COMPARISON OF ALTERNATIVES

In accordance with CEQA Guidelines Section 15126.6(e)(2), this section compares the EIR alternatives and identifies the environmentally superior alternative among the alternatives.

Table 5-1 compares the acres treated among the VMP and the four alternatives. The VMP, Alternative 3 (No Herbicide Alternative), and Alternative 4 would treat nearly the same acreage of vegetation (1,100 acres of goat grazing; 590 acres of roadside and parcels for VMP, 555 acres for Alternative 3, and 572.5 acres for Alternative 4). Alternative 1 (No Project Alternative) would treat the least amount of vegetation, reflecting what the City's current vegetation management practices. Alternative 2 (Reduced Vegetation Management Activities Alternative) would treat of the least vegetation but less than the VMP due to reduced vegetation management activities.

Table 5-1. Comparison of Acres Treated Among the VMP and Alternatives

Vegetation Management Activities	Acres of Treatment				
	VMP	Alternative 1: No Project Alternative	Alternative 2: Reduced Vegetation Management Activities Alternative	Alternative 3: No Herbicide Alternative	Alternative 4: Reduced Herbicide Use Alternative
Goat Grazing	1,100	1,100	1,100	1,100	1,100
Roadside and Parcel Treatments using Hand Labor, Mechanical, and Chemical Treatment Techniques	590	152	300	555	572.5

Alternative 1 (No Project Alternative) was not identified as the environmentally superior alternative because, although it would provide a reduction in vegetation management activities in the City portion of the VHFHSZ and thereby largely reduce construction-related impacts (e.g., air and GHG emissions, noise, traffic, biological resources) of the VMP, it would substantially increase the risk of wildfires in the region, resulting in greater impacts to life, property, and the environment.

Alternative 3 (No Herbicide Use) was not identified as environmentally superior because it would not reduce any significant and unavoidable impacts associated with the VMP. Alternative 3 would however, result in an incremental increase in truck trips, air pollutant emissions, and noise effects because this alternative would involve greater use of hand labor and mechanical techniques for vegetation management. Using hand labor and mechanical treatments in some locations may not be as effective at controlling highly flammable vegetation, particularly in areas that are difficult to access, and is anticipated to require additional follow-up treatments. Additionally, the increased use of hand labor and mechanical treatments would require more City staff, increasing costs, which would not be feasible for the City. This alternative would be fairly similar to the VMP and would avoid potential water quality impacts such as accidental spills and other impacts associated with herbicide use. In conclusion, Alternative 3 was not deemed environmentally superior because it would not reduce significant and unavoidable impacts associated with the VMP; would result in an increase in air quality emissions, truck trips, and noise effects adjacent to sensitive uses; may not be as effective at controlling vegetation.

Both Alternative 2 (Reduced Vegetation Management Activities Alternative) and Alternative 4 (Reduced Herbicide Use Alternative) would reduce the acreage of vegetation treatment completed in a given year, thereby resulting in less construction-related emissions, traffic on local roads, and other potential effects on biological resources. Between these two alternatives, Alternative 4 would result in less adverse effects to biological resources and water quality by limiting herbicide application to a maximum of 17.5 acres annually, limit herbicide application from occurring within 100 feet of a creek, limiting the City to the use of only one herbicide, and prohibiting spraying and allowing only hand brushing and sponging for herbicide application throughout the VMP area. The cut-and-daub method is time consuming, requiring more labor, thereby increasing costs for the City. Additionally, because hand removal and mechanical treatments may still occur adjacent to sensitive receptors, significant and unavoidable noise effects would still occur under Alternative 4. Alternative 2, on the other hand, would prohibit the use of loud equipment near sensitive receptors, avoiding a significant and unavoidable noise impact on sensitive receptors. For this reason, Alternative 2 is considered the environmentally superior alternative of the alternatives to the VMP evaluated in this chapter.

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Considering the issues described above, the VMP is considered to be environmentally superior to the other identified alternatives. In comparison to the alternatives, the VMP provides the most appropriate balance of reducing wildfire hazard through limiting ignition potential, reducing fuel loads, and modifying vegetation in an effective manner; avoiding and minimizing impacts to the natural environment through implementation of practices; prioritizing management needs based on fuel loads, terrain, and proximity to roads and structures; and ensuring vegetation management needs are addressed in a reasonable timeframe to protect life

and property and reduce public safety and wildfire hazards. The VMP would also ensure that vegetation management activities are conducted consistently in compliance with the methods and approaches identified in the VMP to reduce effects to natural resources and prevent excess and unnecessary vegetation removal. The VMP would also increase the ability of OFD to suppress wildfire in the VMP area, further protecting VMP area resources and require the routine evaluation of effectiveness of vegetation management activities.