Sibley Volcanic Regional Preserve

East Bay Regional Park District
Healthy Parks Healthy People

LAND USE PLAN AMENDMENT
ENVIRONMENTAL IMPACT REPORT SCH# 2017062055

Incorporating the McCosker Parcel and Western Hills Open Space

2018

FINAL ENVIRONMENTAL IMPACT REPORT
SCH# 2017062055
Certified November 20, 2018
(Resolution No. 2018-11-287)

Planning and GIS Department
Acquisition, Stewardship and Development Division
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, California 94605

EAST BAY REGIONAL PARK DISTRICT

RESOLUTION NO.: 2018 – 11 – 287

November 20, 2018

AUTHORIZE THE CERTIFICATION OF THE ENVIRONMENTAL IMPACT REPORT FOR THE ROBERT SIBLEY VOLCANIC REGIONAL PRESERVE LAND USE PLAN AMENDMENT; ADOPTION OF THE ASSOCIATED MITIGATION, MONITORING, AND REPORTING PROGRAM; AND ADOPTION OF THE CEQA FINDINGS REPORT: ROBERT SIBLEY VOLCANIC REGIONAL PRESERVE

WHEREAS, a Land Use Plan Amendment (LUPA or project) has been prepared to restore and enhance creeks in the McCosker sub-area and expand public access, trails, camping, picnicking, and interpretive opportunities, and to provide for public safety and resource protection at Robert Sibley Volcanic Regional Preserve; and

WHEREAS, on January 18, 2017, the East Bay Regional Park District (Park District) conducted a public scoping meeting to obtain comments on the proposed scope of an Environmental Impact Report (EIR) for the Sibley LUPA, and on June 19, 2017, published a Notice of Preparation of an EIR for the project; and

WHEREAS, a Draft EIR was prepared that provides an evaluation of the potential for the proposed project to result in significant environmental impacts, recommends mitigation measures to address those potential impacts, and concludes that with mitigation measures included in the Mitigation, Monitoring, and Reporting Program (MMRP), these potential impacts would be reduced to a less than significant level; and

WHEREAS, on July 5, 2018, the Park District issued a Notice of Availability to the California Governor's Office of Planning and Research, and issued a Notice of Availability of the Draft EIR for the project on July 6, 2018, to responsible and trustee agencies and the public, initiating the public review period; and

WHEREAS, on July 23, 2018, the Park District's Park Advisory Committee reviewed the LUPA and Draft EIR and recommended its consideration by the full Board of Directors; and

WHEREAS, on July 25, 2018, a public meeting was held at Richard C. Trudeau Conference Center in Oakland to give community members an opportunity to comment on the LUPA and Draft EIR; and

WHEREAS, on August 2, 2018, the Park District's Board Executive Committee reviewed the LUPA and Draft EIR and recommended its consideration by the full Board; and

WHEREAS, during the 45-day public review period, no individual or agency provided substantial evidence that a significant adverse environmental impact would occur, or that required substantial changes or alterations to the project, the impact analysis; and

WHEREAS, the Final EIR consists of the Draft EIR, Comments, and Response to Comments on the Draft EIR, and has been completed in compliance with CEQA; and

WHEREAS, the Final EIR was presented to the Park District's Board of Directors who reviewed and considered the information prior to considering approval of the project; and

WHEREAS, the EIR has been prepared, publicized, circulated, and reviewed in accordance with applicable law, and reflects the independent judgment of the Park District; and

WHEREAS, feasible alternatives to the proposed project have been analyzed and the EIR concludes that the project is the environmentally superior alternative; and

WHEREAS, the MMRP consists of mitigation measures recommended in the EIR for the project and mitigation and monitoring requirements, and has been completed in compliance with the California Environmental Quality Act (CEQA); and

WHEREAS, the MMRP and the Findings Report were presented to the Park District's Board of Directors on November 20, 2018, who reviewed and considered the information contained in these CEQA components prior to considering approval of the project; and

WHEREAS, the East Bay Regional Park District is the custodian of the documents and other material which constitute the record of the proceedings upon which its decision is made at its administrative office, located at 2950 Peralta Oaks Court, Oakland, California, 94605;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the East Bay Regional Park District hereby certifies that the Environmental Impact Report for the Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment has been prepared in compliance with CEQA, reflects the Park District's independent judgment and analysis, and was presented to the Board of Directors which reviewed and considered the information in the Final EIR, and:

BE IT FUTHER RESOLVED, that the Board of Directors hereby certifies that the Environmental Impact Report has been prepared in compliance with CEQA; and

BE IT FUTHER RESOLVED, that the Board of Directors adopts the Mitigation, Monitoring, and Reporting Program; and

BE IT FUTHER RESOLVED, that the Board of Directors adopts the Findings Report; and

BE IT FURTHER RESOLVED that the General Manager is hereby authorized and directed, on behalf of the Park District and in its name, to execute and deliver such documents and such acts as may be deemed necessary or appropriate to accomplish the intentions of this resolution.

Moved by Director Rosario, seconded by Director Lane, and adopted this 20th day of November, 2018 by the following vote:

FOR:	Colin Coffey, Ellen Corbett, Whitney Dotson, Beverly Lane, Dee Rosario, Dennis Waespi, Ayn Wieskamp.
AGAINST:	None.
ABSTAIN:	None.
ABSENT:	None.

Dennis Waespi, Board President

CERTIFICATION

I, Yolande Barial Knight, Clerk of the Board of Directors of the East Bay Regional Park District, do hereby certify that the above and foregoing is a full, true and correct copy of Resolution No 2018-11-287 adopted by the Board of Directors at a regular meeting held on November 20, 2018.

Acting Clerk

ROBERT SIBLEY VOLCANIC REGIONAL PRESERVE
LAND USE PLAN AMENDMENT

Incorporating the McCosker Parcel and Western Hills Open Space

Draft Environmental Impact Report

(Incorporating Final EIR Revisions)

SCH# 2017062055

July 2018, ***revised November 2018 to incorporate Final EIR revisions***

Text revisions are made to clarify, correct, or amplify materials in the Draft EIR. These revisions do not result in any new significant impacts that were not considered in the Draft EIR or any increase in the severity of any potentially significant impacts set forth in the Draft EIR. Added text is indicated with <u>underlined text</u>. Text deleted is shown in ~~strikeout~~.

ROBERT SIBLEY VOLCANIC REGIONAL PRESERVE LAND USE PLAN AMENDMENT

Environmental Impact Report

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EXECUTIVE SUMMARY

This draft Environmental Impact Report (EIR) has been prepared pursuant to the California Environmental Quality Act (CEQA) to inform: the lead agency, East Bay Regional Park District (District) Board of Directors; Responsible Agencies, agencies involved in funding or approving the project; Trustee Agencies, agencies responsible for natural resources affected by the Project; and the public, about the potential significant environmental effects of the *2018 Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment* (Project).

The Project purpose is to: 1) append the 1985 Land Use Development Plan (LUDP) to incorporate the Western Hills and McCosker sub-areas and developed local trails into Robert Sibley Volcanic Regional Preserve; and 2) preserve the rich heritage of natural and cultural resources and provide open space, trails, and safe and healthful recreation and environmental education in accordance with the District 2013 Master Plan.

ES.1 Project Location

The Project is in the East Bay Hills at the boundary of Alameda and Contra Costa Counties between Tilden Regional Park and Redwood Regional Park and includes three sub-areas totaling 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve: 1) Robert Sibley Volcanic Regional Preserve (Preserve); 2) Western Hills Open Space (Western Hills); and 3) the McCosker Parcel (McCosker), along with the 240-acre Huckleberry Regional Preserve. Refer to *Figure ES-1, Project Location.*

ES.2 Proposed Actions

Project recommendations include two main components: 1) McCosker sub-area creek restoration and enhancement; and 2) recreation and public access improvements. The recreation and public access improvements include six main elements: 1) improvements to existing staging areas, 2) improvements to existing roadways, 3) bridge installation, 4) trail system expansion, 5) recreation facility development, and 6) improvements to utility infrastructure as illustrated in *Figure ES-2, Land Use Plan Amendment Project Overview.*

Table 2-1, Proposed Actions by Location and the discussion below provide a summary of these actions. *Figure 2-5, Proposed Actions Preserve Sub-area, Figure 2-6, Proposed Actions Western Hills Sub-area, Figure 2-7, Proposed Actions McCosker Sub-area, Figure 2-8, McCosker Creek Restoration Area,* and *Figure 2-9, Proposed Actions Huckleberry Sub-area* identify the locations of each of the Project actions. *Table 2-3, Comparison of Proposed Recreation and Public Access Actions with Existing Conditions* provides a comparison of the proposed recreation and public

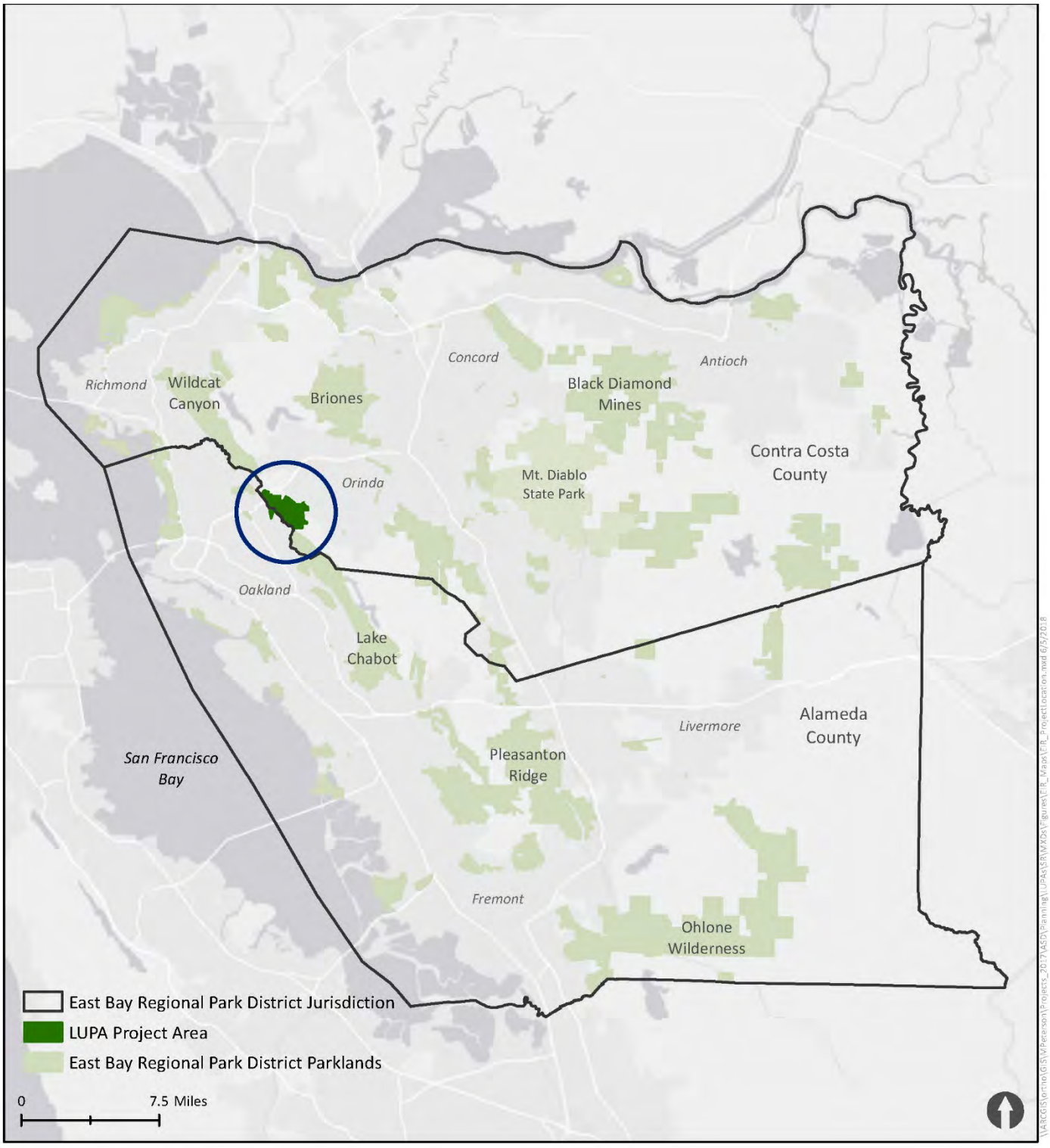

FIGURE ES-1: PROJECT LOCATION

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

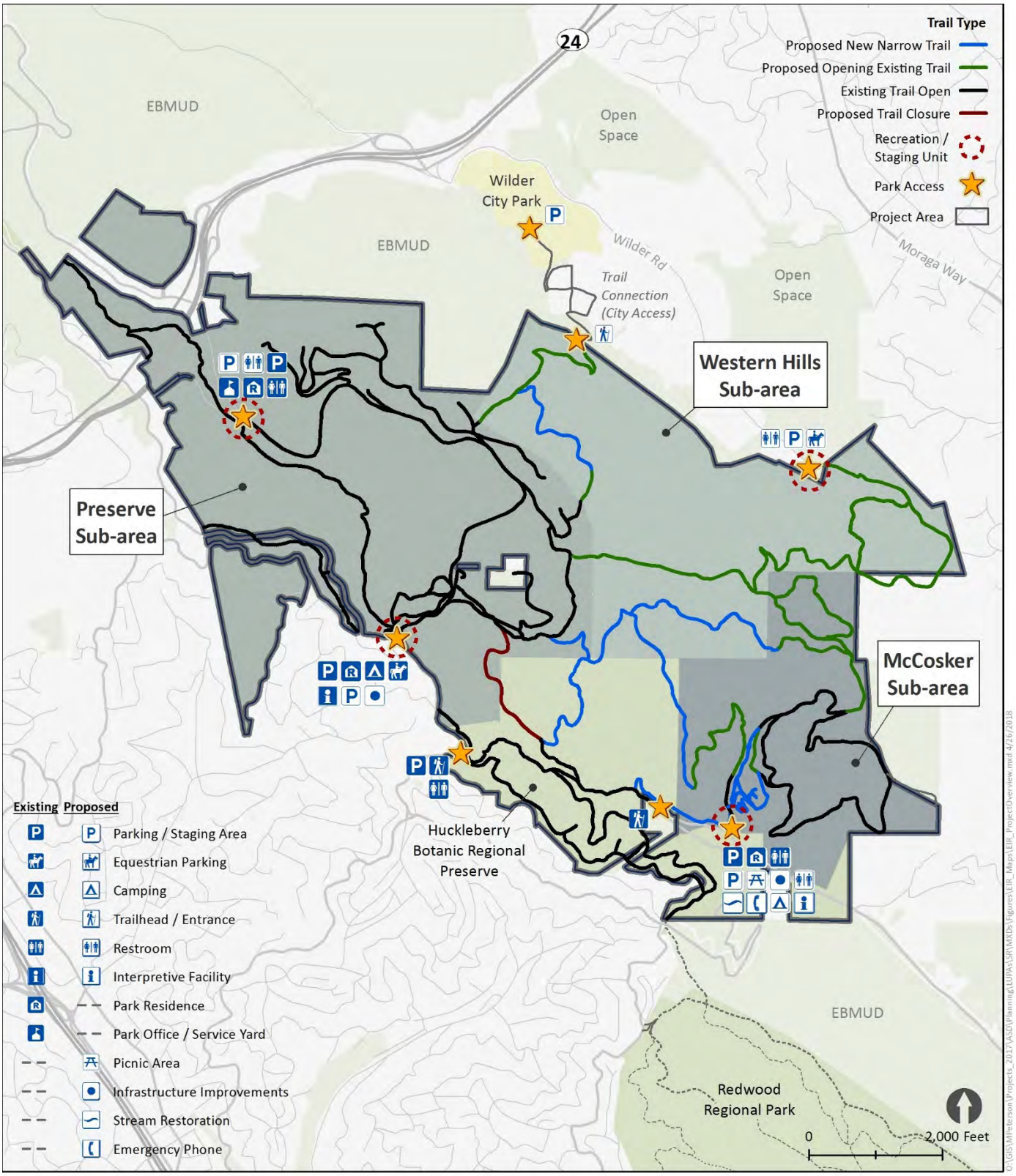

FIGURE ES-2: PROJECT OVERVIEW

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

access actions with existing conditions. *Table 2-6, Construction Activities for Proposed Actions* identifies factors involved in completing each of the Project elements.

Overall proposed improvements would add: 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 196 parking spaces and three two-horse trailers, one new walk-in access, one new camping area, and a new nature trail and interpretive gathering area. The trail system would provide: approximately 4.3 miles of existing ranch roads and four miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.2 miles. Considering the 639 additional acres that would be added to Robert Sibley Regional Preserve with the McCosker and Western Hills sub-areas, the Preserve parkland acreage would nearly double, while overall trail density as measured by miles per acre would decrease by 0.4 percent.

ES.2.1 Summary of Project Actions

Creek Restoration

Creek restoration activities in the McCosker sub-area would involve restoration and enhancement of: Alder Creek, including construction of the Alder Creek Nature Trail, and restoration and enhancement of Leatherwood Creek. Restoration work would involve: 1) excavating approximately 30,300 cubic yards of soil to daylight the creek and create a stable channel; 2) reconstructing approximately 2,900 linear feet of the creek bed with a mix of boulder cascades and step pools, including access for rainbow trout to Alder Creek; 3) replacing the soil on existing graded terraces to create the Fiddleneck Field recreation area; 4) removing approximately 2,720 linear feet of buried culverts ranging in diameter from 12 inches to 60 inches and concrete debris off-site and abandoning approximately 460 linear feet of culverts in place along Leatherwood Creek; and 5) re-establishing riparian habitat along the two creek channels.

Improvements to Existing Staging Areas

Improvements to the Sibley Staging Area parking lot in the Preserve sub-area would involve expanding the existing parking capacity from 38 spaces to approximately 73 spaces. Improvements to the Old Tunnel Road site would involve repairing, repaving and restriping the existing site to improve the existing road conditions and increase parking capacity from 13 to approximately 33 vehicles. Improvements to the Eastport Staging Area in the McCosker sub-area would involve: 1) installing a new entry sign with the name *Eastport Staging Area*; 2) performing minimal grading to add up to five parking spaces and direct drainage to a stormwater treatment feature; and 3) replacing an existing gate with equestrian-friendly, self-closing gate. Wayfinding signs directing uses to each of the staging areas is also proposed.

Improvements to Existing Roadways and Utilities

Improvements are proposed for two existing roadways, referred to herein as the Ninebark Trail and the Meadow Barley Trail in the McCosker sub-area. The Ninebark Trail would provide a connection between the Eastport Station Staging Area and the Fiddleneck Field parking area to accommodate visitors and maintenance and emergency vehicle access. The Meadow Barley Trail road section improvements would include: reconstructing an all-weather gravel road, stabilizing

and repaving an existing roadway section, and developing a hammer-head turn-around near the residence to facilitate emergency and maintenance vehicle circulation, as well as serving as part of the recreation trail system. Grading associated with these improvements would occur in conjunction with the creek restoration work and the installation of the bridges.

Utility improvements would include installation of one 4,000-gallon water tank, 3,200 linear feet of new water line, and undergrounding 1,100 linear feet of utility lines connecting to Fiddleneck Field in the McCosker sub-area; and installing a 1,000-gallon water tank at the existing backpack camp in the Preserve sub-area.

Bridge Installation

Circulation improvements in the McCosker sub-area would include three crossings of Alder Creek: 1) Ninebark Public Vehicle Bridge 2) Fern View Terrace Maintenance Vehicle Bridge, and 3) Alder Creek Maintenance Vehicle Bridge. The three structures would be designed as arched bridges with natural creek bottoms.

Trail System Expansion

The Project trail system would incorporate: 1) existing trails in Robert Sibley Volcanic Regional Preserve; 2) the trail system set forth in the previously permitted Western Hills Open Space Long Term Management Plan; and 3) new trails proposed within the three sub-areas with connections through the eastern side of Huckleberry Preserve. This expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities.

Proposed actions would include: 1) 2.6 miles of minor changes in use on ranch road trails (0.4 miles of added bike use in the Preserve sub-area and 2.2 miles of added dogs-on-leash use in the McCosker sub-area); 2) opening 5.2 miles of existing narrow and ranch road trails; 3) constructing 3.9 miles of new narrow trails to enhance connectivity between the Preserve, Western Hills and McCosker sub-areas and other District parklands; 4) reconstructing 0.14 miles of new ranch road to complete connections in the McCosker sub-area; 5) realigning 0.4 miles of narrow trail and closing and restoring 0.6 miles of over steep trail; and 6) constructing a new 0.4-mile hiker-only nature trail.

Recreation Facility Development

Recreation facility development for this area would occur in two main areas in the McCosker sub-area: the 2.8-acre Fiddleneck Field and 0.3-acre Fern View Terrace, and would include: a combined group camp/interpretive destination site, restrooms, interpretive and picnic facilities, parking, and operations facilities. These areas and facility types would meet the criteria of a Recreation/Staging Unit.

ES.3 Projects Incorporated by Reference

ES.3.1 CEQA Provisions

CEQA encourages incorporation by reference to eliminate repetitive discussions and to focus the CEQA analysis of this draft EIR on issues that have not been previously addressed. Consistent with CEQA Guidelines Section 15150, various technical studies, analyses and reports were used in the preparation of this draft EIR and are incorporated herein by reference. The documents and other sources used in preparation of this draft EIR are identified in Chapter 6- Report Preparation Organizations and Persons Consulted.

Copies of these referenced documents are maintained at the District administration office where they can be reviewed by the public on request in accordance with the CEQA Guidelines Section 15150(b).

ES.3.2 Summary of Actions Covered under Previous CEQA Analysis

A summary of the actions previously analyzed under CEQA are described below. By building on the work contained in the following documents, and providing additional analysis as necessary, this EIR provides public agencies, decision-makers, and interested parties the information needed to evaluate Project.

1985 Robert Sibley Volcanic, Huckleberry Botanic, and Claremont Regional Preserves Land Use Development Plan (LUDP) and EIR

The 1985 LUDP and EIR emphasizes education/research/study, designates quarry faces as a Geologic Special Protection Feature, and identifies improvements, including the development of an interpretive facility related to the site volcanic and geologic features, a backpack camp for 12-16 persons, a park residence, and enlargement of the Main Staging Area to accommodate 60 cars and allow for a bus turn-around and a group gathering place. The interpretive facility, park residence, a gathering area at the interpretive pavilion, and backpack camp have been completed. The existing staging area allows for a bus turn-around, but currently accommodates only 38 parking spaces. The District certified the EIR and adopted the LUDP on September 26, 1985, Resolution 1985-09-281.

2006 Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment (LUPA) and Mitigated Negative Declaration (MND)

The 2006 LUPA and MND rescinded the 300-person/60-parking space group camp use from Sibley Volcanic Regional Preserve proposed in a 2004 draft LUPA, while retaining the following recommendations that have since been completed: parking along Old Tunnel Road, trail improvements, designation of special protection features, and establishment of park security residence-office.

2004 Second Supplemental EIR for the Montanera Project

The *2004 Second Supplemental EIR for the Montanera Project* (Wilder residential development) provided for an on-site open space area known as the 389-acre area west of the residential development and adjacent to the Preserve sub-area referred to as the Western Hills Open Space Area, a new trailhead at the (former) Art and Garden parking area (referred to herein as the Red-tailed Hawk Staging Area) and the 250-acre Texas parcel (referred to herein as McCosker sub-area) to be transferred to the District. The City of Orinda certified the *2004 Second Supplemental EIR for the Montanera Project* on February 5, 2005 with Resolution 13-05.

2010 East Bay Regional Park District Wildland Hazard Reduction and Resource Management Plan and EIR

In 2010 the Board of Directors approved a *Wildfire Hazard Reduction and Resource Management Plan* (*Hazard Reduction Plan)* and Environmental Impact Report (Resolution No:201-04-103), specifically directed at the urban interface, the boundary between open space parklands and adjacent residential neighborhoods, including areas contained within the Project area. The *Hazard Reduction Plan* was developed to reduce the risks from wildfires in identified high hazard areas on District parklands through fuel reduction actions that are conducted in a manner that mitigates adverse environmental effects and implements resource and habitat management goals. This plan provides basic guidelines for protecting environmental values, enhancing habitat, restoring native vegetation and setting priorities for treatments while reducing wildfire hazards.

2016 McCosker Checklist Amendment and Notice of Exemption (NOE)

The McCosker Checklist Amendment was adopted by the District Board of Directors to incorporate this newly acquired parkland into the existing open parkland Robert Sibley Volcanic Regional Preserve on April 19, 2016 (Resolution No:2016-04-100). This amendment identified minor improvements allowing for removal of the property from land bank status and the opening of a small parking area and two miles of existing ranch road trails to the public.

ES.4 Summary of Impacts

Under CEQA Section 15382, a significant impact in the environment is defined as "…*a substantial, or potentially substantial, adverse change in any of the physical conditions with the area affected by the Project including land, air, water, minerals, flora, fauna, ambient nice, and objects of historic or aesthetic significance. A social or economic change by itself shall not be considered a significant effect on the environment.*"

ES.4.1 Significant Unavoidable Impacts

As discussed in *Section 3, Project Analysis,* build out of the Project would not result in any significant unavoidable impacts with implementation of the mitigations.

ES.4.2 Potential Areas of Known Controversy to the District

This draft EIR addresses the areas of environmental sensitivity known to the District, and/or raised by agencies and the public during the scoping process. There are seven primary areas of controversy that have been raised in relation to the Project.

Habitat and Special Status Species

The Project area contains habitat for the following federal and State listed species: Pallid manzanita (Federally Threatened, State Endangered); Alameda whipsnake (Federally Threatened, State Threatened, Critical Habitat); and California red-legged frog (Federally Threatened). There are concerns that implementation of the Project would impact the designated critical habitat for these species. *Section 3.4, Biological Resources*, contains mitigation measures that would reduce potentially significant impacts to plants and/or wildlife that may occur from the implementation of the Project to below the level of significance.

Trail Demand

There is a demand for multi-use trails to accommodate the variety of uses within the Project area including hiking, equestrian, cyclist, and dog walking. Currently, there are few narrow, natural surface trails and a lack of trails generally that provide connectivity for mountain bike cyclists within the Project area. *Chapter 2.0 Project Description*, includes components for designating trails and roadways for the variety of uses, including development of narrow, natural surface, multi-use trails. *Section 3.4, Biological Resources* evaluates potential impacts to plants and wildlife and provides mitigation measures that would reduce the potentially significant impacts that may occur from the implementation of the Project to below the level of significance. *Section 3.14, Public Services, Section 3.15, Recreation* and *Section 3.16, Transportation and Traffic* discuss trail uses and bicycle, pedestrian and transit facilities within and connecting to the Project area that would enhance trail system connectivity and serve to distribute use over the Project area and provide mitigation measures that would reduce the potentially significant impacts that may occur from the implementation of the Project to below the level of significance

Trail Uses

Trails adjoining the Project area contain varying use designations ranging from hiker-only to fully multi-use accommodating hiking, cycling, equestrian use, and dog-walking. Issues have been raised relative to providing trail trips that provide continuity when traveling from one area to another, as well as concerns that various trails uses may conflict with each other, and/or with policies of the adjoining lands. *Chapter 2.0, Project Description*, includes components for designating trails and roadways for the variety of uses, including development of narrow, natural surface, multi-use trails. *Section 3.4, Biological Resources*, *Section 3.14, Public Services, Section 3.15, Recreation* and *Section 3.16, Transportation and Traffic* evaluate potential impacts relating to trail uses and provides mitigation measures that would reduce the potentially significant impacts that may occur from the implementation of the Project to below the level of significance.

Over Development

There are issues raised concerning overdeveloping the recreation development area within the McCosker sub-area. *Chapter 2.0, Project Description*, provides a description of the development as being limited to previously disturbed areas and contained within Recreation/Staging Units that make up approximately one percent of the parkland area consistent with the District designation of a Regional Preserve. This Chapter also illustrates how program elements can be combined, parking can be screened, and access can be controlled along restored creek channels to minimize the area that would be developed for recreation, while providing design features, posted regulations, and permitted recreation uses in some areas to control use. *Section 3.4, Biological Resources*; *Section 3.8, Hazards and Hazardous Materials; Section 3.14, Public Services*; *Section 3.15, Recreation;* and *3.16, Transportation and Traffic* evaluate potential impacts relating to the development of recreation facilities and provides mitigation measures that would reduce the potentially significant impacts that may occur from the implementation of the Project to below the level of significance.

Fire Hazards

There are issues raised concerning fire hazards associated with development of a destination recreation area that includes camping within the McCosker sub-area. *Chapter 2.0, Project Description*, provides a description of precautionary design features and fuel management programs for minimizing fire hazards. *Section 3.14, Public Services*, and *Section 3.8, Hazards and Hazardous Materials* describe staffing and procedures already in place to monitor public use, minimize potentially hazardous situations, and respond to emergencies. These sections, along with *Section 3.6, Geology and Soils* and *Section 3.9, Hydrology and Water Quality* evaluate potential impacts relating to the development of recreation facilities and provide mitigation measures that would reduce the potentially significant impacts that may occur from the implementation of the Project to below the level of significance.

Water Quality

There are issues raised concerning water quality and sediment transport associated with development of the McCosker sub-area. *Chapter 2.0, Project Description*, provides a description of design features for restoring tributaries that contribute flows into San Leandro Creek that have largely been filled and culverted and are now deteriorating. *Section 3.6, Geology and Soils* and *Section 3.9, Hydrology and Water Quality* describe procedures that would be put in place in place in accordance with National Pollutant Discharge Elimination System (NPDES) program to protect water quality during and post construction that would reduce the potentially significant impacts that may occur from the implementation of the Project to below the level of significance.

Traffic Safety

There are issues raised concerning traffic and visitor and community safety around the Project area. *Chapter 2.0, Project Description*, describes components for creating a safer environment, which include restricting parking along roadways near staging areas where visibility is restricted, dispersing use, adding parking, and encouraging use of alternative modes transportation where feasible and appropriate to reduce congestion that could result from a single point of entry.

Installation of wayfinding signs is also recommended to identify a clear path of arrival to the various entry points. *Section 3.16, Transportation and Traffic* evaluates potential impacts relating to traffic safety relative to implementing the Project.

ES.4.3 Potential Impacts Found Not to be Significant

In the analysis undertaken to develop this Draft EIR set forth in *Section 3.0, Project Analysis*, the District determined that there are several environmental issue areas pursuant to CEQA that are not expected to have significant impacts resulting from implementation of the Project. These issue areas are agricultural resources, land use and planning, mineral resources, and population and housing. These issues are briefly described below.

Agriculture and Forestry Resources

The zoning for the Project area does not include any agricultural uses, and surrounding land use does not include farmland. No prime farmland, unique farmland, or farmland of statewide importance is present. Therefore, no significant impacts on agricultural resources are anticipated.

Land Use and Planning

The Project would not divide or disrupt the physical arrangement of an established community; neither would it produce a significant impact on applicable land use plans or policies adopted by state and federal agencies. Implementation of the Project would result in the District assuming responsibility for management of the established Western Hills Open Space Conservation Easement in accordance with the *2004 Second Supplemental EIR for the Montanera Project*, U.S. Fish and Wildlife Service Biological Opinion, and a Long Term Management Plan previously permitted and approved by environmental regulatory agencies. Improvements within the Project area would be compliant with pre-approved land use requirements and would not be expected to constitute a substantial alteration of the present or planned land use for the area. Therefore, no significant impacts to land use and planning are anticipated.

Mineral Resources

Although extraction of mineral resources has played an important historical role of the lands now contained within the Preserve, there are currently no mining activities within the Project area and the Project does not propose any mineral extraction activities in the future. Interpretation of past mineral extraction activities currently covered for the Preserve sub-area would be expanded upon in District interpretive programs and exhibits in the future. Reestablishment of mining operations for the extraction of mineral resources is not a part of the Project. Therefore, no significant impacts to mineral resources are expected.

Population and Housing

The Project elements would be wholly contained within District lands and would result in implementation of restoration, conservation and recreation activities that are consistent with the District Master Plan. These activities are not expected to impact population and housing growth in the area. No new residential homes are planned as a part of the Project. The Project site is contained within existing designated open space boundaries. As such, implementation of the

Project would not be expected to displace housing. Improvements within the Project area would not be expected to affect existing housing or create demand for additional housing. Therefore, no significant impacts to population and housing are anticipated.

ES.4.4 Potential Project Impacts

Implementation of the Project has the potential to result in adverse environmental impacts. If an impact is significant, CEQA requires feasible measures to minimize the impact. Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the resource. CEQA requires that all feasible mitigation be undertaken, even if it does not reduce impacts to a less than significant level of impact CCR Title 14(3) §15126.4 (a)(1).

Potential significant impacts were identified for the following environmental topics: aesthetics, air quality, biological resources, cultural resources-cultural tribal resources, geology and soils, greenhouse gases, hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, traffic and transportation, and utilities and service systems. The analysis undertaken in support of this draft EIR has determined that impacts for these topic areas are less than significant or could be mitigated to below the threshold of significance.

Table ES-1, Summary of Impacts and Mitigation Measures, presents potentially significant impacts related to each issue area analyzed that would be expected to result from implementation of the Project. This table also presents mitigation measures and level of significance after mitigation for each issue area analyzed in the draft EIR.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATIONS

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
AESTHETICS			
Impact AES-3: **Visual Quality and Character** Project improvements could substantially alter the existing visual character or quality of the site and its surroundings.	**S**	**Mitigation Measure AES-3-1: Recreation/Stating Area Units - Grading Plans** Prior to completion of final plans and specifications for improvements in the Recreation/Staging Units, the District shall review the grading plans to ensure that the new grades will minimize impacts on the surrounding environment. During construction grading techniques shall be employed to create natural appearing landforms and avoid excessive contrast between graded areas and existing surroundings. Completion of this measure shall be monitored and enforced by the District. **Mitigation Measure AES-3-2: McCosker Sub-area - Site Structure Design** The District shall require that new structures in the McCosker sub-area be finished in unobtrusive colors and materials that fit with the natural character of the surrounding area, as a means of minimizing potential effects to the visual characteristics of the site. Prior to completion of final plans and specifications, the District shall review these documents to ensure that new structures are designed to blend in with their surroundings to the extent practicable. Completion of this measure shall be monitored and enforced by the District. **Mitigation Measure AES-3-3: Project-wide - Construction Staging** The District shall require construction contractors to stage construction vehicles and equipment in designated staging areas outside the view area of the Pinehurst Road when not in use. Vehicles shall be kept clean and free of mud and dust before leaving the Project site (Refer to *Measure Air-2*). Completion of this measure shall be monitored and enforced by the District. Also Refer to **Mitigation Measure BIO2-b: Project-wide: Habitat Mitigation and Monitoring to Mitigate for Temporary Impacts to Riparian Habitat**	**LTS**
AGRICULTURE AND FORESTRY RESOURCES			
There are no impacts related to Agriculture and Forestry Resources.			
AIR QUALITY			
Impact AIR-2: Generate Air Pollutant Emissions Project construction would generate air pollutant emissions that could violate air quality standards.	**S**	**Mitigation Measure AIR-2-1: Project-wide - Basic Construction Mitigation Measures** The EBRPD and project contractor shall implement the Basic Construction Mitigation Measures during construction activities as follows: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt tracked-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. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways and driveways 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.	**LTS**

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		• 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 airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • 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. • Post a publicly visible sign with the telephone number and person to contact at the EBRPD regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	
BIOLOGICAL RESOURCES			
Impact BIO-1: Habitat Modifications The Project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	**S**	**Mitigation Measure BIO-1a - Project-wide: General Conservation Measures to Protect Habitat Quality for All Special-status Species.** The District's construction contractor(s) shall implement the following general avoidance and minimization measures to protect federally listed species and their habitats during construction: • Before starting ground disturbing activities within construction sites and along each part of the proposed trail routes, the District shall clearly delineate the boundaries of the construction area with fencing, stakes, or flags. Contractors shall be required to restrict all construction-related activities to within the fenced, staked, or flagged areas. Contractors shall maintain all fencing, stakes, and flags until the completion of construction-related activities in that area. • Prior to construction, Lead Biologist shall oversee the delineation of the habitat of the CRLF and AWS within the construction sites with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of CRLF and AWS and pallid manzanita habitat. Sensitive habitat areas, including CRLF and AWS habitat and known populations, and jurisdictional waters, shall be clearly indicated on the Project plans. • To prevent CRLF and AWS from moving through the construction area, the District or its contractors would install temporary wildlife exclusion fencing in the McCosker sub-area and the Preserve Sub-area (i.e., Sibley parking expansion). Final fence design and location shall be determined in consultation with USFWS and CDFW. • Where wildlife exclusion fencing is not installed and ground disturbing activity is occurring (e.g., trail construction), the Lead Biologist will clear the area prior to the start of ground disturbing activity. • A USFWS-approved biological monitor would be on-site during installation of the fencing to relocate (as authorized in the Biological Opinion) any CRLF or AWS outside the construction area. The fencing shall be inspected by the qualified biological monitor on a daily basis during construction activities to ensure fence integrity. Any needed repairs to the fence shall be performed on the day of their discovery. After construction has been completed, the exclusion fencing would be removed within 72 hours. • Any construction-related disturbance outside of these boundaries, including driving, parking, temporary access, sampling or testing, or storage of materials, shall be prohibited without explicit approval of the Lead Biologist. New access driveways shall not extend beyond the delineated construction work area boundary. Construction vehicles shall pass and turn around only within the delineated construction work area boundary or local road network. Where new access is required outside of existing roads or the construction work area, the route shall	**LTS**

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		be clearly marked (i.e., flagged and/or staked) prior to being used, subject to review and approval of the Lead Biologist. • Excavated soils shall be stockpiled in disturbed areas lacking native vegetation. • All detected erosion caused by Project-related impacts (i.e., grading or clearing for new roads) shall be remedied immediately upon discovery. • The introduction of exotic plant species shall be avoided first through prevention, followed by physical or chemical methods. Construction equipment shall arrive at the Project area free of soil, seed, and vegetative debris to reduce the likelihood of introducing new weed species. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. All earth-moving equipment, gravel, fill, or other materials will be weed-free. Construction operators will ensure that clothing, footwear, and equipment used during construction is free of soil, seeds, vegetative matter or other debris or seed-bearing material before entering the park or from an area with known infestations of invasive plants and noxious weeds. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means approved by California Department of Fish and Wildlife (CDFW) and the United States Fish and Wildlife Service (USFWS). • Use of herbicides as vegetation control measures shall be used only when mechanical means have been deemed ineffective. All uses of such herbicidal compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and state and federal legislation as well as additional Project-related restrictions deemed necessary by the CDFW and/or USFWS. No rodenticides shall be used. • The introduction of soil-borne pathogens shall be avoided by following the District's Pathogen Controls Best Management Practices, described in Section 3.4.1 Regulatory Framework. • If federal listed wildlife species are found on the site during Project construction, construction activities shall cease in the vicinity of the animal until the animal moves on its own outside of the Project area (if possible). The wildlife resource agency(ies) with jurisdiction over the species shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary if the animal does not move on its own. A report shall be prepared by the Lead Biologist to document the activities of the animal within the site; all fence construction, modification, and repair efforts; and movements of the animal once again outside the exclusion fence. This report shall be submitted to the District and pertinent wildlife agencies with jurisdiction over the wildlife species. • Immediately prior to conducting vegetation removal or grading activities inside fenced exclusion areas, the Lead Biologist or a qualified biologist shall survey within the exclusion area to ensure that no federal or state listed species are present. The Lead Biologist or a qualified biologist shall also monitor vegetation removal or grading activities inside fenced exclusion areas for the presence of federal listed species. • Before steep-walled holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If listed species are trapped, the USFWS and/or CDFW, as appropriate, shall be contacted to determine the appropriate method for relocation. • All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods and with a diameter of 4 inches or more shall be inspected for federal listed species before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a listed species is discovered inside a pipe, that section of pipe shall not be moved until the appropriate resource agency, with jurisdiction over that species, has been consulted to determine the appropriate method for relocation. If necessary, under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity until the animal has escaped.	

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		• All vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. Contractor equipment shall be checked for leaks prior to operation and repaired when leaks are detected. Fuel containers shall be stored within appropriately-sized secondary containment barriers. The Lead Biologist shall be informed of any hazardous spills within 24 hours of the incident. Hazardous spills shall be immediately cleaned up and the contaminated soil shall be properly disposed of at a licensed facility. If vehicle or equipment maintenance is necessary, it would be performed in the designated staging areas. • All temporarily disturbed areas shall be returned to pre-project conditions or better. • Project-related vehicles would observe a 15-mile-per-hour speed limit on unpaved roads within the limits of construction. **Mitigation Measure BIO-1b: Project-wide: Avoidance, Minimization, and Compensation for Impacts to Special-Status Plants.** The District will implement measures to avoid and minimize potential adverse effects on special status plants. Prior to conducting work and during work, the following measures will be implemented. • A complete botanical survey of the action area will be completed using the Service's Guidelines for *Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants* (USFWS, 2000) and CDFW *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG, 2000). Surveys shall maximize the likelihood of locating special-status species, be floristic in nature, include areas of potential indirect impacts, be conducted in the field at the time of year when species are both evident and identifiable, and be replicated and spaced throughout the growing season to accurately determine what plants exist on the site. The purpose of these surveys will be to identify the locations of special-status plants. The extent of mitigation of direct loss of or indirect impacts on special-status plants will be based on these survey results. • Locations of special-status plants in proposed construction areas will be recorded using a global positioning system (GPS) unit, and flagged in the field. The GPS data will be used to create digital and hardcopy maps for distribution to construction inspectors and contractors to inform them of areas where disturbance is prohibited. • If initial screening by a Service-approved biologist identifies the potential for special- status plant species to be directly or indirectly affected by a specific project, the biologist will establish an adequate buffer area to exclude activities that would directly remove or alter the habitat of an identified special-status plant population or result in indirect adverse effects on the species. • Access may be restricted around special-status plant populations through appropriate management plans. This may include signage, buffers, seasonal restrictions, and design or no access, depending on the sensitive species in question. • The Project proponents will oversee installation of a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4 feet (1.2 meters) tall around any established buffer areas to prevent encroachment by construction vehicles and personnel. A Service-approved biologist will determine the exact location of the fencing. The fencing will be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and will be checked and maintained weekly until all construction is complete. The buffer zone established by the fencing will be marked by signs prohibiting disturbance of special status plants. • No grading, clearing, storage of equipment or machinery, or other disturbance or construction activity will occur until all temporary construction fencing has been installed by the District, and inspected and approved by the qualified biologist.	

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		• Any special-status species observed during surveys will be reported to the Service and CDFW so observations can be added to the California Natural Diversity Database (CNDDB). • If avoidance is not feasible, rare plants and their seeds shall be salvaged and relocated, and habitat restoration shall be provided to replace any destroyed special-status plant occurrences at a minimum 1:1 ratio based on area of lost habitat. Compensation for loss of special-status plant populations may include the restoration or enhancement of temporarily impacted areas, and management of restored areas. Restoration or reintroduction may be located on-site (i.e., within the project footprint) or at a nearby suitable off-site area. At a minimum, the restoration areas shall meet the following performance standards by the fifth year: – The compensation area shall be at least the same size as the impact area. – Native vegetation cover shall comprise at least 70 percent of the vegetation cover in the impact area. – Monitoring shall demonstrate the continued presence of rare plants in the restoration area. – Invasive species cover shall be less than or equal to the invasive species cover in the impact area. Additionally, restored populations shall have greater than the number of individuals of the impacted population, in an area greater than or equal to the size of the impacted population, for at least three (3) consecutive years. **Mitigation Measure BIO-1c: Project-wide: California Red-legged Frog Avoidance and Minimization Measures.** The District will implement measures to avoid and minimize potential adverse effects to California red-legged frog (CRLF) within suitable habitat for this species (scrub, grassland, oak woodland, mixed woodland, riparian woodland, eucalyptus woodland and ruderal and agricultural/ornamental habitat). Prior to conducting work and during work, the following measures will be implemented. • Instream disturbances shall be performed during the dry season when ~~McCosker Stream~~Alder Creek flows are minimal (e.g., May 15 to October ~~15~~31). • A qualified biologist shall perform a preconstruction survey of the Project area no more than 2 weeks prior to construction to determine whether CRLF or other special status species are present in work areas. General minimum qualifications for the qualified biologist are a 4-year degree in biological sciences or other appropriate training and/or experience in surveying, identifying, and handling CRLF. • If special-status wildlife species are known to occur in the Project area, immediately prior to the start of work each day, a qualified biologist will conduct a visual inspection of the construction zone and adjacent areas, as appropriate. If a special-status wildlife species is found on the Project site, work in the vicinity will be delayed until the species moves out of the site on its own, or is relocated by a qualified biologist with permission from the wildlife agencies. • In construction areas containing CRLF or other special status species habitat, a qualified biological monitor shall perform periodic inspections of the Project site to verify the absence of CRLF and other special status species. • If a CRLF is located, work shall cease in the immediate area and the U.S. Fish and Wildlife Service shall be notified before work is reinitiated. Additional measures including fulltime or spot check biological monitoring and/or exclusion measures for CRLF may be implemented during the remainder of construction following consultation with the Service. • The USFWS-approved biologist will remove and destroy from within the Project area any individuals of non-native species, such as bullfrog, crawfish, and cetrarchid fishes, to the maximum extent possible.	

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		Mitigation Measure BIO-1d: Project-Wide: Alameda Whipsnake Avoidance and Minimization Measures The District will implement measures to avoid and minimize potential adverse effects to Alameda whipsnake (AWS) within suitable habitat for this species (scrub, grassland, oak woodland, mixed woodland, riparian woodland, and ruderal and agricultural/ornamental habitat). The District will develop and implement an AWS protection and monitoring plan, to be approved by the USFWS during informal consultation under FESA. The following protective measures will be included: • The District shall provide the names and credentials of a biologist qualified to act as a construction monitor to USFWS for approval at least 15 days prior to commencement of work. • The USFWS-approved biologist will survey the site two weeks prior to the onset of work activities and immediately prior to commencing work. If AWS is found, work in the vicinity will be delayed until the species moves out of the site on its own, or the approved biologist will contact the USFWS to determine whether relocating the species is appropriate. • Ground disturbing work shall be performed during the period when AWS are active, April 1 to October 31, to minimize potential impacts to hibernating snakes. • Exclusion fencing will be placed near the grading limit for the duration of the grading and construction, and removed within 72 hours of completion of work, to prevent AWS from entering the Project site. • No monofilament plastic will be used for erosion control. • Sites within AWS habitat will be hand-cleared of vegetation, or a qualified biologist will survey the area immediately prior to equipment clearing • Upland habitats used by AWS will be restored as feasible, and the lost habitat will be compensated according to a ratio agreed upon with wildlife agencies. **Mitigation Measure BIO-1e: Project-Wide: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged Frog and Alameda Whipsnake Habitat.** To restore temporarily impacted habitat for California Red-legged Frog (CRLF) and Alameda Whipsnake (AWS), the District shall prepare and implement a Revegetation Plan (Plan) with detailed specifications for minimizing the introduction of invasive weeds and restoring all temporarily disturbed areas, and shall ensure that the contractor successfully implements the Plan. The Plan shall indicate the best time of year for seeding to occur. To facilitate preparation of the Plan, the District shall ensure that, prior to construction, a botanist (experienced in identifying sensitive plant species in the Project area) performs additional preconstruction surveys of the areas to collect more detailed baseline vegetation composition data, including species occurrence, vegetation characterization (tree diameter size, etc.), and percent cover of plant species. Photo documentation shall be used to show pre-project conditions. The HMMP shall outline measures to restore, improve, or re-establish upland habitat for CRLF/AWS on the site, and shall include the following elements: 1. Name and contact information for the property owner of the land on which the mitigation will take place. 2. Identification of the water source for supplemental irrigation, if needed. 3. Identification of depth to groundwater. 4. Topsoil salvage and storage methods for areas that support special-status plants. 5. Site preparation guidelines to prepare for planting, including coarse and fine grading.	

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation

6. Plant material procurement, including assessment of risk of introduction of plant pathogens through use of nursery-grown container stock vs. collection and propagation of site-specific plant materials, or use of seeds.
7. Planting plan outlining species selection, planting locations and spacing, for each vegetation type to be restored.
8. Planting methods, including containers, hydroseed or hydromulch, weed barriers and cages, as needed.
9. Soil amendment recommendations, if needed.
10. Irrigation plan, with proposed rates (in gallons per minute), schedule (i.e. recurrence interval), and seasonal guidelines for watering
11. Site protection plan to prevent unauthorized access, accidental damage and vandalism
12. Weeding and other vegetation maintenance tasks and schedule, with specific thresholds for acceptance of invasive species
13. Performance standards by which successful completion of mitigation can be assessed in comparison to a relevant baseline or reference site, and by which remedial actions will be triggered;
14. Success criteria, which at a minimum require the restoration or compensation sites meet the following performance standards by the fifth year following restoration, as outlined in *Table 3.4-8*:

- Temporarily impacted areas are returned to pre-project conditions or greater
- Native vegetation cover shall be at least 70 percent of baseline/impact area native vegetation cover
- No more cover by invasive species than the baseline/impact area

15. Monitoring methods and schedule.
16. Reporting requirements and schedule.
17. Adaptive management and corrective actions to achieve the established success criteria.
18. Educational outreach program to inform operations and maintenance departments of local land management and utility agencies of the mitigation purpose of restored areas to prevent accidental damages.

TABLE 3.4-8
MINIMUM SUCCESS CRITERIA FOR VEGETATION RESTORATION

Parameter	Field Indicator/Measurement
Vegetative Cover	**Non-native Grassland, Coyote Brush Scrub, Riparian Woodland, Mixed Woodland, Ruderal, Agricultural/Ornamental:** 70 percent relative cover (relative cover is cover compared with baseline) of typical native and naturalized species known from the McCosker region by the end of the fifth monitoring year. **Individual Native Trees:** 65 percent survivorship by the fifth monitoring year.
Invasive Species	At the end of the fifth monitoring year, a restoration area shall have no more cover by invasive species than the baseline. Invasive plant species shall be defined as any high-level species on the California Invasive Plant Council Inventory.

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		Mitigation Measure 1f: Project-wide: Avoid and Minimize Impacts to Nesting Migratory Birds and Raptors. All construction activity associated with restoration and development of recreational infrastructure will avoid take of migratory birds and their eggs and nests, including golden eagles and other raptors, according to the restrictions of the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. Project activities will not remove any trees during nesting season (February 1 through July 31) unless first inspected by a qualified biologist and determined to be lacking active nests. Preconstruction nesting surveys shall be conducted during nesting season within 14 days of the start of construction activities. If pre-construction surveys identify nesting birds, construction activities near these trees will not commence until the young have fledged, as determined by a qualified biologist. A suitable avoidance buffer will be determined in consultation with CDFW, depending on the species of nesting bird. Completion of this measure shall be monitored and enforced by the District. **Mitigation Measure BIO-1g: Project-Wide: Avoid and Minimize Impacts to Dusky-footed Woodrat.** A USFWS-approved biologist will conduct a preconstruction survey for San Francisco dusky-footed woodrats and other species that may be inhabiting woodrat nests no more than 24 hours before construction in suitable habitat and will be onsite during construction activities in potential habitat to ensure that woodrats and their nests encountered during construction are avoided. To the greatest extent practicable, no vegetation should be removed within 5 meters (16.4 feet) of the perimeter of a woodrat den to provide full natural cover in the area directly adjacent to the den. Where it is necessary to remove vegetation within a radius of 5 to 15 meters (woodrat core area territory), clear cutting in this area shall be avoided, but some thinning of vegetation may proceed. Fifty-five percent of the woody understory and a minimum of 60 percent of the woody overstory shall be retained. Completion of this measure shall be monitored and enforced by the District. **Mitigation Measure BIO-1h: McCosker Sub-area: Avoid and Minimize Impacts to Special-status Bat Species.** In advance of tree and structure removal, a preconstruction survey for special-status bats shall be conducted by a qualified biologist to characterize potential bat habitat and identify active roost sites within the Project site. Should potential roosting habitat or active bat roosts be found in trees and/or structures to be removed under the project, the following measures shall be implemented: • Removal of trees and structures shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, and outside of bat maternity roosting season (approximately April 16~~5~~ – August ~~31~~14) and outside of months of winter torpor (approximately October 16~~15~~ – February 28), to the extent feasible. • If removal of trees and structures during the periods when bats are active is not feasible and active bat roosts being used for maternity or hibernation purposes are found on or in the immediate vicinity of the Project site where tree and structure removal is planned, a no-disturbance buffer of 100 feet shall be established around these roost sites until they are determined to be no longer active by the qualified biologist. • The qualified biologist shall be present during tree and structure removal if active bat roosts, which are not being used for maternity or hibernation purposes, are present. Trees and structures with active roosts shall be removed only when no rain is occurring or is forecast to occur for three days and when daytime temperatures are at least 50°F. • Removal of trees with active or potentially active roost sites shall follow a two-step removal process: 1. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using chainsaws. 2. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or other equipment (e.g. excavator or backhoe).	

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		• Removal of structures containing or suspected to contain active bat roosts, which are not being used for maternity or hibernation purposes, shall be dismantled under the supervision of the qualified biologist in the evening and after bats have emerged from the roost to forage. Structures shall be partially dismantled to significantly change the roost conditions, causing bats to abandon and not return to the roost. **Mitigation Measure BIO-1i: McCosker Sub-area - Avoid and Minimize Impacts to Fish** If worksites require dewatering, fish shall be captured and relocated to avoid injury and mortality and minimize disturbance during the construction season. The following guidelines shall apply: • The District shall consult with CDFW to provide preservation and avoidance measures commensurate with the CDFW standards. • Prior to and during the initiation of construction activities, a qualified CDFW-approved biologist and other approved fisheries biologists shall be present during installation and removal of clear-water creek diversions. • For sites that require flow diversion and exclusion, the work area will be blocked by placing fine-meshed nets or screens above and below the work area to prevent state or federally listed species from re-entering the work area. To minimize entanglement, mesh diameter will not exceed 5 mm. The bottom edge of the net or screen will be secured to the channel bed to prevent fish from passing under the screen and avoid scour by flow. Exclusion screening will be placed in low velocity areas to minimize impingement. Screens will be checked weekly and cleaned of debris to permit free flow of water. • Before removal and relocation begins, the qualified fisheries biologist will identify the most appropriate release location(s). In general, release locations should have water temperatures similar to (<3.6°F difference) the capture location and offer ample habitat (e.g., depth, velocity, cover, connectivity) for released fish, and should be selected to minimize the likelihood of reentering the work area or becoming impinged on exclusion nets or screens. • The means of capture will depend on the nature of the work site, and will be selected by a qualified fisheries biologist. Complex stream habitat may require the use of electrofishing equipment (e.g., Smith-root LR-24 backpack electrofisher), whereas in outlet pools, aquatic vertebrates and invertebrates may be captured by pumping down the pool and then seining or dipnetting. Electrofishing will be used only as a last resort. • When feasible, initial fish relocation efforts will be performed several days prior to the scheduled start of construction. To the extent feasible, flow diversions and species relocation will be performed during morning periods. The fisheries biologist will survey the flow exclosures throughout the diversion effort to verify that no state or federally listed fish or aquatic invertebrates are present. Afternoon pumping activities should generally not occur and pumping should be limited to days when ambient air temperatures are not expected to exceed the limits allowed by NMFS guidelines. Air and water temperatures will be measured periodically, and flow diversion and species relocation activities will be suspended if temperatures exceed the limits allowed by NMFS guidelines. • Handling of fish and aquatic invertebrates will be minimized. When handling is necessary, personnel will wet hands or nets before touching them. • Prior to translocation, fish that are collected during surveys will be temporarily held in cool, aerated, shaded water using a five-gallon container with a lid. Overcrowding in containers will be avoided; at least two containers will be used and no more than 25 fish will be kept in each bucket. Aeration will be provided with a battery-powered external bubbler. Fish will be protected from jostling and noise, and will not be removed from the container until the time of release. A thermometer will be placed in each holding container and partial water changes will be conducted as necessary to maintain a stable water temperature. Fish will not be held more	

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		than 30 minutes. If water temperature reaches or exceeds NMFS limits, the fish and other aquatic species will be released and relocation operations will cease. • If mortality during relocation exceeds three percent, relocation will cease and CDFW will be contacted as soon as feasible. **Mitigation Measure BIO-1j: Preserve Sub-area Eucalyptus Woodland: Avoidance and Protection of Overwintering Monarch Butterfly Colonies.** Construction activities in and around potential butterfly overwintering sites shall occur outside of the overwintering season (November 1 to March 31), to the greatest extent feasible, to avoid potential impacts on monarch butterfly overwintering habitat. However, when it is not feasible to avoid the overwintering season and construction activities take place during this time, the following measures shall apply: • Preconstruction surveys shall be conducted for overwintering monarch butterfly sites within 100 feet of the construction areas. • Surveys for overwintering aggregations of monarch butterflies shall be conducted over the winter season (November to first week of March) prior to construction activities. A minimum of two surveys shall be conducted: one during Thanksgiving week and the other during the week of January 1. Surveys shall follow survey methods specified by the Xerces Society for Invertebrate Conservation (Xerces, 2004). • If an active overwintering site is located, work activities shall be delayed within 100 feet of the site location until avoidance measures have been implemented. Appropriate avoidance measures shall include the following measures (which may be modified as a result of consultation with the CDFW to provide equally effective measures): – If the qualified wildlife biologist determines that construction activities would not affect an active overwintering site, activities may proceed without restriction. – A no-disturbance buffer may be established around the overwintering site to avoid disturbance or destruction until after the overwintering. The extent of the no-disturbance buffers shall be determined by a qualified wildlife biologist in consultation with the CDFW. – Throughout the year, the District shall avoid removing or trimming trees utilized by monarch butterflies or trees adjacent to the winter roost to prevent indirect changes to the humidity, wind exposure, and temperature within the immediate vicinity of the roost site. Any routine tree trimming shall be done between April and August to eliminate the risk of disturbance to monarch colonies, and shall be conducted under the guidance of a qualified monarch butterfly specialist if butterflies have been documented in the Project area.	
Impact BIO-2: **Riparian Habitat** The Project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.	**S**	**Measure BIO-2: Project-wide: Minimize Disturbance to Riparian Habitat** For work occurring adjacent to riparian habitat, riparian areas shall be clearly delineated with flagging by a qualified biologist. Riparian areas shall be separated and protected from the work area through silt fencing, amphibian-friendly fiber rolls (i.e., no monofilament), or other appropriate erosion control material. Material staging, and all other Project-related activity shall be located as far possible from riparian areas. If riparian areas cannot be avoided, any temporarily impacted areas shall be restored to pre-construction conditions or better at the end of construction (see *Mitigation Measure BIO-2b: Habitat Mitigation and Monitoring Plan*). **Mitigation Measure BIO-2b: Project Wide: Habitat Mitigation and Monitoring to Mitigate for Temporary Impacts to Riparian Habitat** If temporary disturbance to riparian habitat within the Project area cannot be avoided, the Revegetation Plan (Plan) discussed in **Mitigation Measure BIO-1e: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged Frog and Alameda Whipsnake Habitat,** shall be implemented at all riparian habitat	**LTS**

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		temporarily impacted by construction activities. The Plan shall outline measures to restore, improve, or re-establish riparian habitat on the site.	
Impact BIO-3: Wetlands This Project could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	**S**	**Mitigation Measure BIO-3a: Project-wide: Avoid and Minimize Impacts to Wetlands and Waters of the U.S. and of the State** A jurisdictional wetland delineation shall be conducted to determine the extent of waters of the U.S. and waters of the state within the Project component footprints and anticipated construction disturbance area. The Project shall be designed to avoid and/or minimize direct impacts on wetlands and/or waters under the jurisdiction of the USACE, RWQCB, and CDFW to the extent feasible. **Mitigation Measure BIO-3b – Project-wide: Habitat Mitigation and Monitoring to Mitigate for Temporary Impacts to Wetlands and Waters of the U.S. and of the State** If temporary disturbance to wetland habitat within the Project area cannot be avoided, the Revegetation Plan (Plan) discussed in **Mitigation Measure BIO-1e: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged Frog and Alameda Whipsnake Habitat,** shall be implemented at all wetlands or waters of the U.S. or of the State temporarily impacted by construction activities. The Plan shall outline measures to restore, improve, or re-establish wetland habitat on the site.	**LTS**
CULTURAL AND TRIBAL RESOURCES			
Impact CUL-1: Archaeological Resources The Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5	**S**	**Mitigation Measure CUL-1: Project-wide - Unanticipated Discovery Protocol for Archaeological Resources** If prehistoric or historic-era archaeological resources are encountered during Project implementation, the District and/or its contractors shall immediately cease all construction activity within 50 feet of the find and flag off the area for avoidance (in accordance with EBRPD Board Resolution No. 1989-4-124 and State law). The District and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the find within 24 hours of discovery and notify the District of their initial assessment. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. If the District determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines § 15064.5), or a tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. If avoidance is not feasible, the District shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC § 21083.2, and CEQA Guidelines § 15126.4. This shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.	**LTS**

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		Additionally, any such archaeological resources are to be documented in the District's GIS database (Cultural Site Atlas) and, as practical, the information shall be provided to the CHRIS for a Primary number and/or trinomial.	
Impact CUL-2: **Paleontological Resources** The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**S**	**Mitigation Measure CUL-2a: Project-wide - Paleontological Monitoring and Mitigation Plan** The Project proponent shall retain a qualified paleontologist, defined as one meeting the standards of the SVP (2010), to develop and implement a Paleontological Monitoring and Mitigation Plan (PMMP) for the Project. The PMMP shall include a Worker Environmental Awareness Program (WEAP) to be conducted by the qualified paleontologist for all construction crew members involved in Project-related ground-disturbing activities. The PMMP shall also include paleontological monitoring and provisions for the event of fossil discovery. **Mitigation Measure CUL-2b: Project-wide - Paleontological Monitoring** Full-time paleontological resources monitoring shall be conducted for all ground-disturbing activities occurring in previously undisturbed sediments of geologic units with high paleontological sensitivity. Within the Project area the deeper layers (greater than 2 meters deep) of Alluvium (Qa) and all depths of areas mapped as the Orinda Formation (Tor) and the Monterey Formation (Monterey Shale [Ts] and Sobrante Sandstone [Tso]) have high paleontological sensitivity. Paleontological resources monitoring shall be performed by a qualified paleontological monitor, defined as one meeting the standards of the SVP (2010) under direction of a qualified paleontologist, defined as one meeting the standards of the SVP (2010). Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during Project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The qualified paleontologist shall spot check the excavation on an intermittent basis and recommend whether the frequency or depth of monitoring should be revised based on his/her observations. The qualified paleontologist shall prepare a final monitoring and mitigation report to document the results of the monitoring effort. **Mitigation Measure CUL-2c: Project-wide - Unanticipated Discovery Protocol for Fossils** If paleontological resources are discovered during activities associated with implementation of the Project, all work within 50 feet of the discovery shall be redirected until the qualified paleontologist, defined as one meeting the standards of the SVP (2010), can assess the significance of the find. The qualified paleontologist shall make recommendations regarding the treatment of the discovery. Project personnel shall not collect or move any paleontological resources. If the paleontological resources are determined to constitute a unique paleontological resource, pursuant to CEQA, the qualified paleontologist shall provide recommendations for the collection and curation of the paleontological resources with an accredited institution, such as the University of California Museum of Paleontology. The qualified paleontologist shall prepare a report documenting evaluation and/or additional treatment of the resource. The report along with related notes, maps, and photographs, shall be filed with the District, Contra Costa County, and the repository. Completion of this measure shall be monitored and enforced by the District.	**LTS**
Impact CUL-3: Human Remains The Project could disturb any human remains, outside of formal cemeteries	**S**	**Mitigation Measure CUL-3: Project-wide- Unanticipated Discovery Protocol for Human Remains** If human remains are uncovered during Project construction, the District and/or its contractors shall immediately halt all work, contact the Contra Costa county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines § 15064.5(e)(1). If the county coroner determines that the remains are Native American, the District and/or its contractors shall contact the NAHC, in accordance with HSC § 7050.5(c), and PRC § 5097.98. Per PRC § 5097.98, the District shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the District and/or its contractor has discussed and	**LTS**

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		conferred, as prescribed in this section (PRC § 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.	
Impact CUL-4: Tribal Cultural Resources The Project could uncover an unknown tribal cultural resource as defined in PRC § 21074	**S**	**Mitigation Measures CUL-1 and CUL-3** Impacts would be reduced to a less than significant level with implementation of Mitigation Measures CUL-1 and CUL-3 (see discussions for Impacts CUL-1 and CUL-3, above).	**LTS**
GEOLOGY AND SOILS			
With implementation of required NPDES General Construction Activities Permit and District Technical Specifications BMPs there are no significant impacts related to Geology and Soils requiring mitigation.			
GREENHOUSE GASES			
GHG-1: Project construction activities would generate approximately 160 metric tons of CO_2e.	**LTS**	**Refer to Mitigation Measure AIR-2-1: Project-wide - Basic Construction Mitigation Measures** Implementation of the BAAQMD Basic Construction Mitigation Measures, as required by Mitigation Measure AIR-2-1, above would further reduce greenhouse gas emissions during the construction period to ensure impacts remain *less than significant.*	**LTS**
HAZARDS AND HAZARDOUS MATERIALS			
Impact HAZ-1: Project construction could create a significant hazard to construction workers encountering contaminates in soils or live utility lines	**S**	**Mitigation Measure HAZ-1a: McCosker Sub-area - Soil Contaminants** Potential exposure of construction workers to contaminants in soils during grading and construction in areas of McCosker Sub-area shall be minimized through the requirement to test for contaminants and establish and implement a remediation plan as part of the grading. If contaminated soils are found to be present in the construction areas, the District shall complete remediation or treatment prior to the institution of grading. The District shall be responsible for notifying all construction contractors undertaking tank removal and grading activities the potential for exposure to contaminated soils and require adherence to all applicable federal, state, and local standards. **Mitigation Measure HAZ-1b: Project-wide – Health and Safety Plan** All work shall be performed in accordance with a Site Health and Safety Plan that includes: 1) methods to assess risks prior to starting onsite work; 2) procedures for the management and disposal of waste soils generated during construction activities or other activities that might disturb contaminated soil; 3) monitoring requirements; 4) storm water controls; 5) record-keeping; and; emergency response plan. **Mitigation Measure HAZ-1c: Project-wide - Utility Avoidance** Prior to any excavation activities, the Contractor shall coordinate with a utility line locator to ensure avoidance of utility lines.	**LTS**
HYDROLOGY AND WATER QUALITY			
With implementation of required NPDES General Construction Activities Permit and District Technical Specifications BMPs there are no significant impacts related to Hydrology and Water Quality requiring mitigation.			

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
LAND USE AND PLANNING			
There are no impacts related to Land Use and Planning.			
MINERAL RESOURCES			
There are no impacts related to Mineral Resources.			
NOISE			
Impact NOI-4: Construction of the Project could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	**S**	**Mitigation Measure NOI-1: Project-wide: Basic Construction Mitigation Measures** The Project contractor shall implement the following Best Management Practice measures during construction of the Project: • Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards. • Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active Project site. • Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all Project construction. • Prohibit extended idling time of internal combustion engines. • The hours of work shall be any 8.5-hour block as mutually agreed upon between the Contractor and the EBRPD between 7:00 a.m. and 5:00 p.m., Monday through Friday. No night work shall be permitted. • Designate a "disturbance coordinator" at EBRPD who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.	**LTS**
POPULATION AND HOUSING			
There are no impacts related to Population and Housing.			
PUBLIC SERVICES			
Impact PUB-1: The Project could result in temporary disruption o of park services during construction activities	**S**	**Mitigation Measure PUB-1-1: Project-wide - Noticing and Outreach Plan** Temporary impacts to recreation uses resulting from temporary closure of existing recreational facilities, including staging areas, trailheads and trails, during: 1) repair and maintenance work in the Preserve sub-area; and 2) construction of the creek restoration project and development of recreational facilities within the McCosker sub-area shall be minimized through advance communication and redirection to the nearest comparable facilities. Noticing and outreach shall include the following components: • The District shall post notices at key access points in the Project area that identify the closure area and provide information on the nature of the closures and the anticipated duration. • Public Affairs staff shall be briefed as to Project construction-related closures and disruptions, such as added noise and dust in a normally tranquil setting, occasional traffic disruptions, or potential reduction in available parking at park staging areas and access points.	**LTS**

Significant Impact	Significance before Mitigation	Mitigation Measures	Significance with Mitigation
		• The District shall provide notice of construction activities on its website as the Project is implemented. • Prior to acceptance of construction documents, the District shall review the plans and specifications ensure that they contain language requiring the construction contractor to post signs at entrances in the Project area at least one month in advance of construction, indicating the construction schedule and alternative recreation facilities (including location and hours of operation) located in the service area that can be used during the construction period. This measure will be monitored and enforced by the District.	
RECREATION			
Impact REC-1: The Project would include the construction and expansion of recreational facilities that would change the physical the environment	**S**	**Mitigation Measures AES-3-1, HAZ-1a, HAZ-1b, and HAZ-1c** Impacts would be reduced to a less than significant level with implementation of Mitigation Measures AES-3, HAZ-1a, HAZ-1b, and HAZ-1c and implementation of *required NPDES General Construction Activities Permit and District Technical Specifications BMPs* (see discussions for Impacts AES-3, HAZ-1a, HAZ-1b, and HAZ-1c above).	**LTS**
TRANSPORTATION AND TRAFFIC			
There are no significant impacts related to Transportation and Traffic			
UTILITIES AND SERVICE SYSTEMS			
Impact UTI-7: Project implementation would generate a substantive quantity of solid waste that would need to be deposited at a landfill facility	**S**	**Mitigation Measure UTL-1: Solid Waste Disposal during Construction** Prior to completion of the plans and specifications, the District shall review the plans to ensure that they include a solid waste recovery plan. This recovery plan shall be in compliance with the District's adopted sustainability policy, which is directed minimizing disposal of solid waste generated during construction in accordance with applicable state and county codes. The recovery plan shall address, at a minimum, recycling of asphalt and concrete paving materials, lumber and metal and concrete pipes and tanks, and balancing graded soil on site to the maximum extent feasible.	**LTS**

CHAPTER 1
Introduction

This EIR has been prepared by the District to assess the environmental consequences of the *Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment* (Project). The District is the lead agency for the Project pursuant to the State of California Environmental Quality Act (CEQA).

1.1 Site and Historical Context

The District is composed of regional parklands located throughout Alameda and Contra Costa counties. The District system now includes over 121, 397 acres of District lands comprising 73 regional parks, recreation areas, shorelines, preserves, wilderness, and land bank areas (*Figure ES-1, Project Location*). This includes 61 parks that are open and accessible to the public and 12 new parks in land bank status not currently open to the public. Robert Sibley Volcanic Regional Preserve is one of the 73 District parklands.

The *Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment* (Project) area is located in the East Bay Hills at the boundary of Alameda and Contra Costa Counties between Tilden Regional Park and Redwood Regional Park. The Project includes three sub-areas totaling 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve: 1) Robert Sibley Volcanic Regional Preserve (Preserve); 2) Western Hills Open Space (Western Hills); and 3) the McCosker Parcel (McCosker), along with the 240-acre Huckleberry Regional Preserve.

1.1.1 Site Context

The site is located within the geologically complex region of California referred to as the Coast Ranges Geomorphic Province. The Coast Ranges province lies between the Pacific Ocean and the Great Valley (Sacramento and San Joaquin Valleys) provinces and stretches from the Oregon border to the Santa Ynez Mountains near Santa Barbara. East Bay Municipal District (EBMUD) is the adjacent major landowner with open space lands adjoining the Project area to the north and the east. Other primary land uses in the Project vicinity are residential uses and recreation uses associated with other District parklands and City of Orinda parklands (Refer to *Figure 3.10-1, Existing Public Facilities in the Project Vicinity).*

1.1.2 Historical Context

A cultural evaluation completed in 2016 recommends all identified and newly recorded sites as not eligible for the National Register and California Register. No Traditional Cultural Resources/ Properties (TCRs/TCPs) were identified in the Project area. TCRs are sites, districts, buildings,

structures, or objects associated with cultural practices or beliefs of a living community that are rooted in the history of the community, and are important in maintaining the continuing cultural identity of the community.

Cultural History

The Project is in an area once occupied by members of the Ohlonean language group that extended from Carquinez Straits to the Monterey Bay region. This site is in the transitional area of two Ohlonean-speaking tribelets, the Jalquin who occupied the areas contained in the San Leandro Creek Watershed and the Saclan, who centered their activities in the present-day Lafayette area. These tribelets may have traveled through, and used resources, for hunting and food-gathering trips, for gathering stone for making tools, and as religious sites along the peaks of the East Bay Hills, including the Project area.

The first Europeans to visit the East Bay area were the Spanish explorers. After Mexico won independence from Spain in 1821, large tracts of land in California were granted to military heroes and loyalists. District parklands that were once contained within the Spanish Land Grant System included, on the west slope of the Preserve sub-area, the Rancho San Antonio Land Grant.

Three families homesteaded lands that included the McCosker sub-area in the 1860s; Patrick and Catherine McCosker, Joseph and Maria Pereira, and Robert Manes. These families raised cattle and grew hay and grain for several generations, intermarrying and consolidating land ownership as families left the area. Alfred McCosker, grandson of Patrick and Catherine, purchased the Pereira ranch in the mid-1950s, and members of his family continued to own the McCosker sub-area land until the 2000s, when the 250-acre McCosker sub-area was purchased by the Wilder developer, OGLLC (formerly Indian Valley Land Corporation) as recreation mitigation property for a residential development in the City of Orinda. The Western Hills sub-area was also primarily used for grazing. Historically, at least two ranch sites (the Old Domingo Ranch and Boeger Ranch) operated on the property.

During the 1800s the land in the East Bay Hills, including land now within the Preserve sub-area, was purchased and developed by water purveyors to provide water to a rapidly expanding East Bay population. In the early 1920s, when water storage was threatened by urban growth and drought, the East Bay Water Company acquired the local water districts and purchased large tracts of the East Bay Hills to ensure sufficient water supplies. These companies consolidated into EBMUD on May 22, 1923 with the intent of importing water directly from the Sierra Nevada and the Mokelumne River. Once EBMUD had a stable supply of water, a declaration was made that more than 10,000 acres of the East Bay Hills were ‘surplus and available’ lands. EBMUD continued to hold lands contained within the Preserve sub-area until 1936, when they were purchased from EBMUD by the District, along with Temescal Regional Recreation Area, and Claremont Canyon Regional Preserve, to form the nucleus of the East Bay Regional Park system.

In addition to transportation systems facilitating access to and through the Project area, land uses expanded from ranching, agricultural, and watershed uses to include construction and rock quarrying related industries in both the Preserve and McCosker sub-areas of the Project. The quarry in the

Preserve sub-area was in operation under Kaiser Sand and Gravel Company in the 1940s. However, the quarry was non-operational by the time the District acquired the land in 1977.

The Upton Quarry was located on lands adjacent to, but not within, the Western Hills sub-area (now Wilder residential development). This quarry was worked by Kaiser Industries from 1944 to 1954. Kaiser obtained gravel from surface mining of the basalts, using a ripping technique to excavate (Montanera EIR). Visual scars from these operations are still visible from the Western Hills sub-area when looking east to the Orinda Open Space parcels.

Rock crushing operations were in place at the McCosker sub-area between 1958-1971 and a heavy equipment construction yard was in place on the site sometime prior to 1966. Construction activities continued in the McCosker sub-area until 1971.

Historically, primary access to the Project area was via public roadways and private ranch roads with the East Bay Hills forming a significant barrier to travel between Alameda and Contra Costa counties. This was overcome in 1913 when the Oakland, Antioch, and Eastern (OA&E) railroad line, extending from the City of San Francisco to the City of Sacramento, was completed. In full operation, the OA&E traveled through the community of Canyon. Stations included the Eastport Station that was located near the McCosker sub-area entry off Pinehurst Road.

Formation of Project Parkland Area

Preserve Sub-area

In 1936 EBMUD sold 2,162 acres of watershed land to the District for $656,544 preserving the first regional parklands for the public's benefit. The original 227-acres of the Robert Sibley Volcanic Regional Preserve were opened to the public two years after the formation of the District. This Preserve is named to honor a founder and director of the District Board of Directors, and President of the Board from 1948 until his death in 1958. Various parcels have been added to the Preserve over the years including in 2010 the donation of the McCosker parcel and the anticipated transfer of the Western Hills Open Space. These properties have served to expand the Robert Sibley Volcanic Regional Preserve northeast towards the City of Orinda and south into the unincorporated area of Canyon.

Western Hills and McCosker Sub-areas

The 2004 Second Supplemental EIR for the Montanera Project (Wilder residential development) provided for an on-site, 389-acre open space area located west of the residential development and adjacent to the Preserve sub-area, and referred to as the Western Hills Open Space Area, to be permanently preserved as open space pursuant to a resource agency conservation easement and allowed for these open space lands to be transferred to the District. It also provided for a new parking area at the (former) Art and Garden parking area (referred to in this draft EIR as the Red-tailed Hawk Staging Area). The City of Orinda certified the *2004 Second Supplemental EIR for the Montanera Project* on February 5, 2005 Resolution 13-05.

The *2004 Second Supplemental EIR for the Montanera Project* (Wilder residential development) also provided for the transfer of approximately 500.4 acres to EBMUD or the District enabling the transfer of the Texas parcel (250-acre McCosker sub-area) to the District. The McCosker sub-

area was transferred to the District in 2010 as a donation providing mitigation for recreation impacts to Robert Sibley Regional Preserve associated with the realignment of the PG&E transmission lines.

In December 2016, the District adopted *Resolution No. 2006-12-280, Approval of Resolution of Intention for the Formation of Gateway Valley Zone of Benefit AB* authorizing the General Manager to: 1) enter into an agreement for the donation of various permanent open space and trails related to the OGLLC's residential development (Western Hills sub-area) and McCosker sub-area and accept title to the open space areas and trails; and 2) incorporate that land into Robert Sibley Volcanic Regional Preserve. Additionally, a Zone of Benefit was established for maintaining, developing and operating local trails within the donated lands.

Due to these pre-determined actions, the Western Hills sub-area, incorporating the 389-acre conservation easement and the Red-tailed Hawk Staging Area, is anticipated to be transferred to the District.

Planning for a LUPA that would append the *1985 Land Use Development Plan (LUDP)* to incorporate the Western Hills and McCosker sub-areas and incorporate new land use proposals began in 2014 with the initiation of technical studies evaluating the site conditions at the McCosker sub-area. These studies included: 1) the 2014 *Camping Program Update Report* recommending a small group camp site within the McCosker sub-area; and 2) the *September 12, 2014 McCosker Feasibility Report: Daylighting an Unnamed Tributary on the McCosker Property*. Based on the findings from these studies, the public planning process for the LUPA was initiated.

1.2 Project Planning Process

1.2.1 Land Use Plan Amendment

The LUPA planning process provides a formal planning review focused on additional conditions relating to an existing District planning document. Specifically, this LUPA appends actions described for the Preserve, Western Hills and the McCosker Sub-areas into the 1985 LUDP. Planning actions include: 1) creek restoration and enhancement; and 2) public access and recreation facility development.

The LUPA planning process was initiated in 2016 and Community Meeting #1 was held on April 6, 2016. At this meeting, the District introduced the Project and presented baseline conditions. Subsequently, two additional community meetings were held; Community Meeting #2 on November 16, 2016 focused on Project options, and Community Meeting #3 on January 18, 2017 focused on creek restoration and recreation facility design concepts and trail alignments and trail uses. The January 18, 2017 meeting also served as the CEQA scoping meeting for the Project. In addition, two youth engagement meetings and two on-site tours of the McCosker sub-area were held to further inform the public about the Project prior to the issuance of the Notice of Preparation (NOP).

1.2.2 Project Purpose

The Project purpose is to:

- Append the 1985 Land Use Development Plan (LUDP) to incorporate the Western Hills and McCosker sub-areas and developed local trails into Robert Sibley Volcanic Regional Preserve; and

- Preserve the rich heritage of natural and cultural resources and provide open space, trails, and safe and healthful recreation and environmental education in accordance with the District's 2013 Master Plan.

1.3 EIR Purpose and Review Process

1.3.1 EIR Purpose

Section 15200 of the State CEQA Guidelines defines the purpose of the review of an EIR as an opportunity for: (a) sharing expertise; (b) disclosing agency analyses; (c) checking for accuracy; (d) detecting omissions; (e) discovering public concerns; and (4) soliciting counter proposals.

Section 15204 of the CEQA Guidelines continues with a description of the focus of review of draft EIRs:

> Persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects.
>
> The purpose of the draft EIR is to inform public agency decision makers and the general public about the Project and its significant environmental effects, possible ways to minimize those significant effects, and to describe reasonable alternatives. The draft EIR will be subject to a 45-day public review period specified on the Notice of Availability transmittal memo accompanying this draft EIR. Written comments provided by the general public and public agencies will be evaluated, and written responses will be prepared for all comments received during the designated comment period.
>
> The CEQA Guidelines further explain that reviewers should: "*...be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible considering factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters.*"

Upon completion of the evaluation, a final EIR will be prepared and provided to the District Board of Directors for certification of compliance with CEQA, and for review and consideration as part of the decision-making process for the Project.

1.3.2 Draft EIR Organization and Content

For purposes of function and clarity, this draft EIR has been divided into the following sections/chapters:

Executive Summary

The Executive Summary describes the Project actions, identifies areas of controversy, and where these areas are addressed within the draft EIR, and provides a conclusion that, with implementation of the mitigations, the Project would not result in any significant unavoidable impacts.

Chapter 1, Introduction

The Introduction provides a summary of the site context and history of the Project and the environmental review process; and discusses the overall purpose, use, and organization of the draft EIR.

Chapter 2, Project Description

The Project Description provides a description of the Project in terms that are relevant to the Project review. It includes the location and boundaries of the Project; a statement of objectives; and a general description of the Project's technical and environmental characteristics, including principal engineering considerations.

Chapter 3, Project Analysis, including Potential Growth-Inducing Impacts

For each environmental topic, the Project Analysis describes: existing conditions, and the potential for the Project to result in significant impacts. This portion of the draft EIR is organized in accordance with applicable environmental resources. The assessment of impacts considers the regulatory setting, environmental baseline conditions at the time of publication of the NOP, research methodology, thresholds for significance recommended by CEQA and other relevant statutes and regulations, and analyses potential impacts and the potential to reduce or avoid significant adverse impacts through mitigation in accordance with the CEQA *Guidelines Section 15126.4*. This section also provides the required analysis of the overall impacts of the Project, including: economic or population growth-inducing impacts; significant cumulative effects, either directly or indirectly for each environmental topic.

Chapter 4, Alternatives to the Project

The Alternatives to the Project Chapter describes a range of reasonable alternatives to the Project that would attain most of the basic objectives, but would avoid or substantially lessen any of the significant effects of the Project, including a No Project Alternative. Although, not capable of meeting most of the basic objectives of the Project, the No Project Alternative was analyzed in accordance with the requirements of CEQA. The anticipated environmental effects of the alternatives are compared to those analyzed in *Section 3, Project Analysis* for the Project. In addition, to the CEQA- required No Project Alternative, two alternatives were considered; 1) Alternative 2 - Day Use Focus - Minimal Improvements - Reduced Restoration; and 2)

Alternative 3 - Day Use Focus – Parking Maximized. This section also provides an evaluation of alternative development scenarios to the Project, and describes alternatives that have been considered, but rejected from further evaluation.

Chapter 5, Other CEQA Considerations

Chapter 5 describes growth-inducing impacts, significant and irreversible changes, significant and unavoidable environmental impacts, and summarizes cumulative impacts discussed in more detail in each of the chapter sections in *Chapter 3, Project Analysis*. Significant and unavoidable impacts include short-term impacts on: visual quality, release of particulate emissions generated by excavation, grading, hauling, and other activities, disturbance to special status plants and wildlife, potential increase in invasive species populations, impacts to wetlands, potential to discover unknown paleontological, pre-contact or historic-era resources, or human remains, potentially hazardous conditions associated with site excavation activities, disruption of parkland services during Project construction activities, noise generation from construction activities, and solid waste generation from Project construction activities. There are no anticipated impacts that cannot be mitigated to a less than significant effect and no irreversible changes related to the use of nonrenewable resources.

Chapter 6, Report Preparation, Organizations and Persons Consulted

Chapter 6 provides: 1) a list of governmental agencies, community groups, and other organizations consulted during the preparation of this draft EIR; 2) a list of personnel that provided technical input to, or review of, the draft EIR; 3) a list of the reference documents, publications, literature reviewed and cited, communications, and correspondences used in the preparation of this draft EIR; 4) a list of abbreviations and acronyms used throughout the document; and 5) a distribution list of agencies and libraries receiving this draft EIR during the 45-day public review period.

1.3.2 Public Review and Participation Process

Initiation of the CEQA Process

On January 18, 2017, the CEQA public scoping meeting for the Project was held at the Richard C. Trudeau Conference Center, 11500 Skyline Blvd, Oakland. On June 19, 2017, a Notice of Preparation (NOP) of a draft EIR for the Project was submitted to the State Clearinghouse. The State Clearinghouse distributed the NOP to Responsible Agencies, agencies involved in funding or approving the project and Trustee Agencies responsible for natural resources affected by the Project, including: California Department of Forestry and Fire Protection (CAL FIRE); California Department of Parks and Recreation; California Department of Water Resources; California Department of Fish and Wildlife; Native American Heritage Commission; State Lands Commission; California Highway Patrol; Caltrans District 4; CalEPA - Air Resources Board, State Water Resources Control Board; and Regional Water Quality Control Board. The NOP was filed with the County Clerk of the Board. One hundred seventy-nine notices were sent via email. The District Board of Directors and Parks Advisory Committee received copies of the NOP. In addition, 575 community members and local government entities, including libraries, received

copies of the NOP in the mail. The NOP was also posted on the District web site. The comment period closed on July 19, 2017.

The District received 12 letters of comment in response to the NOP (Refer to *Appendix A, Notice of Preparation* for a summary of comments received). Comments were provided by: Regional Parks Association; Native American Heritage Commission; STEP/Sierra Club S.F. Bay Chapter/Sustainability, Parks, Recycling, and Wildlife Legal Defense Fund (SPRAWLDEF); East Bay Municipal Utility District; Caltrans District 4; Bicycle Trails Council of the East Bay; California Native Plant Society, and five community members. Although some letters of comment were received after the official close of the comment period, all letters of comment to the NOP were considered by the District in preparing the draft EIR.

Lead and Responsible and Trustee Agencies

East Bay Regional Park District (District) is a State Agency as defined by CEQA Section 21082.1 and has prepared and is circulating this draft EIR in accordance with the provisions of this section. For this EIR, District is the lead agency under CEQA, as defined in Section 15367 of the State CEQA Guidelines.

Responsible and trustee agencies are consulted by the lead agency to ensure the opportunity for input during the environmental review process. Under CEQA, a responsible agency is a public agency other than the lead agency that has legal responsibility for carrying out or approving a project or elements of a project (PRC Section 21069). A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070). The California Department of Fish and Wildlife (CDFW) is a trustee agency with jurisdiction over fish and wildlife and their habitats that may be affected by the Project.

Draft EIR Notification and Availability

Consistent with the requirements of CEQA, efforts have been made during the preparation of this Draft EIR to contact affected agencies, organizations, and individuals who may have an interest in the Project. As described above, this effort included a public scoping meeting on January 18, 2017, in Oakland and the circulation of the NOP on June 19, 2017. Early consultation with relevant agencies, organizations, and individuals assisted in the preparation of this Draft EIR.

Notice of Completion

The District has filed a Notice of Completion with the State Clearinghouse of the Governor's Office of Planning and Research, indicating that this Draft EIR has been completed and is available for review and comment by the public.

Notice of Public Availability

A Public Notice of the Notice of Availability (NOA) of the draft EIR is accompanying this draft EIR. It is also posted on the on the District website, and in East Bay Times and the Hills Publication news publications. A NOA has also been mailed directly to the appropriate private and Federal, State, and local regulatory agencies and posted at locations around the Project area.

The NOA provides the dates of the 45-day public review period, the dates of the public meeting and the District Parks Advisory Committee and Board Executive Committee meetings, along with a brief description of the Project location and Project components.

Locations where Draft EIR Can be Viewed

Hard copies of the Draft Program EIR can be reviewed at the locations listed below and an electronic version can be viewed online at the District website:

https://www.ebparks.org/about/planning/default.htm#robert_sibley_lupa

East Bay Regional Park District
Administration Office
2950 Peralta Oaks Ct.
Oakland, California 94605-0381

Oakland Public Library Montclair Branch
1687 Mountain Blvd
Oakland, CA 94611

City of Orinda Public Library
26 Orinda Way
Orinda, CA 94563

Moraga Library - Contra Costa County Library
1500 St Marys' Rd
Moraga, CA 94556

Canyon Post Office
99 Pinehurst Rd
Canyon, CA 94516

Draft EIR Public Meeting

One public meeting on this Draft EIR will be held during the review period, to receive comments on the document as stated in NOA accompanying this draft EIR.

Written Comments

Comments on the Draft Program EIR may be made either in writing before the end of the comment period or orally at the aforementioned public meeting as set forth in the NOA. Written comments should be mailed or e-mailed to the address provided below. After the close of the public comment period, responses to the comments received on the Draft Program EIR will be prepared and published, and together with this Draft Program EIR will constitute the Final Program EIR.

Written comments on the draft EIR submitted by mail should be addressed to:

East Bay Regional Park District
ATTN: Julie Bondurant, Principal Planner
2950 Peralta Oaks Ct.
Oakland, California 94605-0381

Written email comments on the draft EIR should be addressed to: jbondurant@ebparks.org

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CHAPTER 2
Project Description

2.1 Introduction

This chapter provides a description of the Project area location, the existing conditions, the Project's goals and objectives followed by the proposed actions. Construction activities required for the proposed actions are summarized at the end of the chapter.

2.2 Project Location

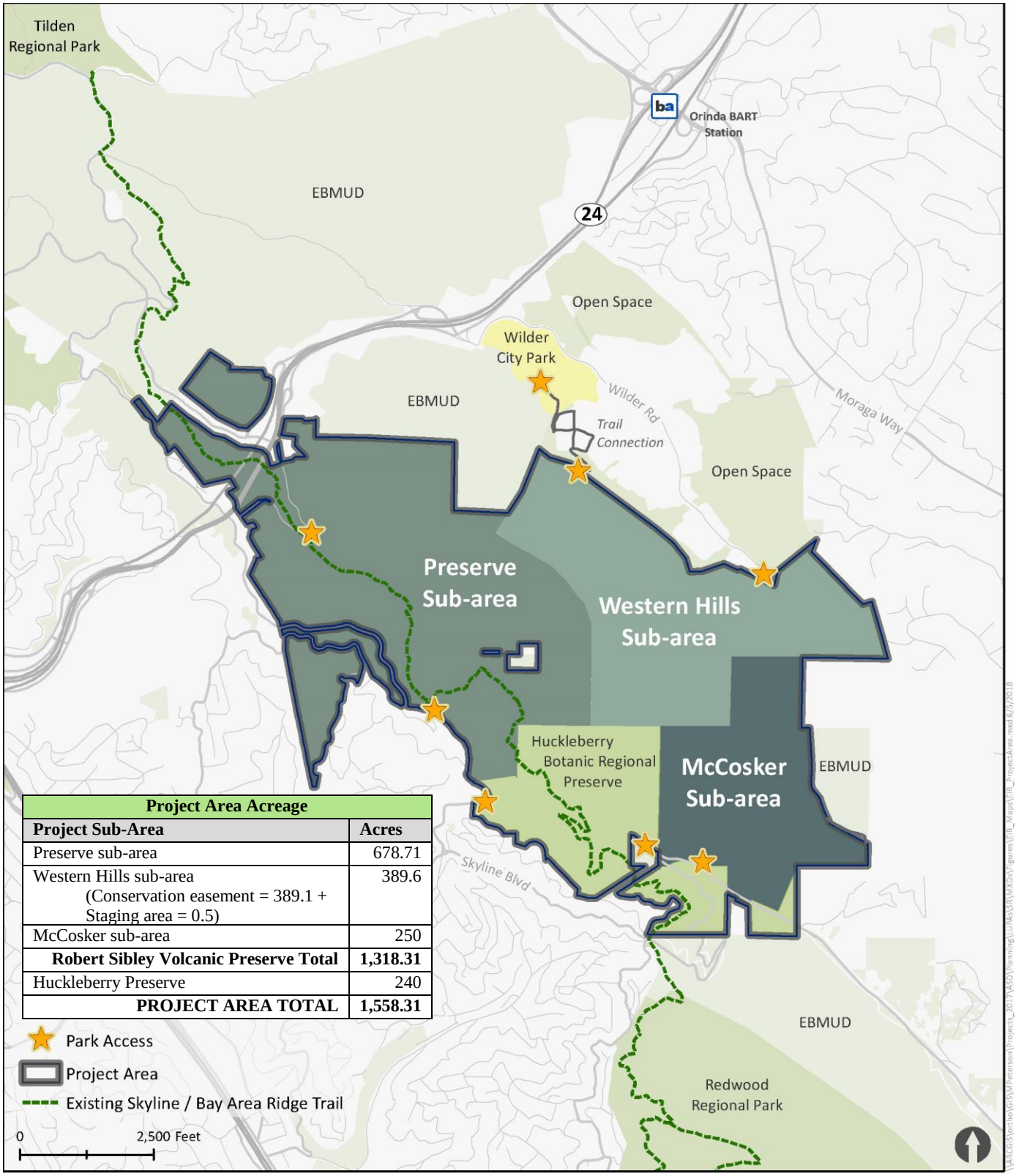
2.2.1 Regional Context

The District is composed of regional parklands located throughout Alameda and Contra Costa counties. The District system now includes over 121,397 acres of District lands comprising 73 regional parks, recreation areas, shorelines, preserves, wilderness, and land bank areas (*Figure ES-1, Project Location*). This includes 61 parks that are open and accessible to the public and 12 new parks in land bank status not currently open to the public. Robert Sibley Volcanic Regional Preserve is one of the 73 District parklands.

2.2.2 Project Area

The *Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment* (Project) area is located on the crest of the East Bay Hills at the boundary of Alameda and Contra Costa Counties between Tilden Regional Park and Redwood Regional Park. The Project includes three sub-areas totaling 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve: 1) Robert Sibley Volcanic Regional Preserve (Preserve); 2) Western Hills Open Space (Western Hills); and 3) the McCosker Parcel (McCosker), along with the 240-acre Huckleberry Regional Preserve. No construction activities are proposed within the Huckleberry Preserve aside from trail connections. The Project location, including the three sub-areas contained within the Project area, is shown on *Figure 2-1, Land Use Plan Amendment Project Area.* The Project area appears on the Oakland East, California U.S. Geological Survey 7.5-minute quadrangle map (*Figure 2-2, USGS. Oakland East Quad).*

1. **The Preserve Sub-area** is located along the ridgelines of the East Bay Hills bordering the City of Oakland (Township 01 South, Range 03 West, Section 9 and Township 01 South, Range 03 West, Section 16 and portions of the Rancho San Antonio land grant boundary).



Project Area Acreage	
Project Sub-Area	**Acres**
Preserve sub-area	678.71
Western Hills sub-area (Conservation easement = 389.1 + Staging area = 0.5)	389.6
McCosker sub-area	250
Robert Sibley Volcanic Preserve Total	**1,318.31**
Huckleberry Preserve	240
PROJECT AREA TOTAL	**1,558.31**

FIGURE 2-1: PROJECT AREA

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

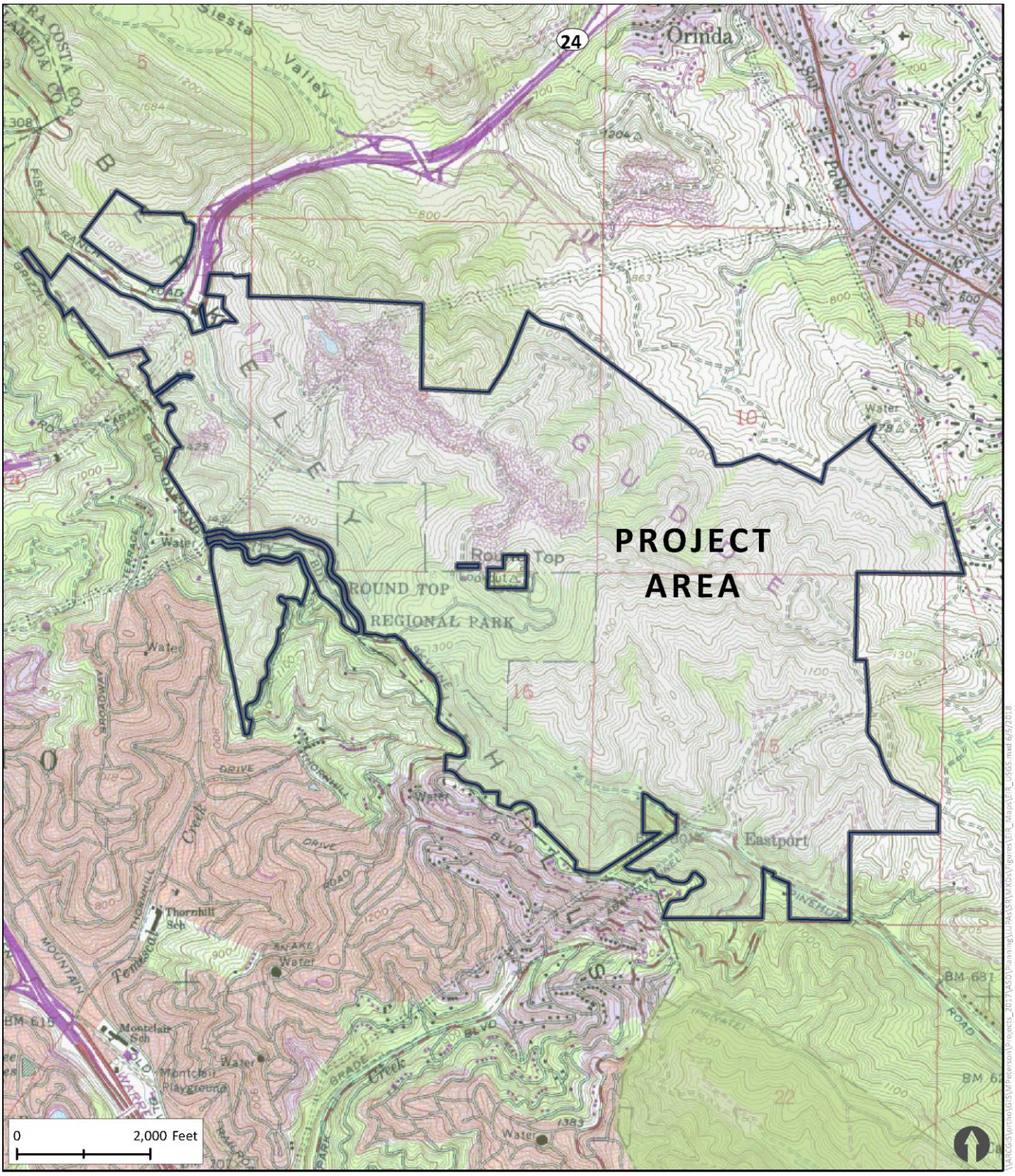


FIGURE 2-2: USGS OAKLAND EAST QUAD

2. **The Western Hills Sub-**area extends eastward from the ridgelines of the East Bay Hills to the western boundary of the Wilder residential development in the City of Orinda (Township 01 South, Range 03 West, Section 09; Township 01 South, Range 03 West, Section 10; Township 01 South, Range 03 West, Section 11; and Township 01 South, Range 03 West, Section 15).
3. **The McCosker Sub-area** is located approximately one mile northwest of the unincorporated township of Canyon in Contra Costa County. This sub-area extends from the canyon floor of the eastern face of the East Bay Hills to the east-west trending ridgelines of Gudde Ridge (Township 01 South, Range 03 West, Section 15).

Huckleberry Botanic Regional Preserve comprises a 240.3-acre area, also owned and managed by the District. This botanic preserve borders portions of each of the three sub-areas (Township 01 South, Range 03 West, Section 15 and Township 01 South, Range 03 West, Section 16).

There are six existing District-managed access points into the Project area via three primary routes of travel; Skyline Boulevard, Highway 24, and Pinehurst Road. There is one City of Orinda-managed staging area and a few walk-in access points from local neighborhoods (*Figure 2-1, Land Use Plan Amendment Area*). There is currently no transit service to any of the entrances associated with the Project area. The access points and primary routes of travel are described in *Section 2.3.3, Existing Access.*

2.3 Existing Conditions

2.3.1 Existing Parkland Designations

Robert Sibley Volcanic Regional Preserve is considered one of District's Regional Preserves. Development and use of the parkland parcels that will be added to this Preserve will adhere to the provisions of this type of parkland as defined in the District Master Plan.

The Master Plan identifies a Regional Preserve as:

> "A*n area with outstanding natural or cultural features protected for their intrinsic value as well as for public enjoyment and education. The size of a natural or cultural Preserve must be sufficient to ensure that its significant resource(s) can be managed so as to be protected and enjoyed. Significant resources consist of botanical, wildlife, geologic, topographic, archaeological, historic, or other features. The Recreation/ Staging Unit(s) providing for public access and services will comprise no more than five percent of the area*."

Developed areas within the Preserve sub-area including staging areas, park residences and offices, a backpack camp and trails comprise approximately 6.9 acres or one percent of the 679-acre area.

The District establishes Land Use Designations, also known as unit designations, to indicate the levels of resource protection required and recreational intensity allowed in specific parkland areas. Land Use Designations applied to the parklands include: 1) Natural Units;

2) Recreation/Staging Units; 3) Special Protection Features; and 4) Special Management Features, as described in the following 2013 District Master Plan policies.

> ***PRPT19:*** *The District will establish unit designations (Natural Units, Recreation/Staging Units) and Special Features (Special Protection Features and Special Management Features) in a Land Use Plan (LUP) or System-wide Plan and will identify these units in appropriate planning documents.*

The primary planning and management objective of a Natural Unit as defined in the District 2013 Master Plan is to preserve and enhance natural habitat and vegetation diversity. In these areas, lower intensity recreational activities (e.g., hiking, backpack and horseback camping, horseback riding, bicycling, plant and wildlife study, educational pursuits and contemplation) prevail. Natural units may contain a variety of vegetation and habitats, as well as varied topography and vistas. Per District Master Plan Policy:

> ***PRPT20:*** *Natural, open space, or wildland areas with lower intensity recreational uses and facilities (primarily trails) will be designated as Natural Units. Natural Units will generally comprise the majority of the parkland acreage, except in Regional Recreation Areas. Parklands will be designated as Natural Units to maintain open space and significant features in a cohesive area. A Natural Unit may contain Special Protection Features and Special Management Features.*

Special Protection Features (SPF) identify areas with unique or fragile natural, cultural, aesthetic or educational features, such as biologic, hydrologic, archaeological, historic, or geologic resources. This designation provides the greatest amount of protection for resources that require specialized types of management to preserve and enhance them. Per District Master Plan Policy:

> **PRPT22**: *Areas with unique or fragile features will be designated as Special Protection Features to preserve and enhance them through specialized management. Special Protection Features may be closed seasonally or permanently to public access, if public access will endanger them.*

Special Management Features (SMF) primarily identify constructed or modified features, such as wildland vegetation management areas, plantations, of exotic trees, farm fields and dams that require specialized types of management. Per District Master Plan Policy:

> **PRPT23**: *Areas and facilities that have special management requirements, such as fields and dams, will be designated as Special Management Features.*

Recreation/Staging Units are generally located near access roads on relatively flat land areas and along natural or artificial water bodies. Areas designated as Recreation/Staging Units can allow for more intensive development. These areas are characterized as having lower habitat value, and of sufficient size to support the necessary parking, utilities, and infrastructure needed to accommodate recreational uses. Per District Master Plan policy:

PRPT21: *Areas of higher recreational use and concentrations of service facilities will be designated as Recreational/Staging Units. Where possible, these areas will be clustered and located on the edges of the park.*

2.3.2 Project Area Natural Features

2.3.2.1 The Preserve Sub-area

The Preserve sub-area encompasses a 678.71-acre area. This sub-area is situated on moderately steep to steeply sloping terrain in the East Bay Hills with prominent northwest-trending ridges bisected by interior valleys and side canyons. Most of the dominant ridges are north-south trending, including Gudde Ridge, a five-mile long easterly spur of the extinct volcano Round Top that runs through the Robert Sibley Volcanic and Huckleberry Regional Preserves. Round Top is the most prominent visual feature within Robert Sibley Volcanic Regional Preserve, although the summit of the volcano is owned by other parties. Former grading activities associated with road and trail development and quarry operations have exposed geologic features including in the North Quarry, the interior of one of the major feeder volcanoes of the Berkeley Hills. Round Top marks the dividing line between the San Pablo and the San Leandro Creek watersheds. The southeastern slopes of the peak are in the 19,430-acre Upper San Leandro Reservoir sub-watershed, and drainage channels from these slopes empty into a valley that forms the headwaters of San Leandro Creek.

Oak Woodlands occur in the Sibley Triangle, in the canyon south of the park residence in the main unit, and in the drainages and canyons on the northwest slopes of Round Top. Riparian Woodlands occur within drainages located below the flat quarried pads in the northern half of the Preserve sub-area. Grasslands are concentrated primarily in the northern third of the Preserve sub-area in and around the quarries, along Gudde Ridge, and on the lower northwest-, north-, and northeast-facing slopes of Round Top. Small patches also occur on the south-facing slope of Roundtop and in the Sibley Triangle parcel below Skyline Boulevard. Red gum (*Eucalyptus camaldulensis*) and blue gum (*Eucalyptus globulus*) eucalyptus originally planted in early 1900s are present as maverick trees and in large groupings or "plantations." Eucalyptus plantations occur in both Thornhill Canyon and the main unit of the Preserve Sub-area. Large blocks of these trees stand along the east boundary below Round Top, on the top of the knoll west of a water tank, on the western slopes and at the bottom of the drainage below the park entry. The rapid growth to a height of 80 to 140 feet and high rate of reproduction of these eucalyptus trees have resulted in their complete dominance in large portions of these areas. Monterey pine (*Pinus radiata*), were also planted in early 1900s and presently occur as mature groves of varying densities throughout the Preserve Sub-area and on Skyline Road northwest of the main entrance along with cypress trees (*Cupressaceae spp*.).

2.3.2.2 The Western Hills Sub-area

The Western Hills sub-area primarily consists of a 389.1-acre conservation easement. The conservation easement conditions stipulate that the area remain protected and enhanced, while accommodating lower intensity recreation that is compatible, with and dependent on, those values.

This sub-area is defined by Gudde Ridge along the westerly perimeter and Zuckerman Saddle, an intermediate, southeast trending landform that serves to visually separate the larger part of the Western Hills sub-area from the McCosker Sub-area. From the ridgelines, the larger portions of the sub-area extend downhill to intersect the valley that contains the Wilder sub-division, while the southerly portion extends downslope to merge with the McCosker sub-area. Several drainages on these south-facing slopes contribute to the "Alder Creek watershed."

The landscape character of the Western Hills sub-area consists of mixed oak woodland and grassland environments interspersed with some smaller areas dominated by seasonal wetlands. Oak Woodlands, consisting of trees that reach 30 to 50 feet in height occur in the upland hills along intermittent and perennial drainages that form tributaries to Brookside, Moraga and San Leandro Creeks. Riparian woodlands are intermixed with the Oak Woodlands along most of the major and minor drainages, including Brookside Creek. The California annual grassland community dominates the south facing slopes of the Western Hills and forms part of the mosaic of woodland and scrub communities on the east facing slopes. Notable bands of varying colors and density of grasslands define the underlying Moraga and Orinda geologic formations in the south facing grassland areas.

2.3.2.3 The McCosker Sub-area

The McCosker sub-area comprises a 250-acre area. Most of this sub-area is open space and includes the following general habitat types: oak woodland, riparian woodland, non-native grassland, coyote brush scrub, and developed/ruderal.

This sub-area extends from the eastern valley floor of the East Bay Hills to the ridgelines. Dominant ridges include a prominent 40-acre section of the Gudde Ridge line, Zuckerman Saddle, and approximately 90 acres of Flicker Ridge.

Historically, the valley floor was configured to support a family residence and a construction and quarrying business that operated from 1958 to 1971. Remnants from this period include an access road leads up from Pinehurst Road entry to two level- to gently-sloping pads at the eastern boundary of the valley floor and upper terrace farther north. The Project refers to the larger two-level terraced area as the Fiddleneck Field, and the upper, smaller terrace as Fern View Terrace.

A small "kitchen orchard" remains at the base of the slope leading up to the two graded terraces. The lower terrace of Fiddleneck Field contains cultivated, non-native trees and shrubs mostly in containers from a former nursery operation. The upper terraced area is composed largely of ruderal grasslands. Remnants of a former construction business in area include a metal equipment shed and six underground storage tanks that used to contain diesel fuel. Today the site is used by District staff to store a variety of supplies to support park operations, including piles of boulders and various pipes. The two terraces are visually separated by an approximately 20-foot grade difference and a dense vegetation screen composed primarily of Coyote brush (*Baccharis pilularis*).

A third "upper" terrace, Fern View Terrace, is located west off the main access road. Vegetation at this site consists of non-native grasses and a mix of ornamental trees. Remnants of a former

rock crushing business can be found here. The east and west branches of the main drainage define the boundaries of this terrace.

An unnamed perennial stream, herein referred to as Alder Creek, occurs mainly within the McCosker sub-area. Alder Creek generally flows from the northern portion of the sub-area south towards Pinehurst Road. It converges with San Leandro Creek immediately south of Pinehurst Road. The lower reach of Alder Creek and several of its tributaries have largely been filled and culverted and some portions of the culverts have failed resulting in severe erosion. The culverted portions of Alder Creek are located beneath oak woodland and developed/ruderal areas. There are a few daylighted segments of Alder Creek within this lower reach that support riparian woodland vegetation.

An unnamed tributary of Alder Creek, herein referred to as Leatherwood Creek, originates in the eastern hills of the sub-area and flows southwest until it converges with Alder Creek. The lower reach of Leatherwood Creek is almost entirely culverted, except for a small daylighted segment that is surrounded by oak woodland vegetation. The culverted portion is located beneath non-native grassland, oak woodland and coyote brush scrub.

The terraced areas, along with vehicle access, utility services, and trail connections between these areas constitute the developed area in the McCosker sub-area.

2.3.3 Existing Access

2.3.3.1 Roadways Providing Access to the Project Area

Six existing parking areas provide public recreation access into the Project area via three primary routes of travel. These access points and primary routes of travel are described below. Also refer to *Figure 2-1, Land Use Plan Amendment Project Area* and *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites.*

Preserve Sub-area – Skyline Boulevard

Skyline Boulevard generally runs north/south, along the ridge of the East Bay Hills. Access to Robert Sibley Volcanic Regional Preserve is available from Skyline Boulevard from the Main Staging Area. Secondary access to the Project area is provided via trails from the Huckleberry Regional Preserve Staging Area. The Huckleberry Staging Area is also located off Skyline Boulevard.

Preserve and Western Hills Sub-areas

Highway 24 generally runs east/west near the northern boundary of the Project area with the four-bore Caldecott Tunnel providing a connection between the cities of Oakland and Berkeley and the Cities of Lafayette and Orinda and Town of Moraga (Lamorinda area). Secondary access to the Preserve sub-area is provided at the terminus of Old Tunnel Road. This access point can be reached from the Fish Ranch Road exit off Highway 24 east of the Caldecott Tunnel.

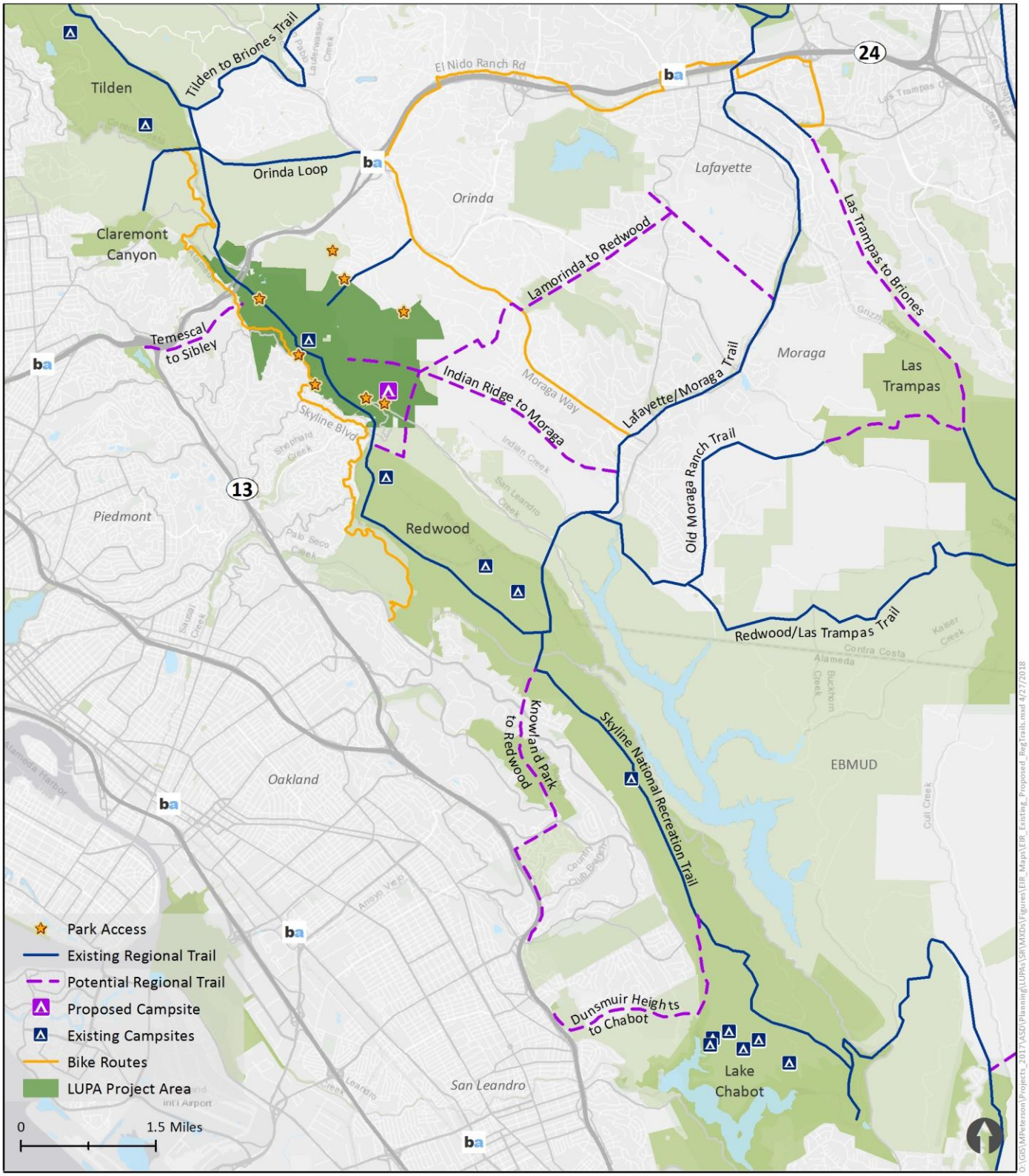


FIGURE 2-3: EXISTING AND PROPOSED REGIONAL TRAILS AND LOCAL CAMPSITES

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

The Wilder Road exit off Highway 24 in the City of Orinda provides access to the two Western Hills sub-area staging areas; Wilder Park, managed by the City of Orinda, and the Red-tailed Hawk Staging Area located at the southern terminus of Wilder Road. These access points would become available for public use when the Western Hills sub-area is conveyed to the District.

In addition, visitors would be able to access the Project area on foot or bicycle from the western terminus of Edgewood Road and from Brookside Road via trails and roads that connect to the Western Hills sub-area through the Wilder residential development. Neither of these access points would be managed by the District.

McCosker Sub-area – Pinehurst Road

Pinehurst Road generally runs north/south, along the eastern base of the East Bay Hills in unincorporated Contra Costa County. Vehicular access to the McCosker sub-area is via Pinehurst Road. This park entrance, known as Wilcox Staging Area, is located approximately one-mile north of Canyon Elementary School. A trailhead, providing access to Huckleberry Preserve, is also located on Pinehurst Road. This trailhead does not offer any parking.

2.3.3.2 Bicycle, Pedestrian and Equestrian Facilities

With its location in the East Bay Hills the Project area offers opportunities to connect to popular on-street bicycle routes identified in city and county bike planning documents, as well as regional trails depicted in the District Master Plan. Pedestrian facilities connecting to the Project area are much more limited and generally confined to access from Wilder subdivision and adjacent neighborhoods as Skyline Boulevard and Pinehurst Road are narrow, two-lane roads with unpaved or non-existent shoulders that do not safely accommodate pedestrian or equestrian travel. Within District parklands, there is an extensive network of trails available for pedestrian and equestrian-oriented activities. Refer *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites* for the location of major non-motorized routes connecting to the Project area.

2.3.3.3 Transit

There is no direct transit service to the Project area. The closest bus route runs along Moraga Way with connections to the Wilder residential development at the Brookside trailhead. This bus line service is operated by the County Connection. The bus runs every 40 minutes during peak weekday periods and 120 minutes during off-peak weekday periods with service beginning at 6:00 a.m. and ending at 8:45 p.m. and 80 minutes on weekends beginning at 9:24 a.m. and ending at 6:09 p.m. The bus route begins at the Orinda BART Station and concludes at the Lafayette BART Station. The closest BART station to the Project area is the Orinda BART Station located approximately two miles from Western Hills sub-area. From BART, bicyclists could travel south on the Orinda Loop Regional Trail via Moraga Way to Brookside Road and then continue west on trails and roadways in the Wilder sub-division to the Western Hills Open Space. There is no designated pedestrian travel route to the Project area from this BART station.

For park users wanting to access the East Bay Hills for an extended or multi-day trek that could include the Project Area, this trek could also begin with an AC Transit bus; AC Transit line 339 - Fruitvale BART station in the City of Oakland to the Chabot Space and Science Center and

Roberts and Redwood Parks, and AC Transit line 67 - Downtown Berkeley to Tilden Regional Park. However, it should be noted that neither of these bus connections are in close proximity to the Project area. Nor do either of these bus lines stop at any of the existing campsites shown in the figure.

Refer to *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites* for the location of the closest BART station.

2.3.4 Existing Trail System

Existing trails currently open to the public within the Project area include sections of regional trails that connect the Preserve sub-area to other East Bay Hills regional parklands and local trails within the Preserve and McCosker sub-area. There are approximately 13.9 miles of existing trails currently open to the public (8.8 miles in the Preserve sub-area, 2.0 miles in the McCosker sub-area, and 3.1 miles in the Huckleberry Preserve) and approximately 5.3 miles of existing narrow and ranch road trails in the Western Hills and McCosker sub-areas that are not currently open to the public within the Project area. A description of the existing trail system follows.

2.3.4.1 Regional Trails that Traverse the Project Area

The 31-mile East Bay Skyline National Recreation Trail, also known as the "Skyline Trail", and more recently overlain with segments of the Bay Area Ridge Trail (Ridge Trail) and the Juan Bautista de Anza Trail (Anza Trail) was developed in the 1970s as a continuous north/south trail connection along the ridge of the East-Bay Hills.

This regional trail runs through Robert Sibley Volcanic Regional Preserve with connections to Huckleberry, Redwood and Anthony Chabot Regional Parklands to the south and Tilden Regional Park and the Alvarado Historic District within Wildcat Canyon Regional Park to the north. The trail terminates twelve miles north of Robert Sibley Volcanic Regional Preserve at El Sobrante and seventeen miles south of Huckleberry Botanic Regional Preserve in Castro Valley. It includes segments that run through EBMUD watershed land, which the District has a license to operate. As part of the Ridge Trail, this trail forms a segment of the 550^{+}-mile ridgeline trail network that will eventually encircle the entire San Francisco Bay. It also forms a segment of the 1,200-mile Anza Trail that connects history, culture, and outdoor recreation from Nogales, Arizona, to the San Francisco Bay Area.

Although the Ridge Trail is designated as a multi-use trail for hiking, cycling and equestrian use for much of its length, bicycles are not permitted on the section of trail extending from Tilden Regional Park to Redwood Regional Park. This includes the segment running through Robert Sibley Volcanic and Huckleberry Botanic Regional Preserves except for a 0.9-mile section of trail connecting the Old Tunnel Staging Area to the Sibley Main Staging Area. Bicycles are not allowed in Huckleberry Botanic Regional Preserve because of its status as a botanic preserve. Additionally, the trail segment that links Robert Sibley Volcanic Regional Preserve to the lower portions of Huckleberry Botanic Regional Preserve is very steep with poor sight lines. EBMUD currently does not allow bicycles through its watershed property between Robert Sibley Volcanic

Regional Preserve and Tilden Regional Park. Dog use varies depending on the parkland rules and resource sensitivities, with Huckleberry Preserve being among the most restrictive.

2.3.4.2 Other Regional Trails and Bike Routes

Lafayette/Moraga Regional Trail

The Lafayette-Moraga Regional Trail links the City of Lafayette to the Town of Moraga and EBMUD lands via a former logging railroad corridor that largely parallels St. Mary's Road. Winding through the Moraga Valley, the paved trail connects neighborhoods to schools and businesses in the center of the two towns. Parking is available at trailheads at both ends of the Lafayette-Moraga Regional Trail, as well as Moraga Commons Park located at the intersection of Moraga Road and Saint Mary's Road in the Town of Moraga. In the north, parking is available at the Olympic Boulevard Staging Area at the intersection of Pleasant Hill Road and Olympic Boulevard in the City of Lafayette. In the south, parking is available at the EBMUD Valle Vista Staging Area on Canyon Road at the southern edge of the Town of Moraga. This regional trail is maintained by the District. Allowable uses include hiking, bicycling, dog walking and horseback riding.

Lafayette-Moraga-Orinda Bike Loop Trail

Starting in the City of Lafayette, this bike route follows the Lafayette-Moraga Regional Trail to the Town of Moraga then continues north to the City of Orinda via Moraga Way with connections to the Brookside Trailhead. The Brookside Trailhead links to eastern limits of the Wilder subdivision pedestrian/bicycle circulation system. From Moraga Way, the bike route then follows St. Stephen Trail, which runs along the eastbound lanes of Highway 24 from Bates Boulevard and Davis Drive, near Orinda's historic theater, to St. Stephen's Drive. For much of this section, only a waist-high concrete wall separates the path from traffic. The route continues on El Nido/Mount Diablo Boulevard back into the City of Lafayette. Approximately 65 percent of the ride is on main residential streets, 25 percent on paved bike paths and 10 percent on town streets. This route should be considered a bike-only loop as sidewalks are intermittent and shoulders do not safely accommodate pedestrian or equestrian travel.

East Bay Municipal Utility District Trails

The EBMUD trail system in the East Bay Hills includes a 1.5-mile section of the Skyline Trail between Tilden Regional Park and Robert Sibley Volcanic Regional Preserve. It also contains a small section of trail linking the separate parcels of Huckleberry Botanic Regional Preserve. These trail segments allow hiking and equestrian uses, but no dogs or bicycles. The EBMUD trail system also includes trails around San Leandro Reservoir that connect to the Lafayette-Moraga Regional Trail at the Valle Vista Staging Area. Apart from the trail connections along the Skyline Trail, visitors are required to obtain a permit to use EBMUD trails. Dogs are permitted on leash on some of the permitted trails, but bikes are not allowed on any of these trails.

2.3.4.3 Local Trails

Preserve Sub-area

The Preserve sub-area includes approximately 8.8 miles of trails for hiking, dog walking, and equestrian use, including a section of the Skyline Trail. The trail system includes a one-lane, paved, service road that extends from the parking area to the summit of Round Top that is also used as a hiking trail and a 1.5-mile self-guided tour of the Round Top Volcanoes. Bicycle use is limited to the Skyline National Trail section between the Old Tunnel Road Staging Area and the Overlook Trail, approximately 0.9 miles.

Western Hills Sub-area

There are approximately three miles of existing trails within the Western Hills conservation easement. Approximately 2.7 miles of these trails are designated ranch roads and about 0.4 miles as narrow trails. The Long Term Management Plan (LTMP) designates these trails as multi-use accommodating hikers, bicyclists, dog walkers (with dogs on leash), and equestrians. Access from Wilder City Park to the Western Hills will be defined with wayfinding signs along neighborhood streets. Per the LTMP, signs would be erected explaining that the conservation easement area is protected for the benefit of federally listed species.

McCosker Sub-area

The McCosker sub-area includes approximately 4.2 miles of trails with approximately two miles of trails currently open to the public for hiking, biking and equestrian use, including a section of trail that traverses the proposed recreation development area. This area is kept mowed to allow for informal recreation use and as an informal maintenance supply area for District staff. Dog walking is not permitted.

Huckleberry Botanic Preserve

In addition to the approximately 10.8 miles of trails within the Preserve and McCosker sub-areas currently open to the public, Huckleberry Botanic Regional Preserve has approximately 3.1 miles of trails that are also open to the public. Use of these trails varies by trail and includes, hike-only, no dogs, and trails that accommodate hikers, horses and dogs. Bicycles are not allowed on any of the trails in Huckleberry Preserve.

2.3.4.4 District Trail Campsites in the East Bay Hills

The interconnected system of trails through the East Bay Hills, including the existing Skyline Trail and proposed regional trails identified on the District Master Plan Map, offer opportunities for multi-day trail treks with the McCosker Sub-area recreation site providing an opportunity to fill a missing link in the system.

Trail camps exist at Tilden, Redwood, Black Diamond, Mission Peak, Morgan Territory, Sunol/Ohlone, Round Valley, Briones and Chabot, Regional Parks. The Tilden, Redwood and Chabot campsites are accessible from the Skyline Trail; the Briones campsite is accessible from the regional "Golden Loop Trail System". The Golden Loop Trail system connects to the

following District regional parks, preserves and wilderness areas: Briones, Tilden, Sibley, Huckleberry, Redwood, Las Trampas and Diablo Foothills, as well as Mount Diablo State Park.

Existing campsites that could provide an approximately 22-mile, multi-day trekking experience along the East Bay Hills with linkages to proposed sites and trails in the Project area are provided below heading south to north:

- Chabot Regional Park - Two Rocks to Bort Meadow via the Brandon Trail to the Skyline Trail- Approximately 4.7 miles
- Chabot and Redwood Regional Parks - Bort Meadow to Girl's Camp via the Grass Valley Trail and West Ridge Trail including segments of the Skyline Trail - Approximately 7.5 miles
- Redwood Regional Park and Sibley Regional Preserve - Girl's Camp to proposed Fiddleneck Field recreation area via the Skyline Trail, and proposed Pacific Pea, Ninebark and Alder Creek Nature Trails - Approximately 2.8 miles
- Sibley Regional Preserve – Proposed Fiddleneck Field recreation area to Sibley Backpack Camp via the Arroyo Willow, Gudde Ridge and Skyline Trails - Approximately 2.8 miles
- Sibley Regional Preserve - Sibley Backpack Camp to Gillespie in Tilden via Skyline and American Discovery Trails - Approximately 4.5 miles

Refer to *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites* for the location of campsites in the East Bay Hills in proximity to the Skyline National ~~Historic~~ Recreation Trail, which runs through the Project area.

2.3.5 Existing Recreation and Service Facilities

The Project area includes a variety of existing facilities that offer recreational, educational, and cultural opportunities for area residents in the two-county area serviced by the District, including the residents of the nearby communities of Oakland, Orinda and Canyon. These existing facilities are summarized below for each of the three sub-areas; Preserve, Western Hills, and McCosker.

2.3.5.1 Preserve Sub-area

Parking and Park Operations

The Sibley Main Staging Area includes parking for 38 cars and a park residence. The terminus of Old Tunnel Road includes parking for 13 cars, a park residence and staff office. Narrow and ranch road trails link these two access points and ancillary utilities service the two areas.

Recreation Facilities

The Preserve sub-area includes an interpretive pavilion, public restrooms, a backpack campsite located approximately 0.2 miles from the main staging area, and several stone labyrinths located at the base of the Preserve's quarry pits.

Refer to *Section 2.3.4.3, Local Trails* for a discussion of existing trails and trail uses in the Preserve sub-area.

Education Use Area

The *Robert Sibley Volcanic Regional Preserve Education Use Area* was established in 1985 and includes "the entire area eastward from, and including Skyline Boulevard." This area is designated for education/ research/ study, excepting the staging area, adjacent buildings and trailhead. This designation was made to provide for the preservation of, and education opportunities related to, the interesting and unique natural features in Sibley Volcanic Regional Preserve associated with earlier volcanic activity, including volcanic debris flows, lava flows, and a dike. Remnants from the abandoned quarry operations provides an additional educational element. Per the 1985 LUDP, this *Education Use Area* designation is to be applied to any additional areas acquired northward and eastward of the Preserve boundary.

2.3.5.2 Western Hills Sub-area

Parking and Park Operations

No parking improvements are planned for the Western Hills sub-area beyond the Red-tailed Hawk Staging Area and allocated spaces in Wilder Park incorporated as part of the Wilder residential development (*2004 Second Supplemental EIR for the Montanera Project).*

Recreation Facilities

Refer to *Section 2.3.4.3, Local Trails* for a discussion of trails and trail uses set forth in the Long Term Management Plan for the Western Hills Conservation easement in the Western Hills sub-area.

2.3.5.3 McCosker Sub-area

Parking and Park Operations

The Wilcox Staging area, located at the main entrance at Pinehurst Road, provides approximately ten parking spaces in a gated, gravel parking lot. Service facilities include a park residence and an equipment storage shed.

Recreation Facilities

Refer to *Section 2.3.4.3, Local Trails* for a discussion of existing trails and trail uses in the McCosker sub-area.

2.3.6 Ongoing Land/Habitat Management Programs

The Project area contains a wide range of natural communities, much of which has been substantially altered over time by human activities that have included quarrying, road and trail construction, residential habitation, introduction of non-native species, and the suppression of wildfires.

Ongoing land management actions throughout the Project area have been designed to benefit covered species, natural communities, biological diversity, and ecosystem function, including: 1) preserving habitat; 2) enhancing grassland to promote native biological diversity and habitat through continuation of ongoing grazing and integrated pest management programs; and 3)

enhancing habitat for pallid manzanita (*Arctostaphylos pallida*) through development of Best Management Practices as set forth in the pallid manzanita management plan.

2.3.6.1 Natural Communities Land Management Practices

The Project area includes woodlands, shrublands, and grasslands. These vegetation communities create a mosaic of land cover types that vary according to climate, geomorphic and management factors with grazing providing an effective tool for managing open space, especially grasslands, on a landscape scale. To minimize conflicts between park visitors and grazing livestock, the District provides information to guide visitors on how to behave in the presence of livestock and self-closing trail gates where fencing serves to separate grazing units to keep livestock confined to designated areas and out of the Recreation/Staging Units. A summary of ongoing District land management practices for each of the major natural communities is summarized below.

California Grasslands

The California annual grassland community, also known as non-native grassland, is typically composed of a dense cover of introduced annual grasses and ruderal (weedy) forbs (broad-leaved plants) adapted to colonizing and persisting in disturbed upland habitats.

Existing grassland communities are maintained and improved by protecting and promoting growth of native grassland species with the goal of improving species diversity, wildlife richness, and habitat quality. Vegetation management grazing regimes are directed toward: 1) reduction of invasive and naturalized weed species; 2) reduction of highly flammable fuel loads to reduce wildfire hazard; and 3) management for a heterogenous landscape.

Fire prevention and suppression activities are employed to protect public safety and to protect conservation values. To maximize benefits to this resource, fuel loads (grasses, weeds, and other vegetation) are maintained through a range of integrated pest management practices, including mowing, grazing, hand clearing, or a combination thereof.

Grazing leases issued by the District to manage grasslands address a number of factors including: range infrastructure (e.g., fences and water sources); kind and class of livestock; livestock carrying capacity and stocking rate; grass height and residual dry matter (RDM) per acre related to slope, season of use; special management practices and limitations, including restrictions on grazing in developed recreation areas, and feed and seasonal use restrictions to reduce re-introduction of non-native invasive plant species.

Existing grazing practices within the Project area incorporate a seasonal cow/calf grazing program that takes place between late November to mid-December and April/May (5-6 months) depending on range readiness, RDM factor, and developing climate factors. The overall vegetation goal of the grazing plan is to encourage native perennial grasses and native annual and perennial forbs while reducing/controlling the cover of exotic weeds such as yellow star thistle and weedy, unpalatable annual grasses such as annual foxtail, medusahead, and ripgut brome. To manage non-native annual grasslands, the average fall RDM goal is 1,000 pounds/acre over 90 percent or greater of the field.

Where seeding for native grassland restoration efforts are involved, management tools can include grazing, fire, mechanical (mowing), chemical (application of herbicides), and biological methods. Grazing and recreational use may be deferred during restoration to promote plant establishment.

Mixed Sage Series - Coyote Scrub Areas (Whipsnake Suitable Habitat)

Grassland and shrubland habitat in this mixed habitat series is managed to benefit the state and federally threatened Alameda whipsnake (*Masticophis lateraliss euryxanthus*) and other native reptiles. Indicators of optimal habitat conditions are those that include mixed sage series on south-southwest xeric slopes within approximately 550 feet of water interspersed with rocky outcrops with deep crevices supporting Alameda whipsnakes' prey items (e.g., Western fence lizard *Sceloporus occidentalis* and Skilton's skink *Plestiodon skiltonianus*). California sagebrush (*Artemisia californica*) serves as an indicator species of this habitat type). Appropriate management activities may include selective grazing to maintain a mosaic of habitat characteristics conducive to Alameda whipsnake and other native reptiles. Goat grazing, where determined to be appropriate, is carefully monitored to avoid over-reduction of brush habitat. Other methods (e.g., hand pruning, planting, mowing) may also be used, where applicable, to maintain optimal vegetation density.

Oak Woodland and Riparian Woodlands (California Red-legged Frog Suitable Habitat)

Woodland environments are retained in their natural state, whenever possible, to maintain water quality, biotic diversity, aesthetic values, and recreational opportunities. Management practices for Oak Woodland and Riparian Woodland communities consist of conserving woodland areas for plant diversity.

Riparian vegetation management actions to maintain native dominance and manage around infrastructure and recreational opportunities can include a variety of tools, as appropriate to the site conditions: prescribed fire, mechanical treatments, firebreaks, and active management to encourage oak regeneration. Oak regeneration methods include: releasing seedlings from competing vegetation, or planting acorns and seedlings from local genetic stock. A variety of hand tools and motorized, mechanical tools may be used for cutting, grubbing, and mowing dependent on vegetation type. Motorized mechanical vegetation controls are employed from top of bank of creek channels and drainages to minimize riparian impacts. Select herbicides may be used to control particularly difficult noxious and invasive weeds, under the supervision of the Integrated Pest Management Department. Volunteers may be used under the supervision of park staff to control invasive plants by hand pulling, grubbing and cutting.

Grazing within Oak and Riparian woodlands is managed through a seasonal cow/calf plan designed specifically to maintain habitats for special status species such as California red-legged frogs (CRLFs) that are known to use coastal oak woodlands as upland refugia. Seasonal (winter spring) grazing reduces annual grass competition for young oaks and removes the potential herbivory on the oaks in the summer and fall. The minimum average fall RDM goal is 800 pounds/acre on flat areas, and an average of 1,000 pounds/acre on slopes.

Eucalyptus and Monterey Pine Forests

In 2010 the Board of Directors approved a *Wildfire Hazard Reduction and Resource Management Plan* (*Hazard Reduction Plan)* specifically directed at the urban interface, the boundary between open space parklands and adjacent residential neighborhoods, including areas contained within the Project area. This plan provides basic guidelines for protecting environmental values, enhancing habitat, restoring native vegetation and setting priorities for treatments while reducing wildfire hazards includes fuels management, including recommendations for managing eucalyptus and pine forests. Refer to DEIR pages 3.8-8 – 11 -*Figure 3.8a, Recommended Treatment Areas in Sibley Volcanic Preserve* and *Figure 3.8b, Recommended Treatment Areas in Huckleberry Botanic Preserve for the location of treatment areas recommended in the Hazard Reduction Plan for the Project Area.*

2.3.6.2 Integrated Pest Management (IPM) Program

The District's Integrated Pest Management (IPM) Program includes a process for assessing and determining strategies necessary to achieve control in situations where identified pest species present unacceptable safety, health, and economic problems, or cause functional damage. Treatment strategies for pests include management of human behavior, habitat modification, physical barriers, competitive native planting, biological, mechanical, cultural and chemical control. IPM is an adaptive process that incorporates evolving science technology, and understanding of pests and their environment. It is an ecosystem-based pest management strategy that focuses on long-term prevention or suppression of pest problems through integrated techniques with minimum impact on human health, the environment, and non-target organisms.

The District has identified four main types of pests: agricultural pests (e.g., certain noxious weeds), ecological pests (that threaten diversity, rare plants and ecosystem function), public health and structural hazard pests (e.g., rats), and recreational (e.g., algae blooms, poison-oak, ticks, yellowjackets) (*East Bay Regional Park District Pest Management Policies and Practices Manual* (1987).

The IPM program includes a range of integrated control measures to promote environmentally safe, cost effective, and sustainable pest management practices that ensure public and employee protection and benefit native plant communities. These measures include monitoring and tracking pests through surveys and employee observations.

Noxious Weed Controls

Invasive, non-native, noxious weeds have the potential to adversely impact native habitats by outcompeting and replacing native plant species, including listed species, derailing restoration efforts, decreasing ecological function and affecting visitor experiences and perceptions of the parkland. In some cases, even native species such as poison oak (*Toxicodendron diversilobum*) may adversely affect visitor experiences and must be controlled. Invasive, non-native, noxious weeds and native plants that may cause potential harm are managed using a range of techniques appropriate to the situation, taking into consideration plant species, site conditions and recreation uses in the affected area. Procedures can include hand or mechanical equipment removal, herbicide applications approved by the District IPM Department, revegetation treatments (e.g.,

mulch, seeding), plant selection as a component of restoration projects, or combinations thereof. Hand and mechanical equipment, as appropriate, may be employed to remove overhanging limbs, or diseased, or fallen trees where trees represent a hazard to park visitors or structures.

Non-Native Wildlife Controls

Non-native wildlife have the potential to adversely impact native species including listed species, derail restoration efforts, impair park infrastructure, cause disturbance, and in some cases, cause harm to the public. Where non-native wildlife is impending upon restoration efforts, park infrastructure, or public safety a variety of tools may be employed. Procedures are selected by carefully considering the effects these management actions could have on beneficial species and desired recreation experiences. Measures that may be used to monitor and manage non-native wildlife and non-native amphibians and fish include: trapping; and coordination with Animal Control Officials to minimize the drop off potential of nuisance wildlife (e.g., feral dogs and cats, skunks, raccoons).

Pathogen Controls

One of the pathogens of greatest concerns to the native habitat in the Project area is phytophthora, a soil-borne pathogen that infects trees, and woody plants. Phytophthora is part of a larger group of organisms known as oomycetes (egg-fungi). Commonly called "water molds", phytophthora species are land dwelling plants that thrive under wet environmental conditions. To minimize the spread of this pathogen, District Best Management Work Practices include arriving with clean equipment and leaving the work site with clean equipment. This includes cleaning soil from shoes, saws and other equipment at the work site. Cleaning methods include brushing and blowing soil and debris off shoes, tools and vehicles followed by water or a sanitizing solution, if necessary, taking care to ensure that no erosion occurs or waterways are contaminated.

2.3.6.3 Wildlife Corridors

Acquisitions beginning in 1936 and continuing in 2010 with the donation of the McCosker parcel and the anticipated transfer of the Western Hills Open Space have served to expand the Robert Sibley Volcanic Regional Preserve northeast towards the City of Orinda and south into the unincorporated area of Canyon. These District parklands adjoin the EBMUD protected watershed lands creating a permanent wildlife corridor crossing over the Caldecott Tunnel/Highway 24.

In 2004, a resource management plan was prepared for the Caldecott Wildlife Corridor by the Alameda-Contra Costa Biodiversity Working Group, a partnership of public and private organizations, including the District. The purpose of the 2004 Caldecott Wildlife Corridor Study was to assemble information on resources and resource management, to analyze management options, to identify mutually beneficial approaches which avoid or reduce conflict among interests, and to define specific actions to address and balance resource management needs for the area.

The *Caldecott Wildlife Corridor Study* (2004) suggests that the Caldecott Wildlife Corridor extending along the Oakland – Berkeley Hills above the Caldecott Tunnel may be important for

local wildlife migration, particularly for medium-sized and larger animals (e.g., foxes, deer, coyotes, mountain lions, etc.) with habitat ranges that extend throughout the East Bay Hills.

To monitor this activity, the District installed remote camera traps in several locations within the Preserve sub-area in July and November 2016 to assess carnivore activity (i.e. mountain lion, bobcat, coyote, gray fox, red fox etc.) in various habitats types including both control and treatment locations within the Wildfire Hazard Reduction Project Area in the Preserve sub-area and along the Skyline-Bay Area Ridge Trail. The remote camera traps have captured several carnivores and other vertebrates using the Caldecott Wildlife Corridor to move though Sibley Preserve. As this is an ongoing study, no formalized written reports have been completed. Refer to *Figure 2-4, Special Protection Features* for the location of the Caldecott Wildlife Corridor Study Area.

2.4 Project Purpose and Statement of Objectives

2.4.1 Project Purpose

The purpose of the LUPA is to:

- Append the 1985 LUPD to incorporate the Western Hills and McCosker sub-areas and developed local trails into Robert Sibley Volcanic Regional Preserve [EBRPD Resolution No. 2006-12-280 – Approval of Resolution of Intention for the Formation of Gateway Valley Zone of Benefit AB6]; and
- Preserve the rich heritage of natural and cultural resources and provide open space, trails, and safe and healthful recreation and environmental education in accordance with the District 2013 Master Plan.

2.4.2 Project Goals

The overarching goals for the Project are to:

- Maintain the natural ecology of the Project area and enhance ecosystem functioning in key locations;
- Maintain and augment existing public recreation and interpretive opportunities within the Project area; and
- Incorporate climate adaptation and resiliency strategies into creek restoration actions, recreational facility design, and program development.

2.4.3 Statement of Objectives

The following objectives and strategies have been identified to support the Project goals.

2.4.3.1 Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat

Protect and support natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages, including habitat for special status species.

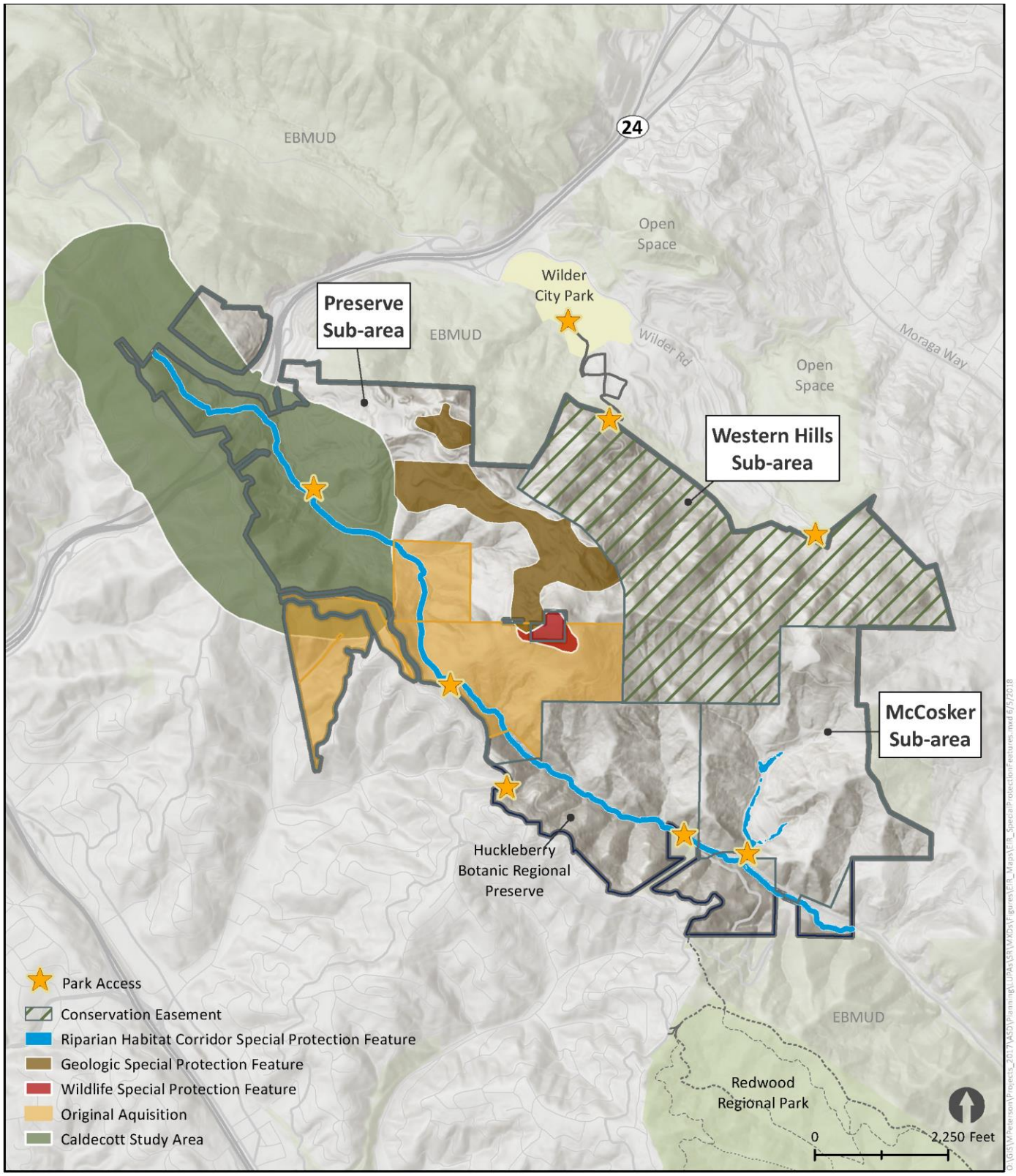


FIGURE 2-4: SPECIAL PROTECTION FEATURES

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ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

Supporting Strategies

- Protect and support special status species and their habitat through existing management programs and by adhering to regulatory obligations.
- Maintain and enhance habitat communities through existing resource and noxious weed management plans, policies, and programs.
- Provide and maintain wildlife linkages through management of conservation easements.
- Manage fuel loading of flammable vegetation to minimize the negative impacts of intense fire events.

2.4.3.2 Objective 2: Creek Restoration

Improve creek functions in the McCosker sub-area, including overall ecosystem health for native aquatic organisms, water quality protection, sediment sorting and transport, flood storage capacity, and site aesthetics.

Supporting Strategies

- Replace a failing culvert system with a geomorphically stable channel that includes pool riffle complexes that will sort and transport sediment, thereby providing benefits to aquatic organisms.
- Lower peak flows and stretch out the hydrograph by creating channel roughness and floodplain storage in the creek channel design.
- Provide a connection to San Leandro Creek that will allow for upstream migration of rainbow trout (*Oncorhynchus mykiss*).
- Create a natural riparian corridor to benefit aquatic and terrestrial species and improve the overall aesthetics of the development area.
- Establish a monitoring and reporting program to observe vegetation establishment success and geomorphic evolution of the Project site, replanting areas that have not been successful to improve overall ecosystem health.
- Increase groundwater infiltration by reestablishing flow over natural channel beds.
- Devote a portion of the interpretive watershed programming to water quality monitoring and posting to citizen scientist websites.

2.4.3.3 Objective 3: Trail Development

Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda.

Supporting Strategies

- Develop trail alignments to minimize potential impacts to cultural resources by conducting cultural resource surveys of proposed routes and finessing alignments to avoid resources, and/or preserve and interpret features, as appropriate.

- Prior to construction of proposed trail alignments, map potential impact areas for sensitive natural communities and special status plant species over the annual seasonal cycle and finesse alignments to minimize impacts within the zones previously surveyed and cleared for low cultural sensitivity.
- Hand build trails in areas of high resource sensitivity, where feasible.
- Provide interpretive information that educates and informs park visitors of the natural communities and ecosystem functioning of the areas they will be traveling through and reminders to stay on trails to protect these sensitive resources.
- Provide connectivity via a multi-use trail system (e.g., hike, bike, equestrian, dog walking) including narrow, natural surface trails, that provides access between the McCosker site and the Red-tailed Hawk Staging Area, city and county bike routes, existing Sibley Round Top Trail, and Huckleberry Preserve, while recognizing that not all uses may be appropriate for all trails.
- Augment parking at access points to help disperse use, improve connectivity to neighboring communities, and expand trail staging opportunities.
- Consider the effects on traffic patterns on neighborhood streets at public access points, including staging areas and trailheads.

2.4.3.4 Objective 4: Recreation Facility and Interpretive Program Elements

Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural history.

Supporting Strategies

- Combine interpretive and small rustic group camp recreation facilities within the McCosker sub-area into one facility limiting development to previously disturbed areas.
- Provide backpack camp opportunities within the developed recreation areas to encourage multi-day trail treks along the interconnected system of trails through the East Bay Hills, including the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail.
- Improve public access routes to facilitate connections to developed recreation areas, while limiting and screening parking so it does not overwhelm the site or interfere with the scenic and visual resources.
- Provide interpretive education programs focused on creek and habitat restoration and the site watershed system through the development of a controlled access nature trail along the restored creek channel in the McCosker sub-area.
- Develop interpretive programs and/or self-guided walks that incorporate existing features documenting historical uses of the site.

2.4.3.5 Objective 5: Operations and Maintenance

Provide facilities, equipment, and programs that facilitate staff in providing safe and enriching recreation and interpretive experiences and support habitat protection, conservation and enhancement programs.

Supporting Strategies

- Incorporate an all-weather access roadway system to provide visitor access to the developed recreation sites and maintain emergency and maintenance vehicle access within the Project area to service recreation sites and support resource management programs.
- Provide equipment storage facilities to facilitate maintenance of the recreation sites.
- Maintain and augment the on-site park security residence program with emergency response features, including additional water storage tanks, emergency phones, and creation of an area that could be dedicated to emergency response within the developed recreation site located in the McCosker sub-area.

2.4.3.6 Objective 6: Climate Adaptation and Resiliency

Incorporate climate adaptation and resiliency strategies into the creek restoration actions, recreational facility design and material selection, and program development that reflect an era of changing climate conditions.

Supporting Strategies

- Maintain and enhance, where feasible, the native diversity of plant communities through existing resource and noxious weed management plans and policies.
- Maintain, monitor and adapt management programs for natural communities and habitat to address climate change effects.
- Maintain and augment grazing infrastructure, as needed, to implement adaptive vegetation management programs directed at protecting and supporting natural communities and habitat in an era of changing climate conditions.
- Reduce heat impacts, and absorb and store carbon, while benefitting the visitor experience, through creation of woody riparian vegetation along restored creek channels and within the developed recreation sites.
- Incorporate alternative energy sources such as solar into the project design, where feasible and appropriate.
- Reuse on-site materials to develop new recreation and interpretive features, where feasible and appropriate.
- Develop a portion of the interpretive programming for the project site to highlight climate adaptation and resiliency.

2.5 Proposed Project Actions

Project recommendations include two main components: 1) McCosker sub-area creek restoration and enhancement; and 2) recreation and public access improvements.
Proposed actions for these components are described in detail in the following sections and summarized by the location where they would occur in *Table 2-1 - Proposed Actions by Location*.

TABLE 2-1
PROPOSED ACTIONS BY LOCATION

Proposed Action	Preserve Sub-Area	Western Hills Sub-Area	Mccosker Sub-Area	Huckleberry Botanic Regional Preserve
Creek Restoration and Enhancement				
Creek Restoration Activities			✓	
Recreation and Public Access Improvements				
Improvements to Existing Staging Areas	✓		✓	
Improvements to Existing Roadways	✓		✓	
Bridge Installation			✓	
Trail System Expansion	✓	✓	✓	✓
Recreation Facility Development			✓	
Improvements to Utility Infrastructure	✓		✓	

Table 2-2, Consistency with Project Objectives shows the various activities associated with each proposed action by sub-area and their consistency with the Project objectives.

2.5.1 Park Facility Naming

The Project proposes names for previously unnamed features and proposed sites, facilities, and trails. To simplify reading, the proposed names are used throughout this EIR with occasional references to existing names, where applicable.

In keeping with Naming Policy [Resolution No. 2004-04-73 (4/20/04)] the new trails, features, areas and facilities in the Project area are proposed to be named after natural features such as plant and animal life, geographic, topographic or paleontological features, or for cultural features such as archaeological and historic artifacts, historic persons, families or events. Existing historically related names are respected. In this case, in accordance with provisions in EBRPD Resolution No. 2010-9-237 regarding acceptance of the donation of the McCosker property, the District has memorialized the McCosker family's history with the land by naming the McCosker Loop Trail in their honor.

TABLE 2-2
PROPOSED ACTIONS AND CONSISTENCY WITH PROJECT OBJECTIVES

Proposed Action	Preserve Sub-Area	Western Hills Sub-Area	Mccosker Sub-Area	Huckleberry Botanic Regional Preserve	Consistency With Project Objectives
Restoration and Enhancement					
Creek Restoration Activities			✓		Implementation of the proposed McCosker sub-area creek restoration and enhancement elements would be consistent with: Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat; Objective 2: Creek Restoration; and Objective 6: Climate Adaptation and Resiliency.
Recreation and Public Access Improvements					
Improvements to Existing Staging Areas	✓		✓		Proposed improvements to existing staging areas would benefit park visitors experience and staff efficiency consistent with Objective 3: Trail Development and Objective 5: Operations and Maintenance
Improvements to Existing Public Access Routes	✓		✓		Proposed improvements to existing public access routes would benefit park visitors experience consistent with Objective 3: Trail Development, and in the McCosker sub-area would support the proposed recreation facility improvements, consistent with Objective 4: Recreation Facility and Interpretive Program Elements; and Objective 5: Operations and Maintenance
Bridge Installation			✓		Installation of proposed bridges would support proposed recreation facility improvements consistent with Objective 4: Recreation Facility and Interpretive Program Elements and Objective 5: Operations and Maintenance
Trail System Expansion	✓	✓	✓	✓	Expansion of the proposed trail system would be consistent with Objective 3: Trail Development; and Objective 4: Recreation Facility and Interpretive Program Elements
Recreation Facility Development			✓		Implementation of the proposed recreation facility improvements would be consistent with Objective 4: Recreation Facility and Interpretive Program Elements
Improvements to Utility Infrastructure	✓		✓		Implementation of proposed utility infrastructure improvements would support existing and proposed recreation facilities consistent with Objective 5: Operations and Maintenance.

2.5.2 McCosker Sub-area Creek Restoration and Enhancement

2.5.2.1 Restoration Objectives

The Project includes restoration and enhancement of two culverted drainages that are in poor condition, collapsing and partially blocked with sediments, herein referred to as Alder and Leatherwood Creeks. These culverted sections make up approximately 2,900 linear feet out of the total 3,061 restoration area. The Project also includes enhancements within San Leandro Creek and the culvert under Pinehurst Road to facilitate fish passage.

The two primary objectives of the restoration work in Alder Creek are to: 1) remove a deteriorating system of culverts and construct an open, stable channel for conveying creek flows; and 2) revegetate the channel corridor to restore riparian ecological function.

The three objectives of the restoration work for Leatherwood Creek are to: 1) improve the stability of Fiddleneck Field, which could be jeopardized should this culvert system fail; 2) create an alternate, stable creek channel to transport water previously contained within pipes to expand the visual and habitat values of the site; and 3) revegetate the channel corridor to restore riparian ecological function.

The primary objective of the enhancement within San Leandro Creek and the Pinehurst Road culvert is to facilitate fish passage from San Leandro Creek to Alder Creek.

2.5.2.2 Creek Restoration and Enhancement

Creek restoration and enhancement activities include daylighting and restoring Alder and Leatherwood Creek, enhancing existing riparian habitat along Alder Creek, increasing the height of the existing riffle within San Leandro Creek and installing baffles within an existing culverted portion of Alder Creek beneath Pinehurst Road to facilitate fish passage.

The Alder Creek restoration work would involve daylighting (freeing the creek flow from culverts and paved channels) approximately 1,387 linear feet of the main stem, 227 linear feet of the west branch, and 528 linear feet of the east branch and revegetating 149 linear feet of existing daylighted riparian area as part of this Project for a total of 2,291 linear feet of Alder Creek. Approximately 770 linear feet of the culverted portion of a south branch tributary to Alder Creek, known as Leatherwood Creek, would also be daylighted and restored bringing the total restored creek area to 3,061 linear feet. Construction of the restored creek channels are anticipated to require removal of fill, most of which would be transferred to the existing disturbed and previously developed terraced area that would be developed into the Fiddleneck Field recreation area.

The creek restoration design approach uses fundamental concepts in fluvial geomorphology and engineering principles to create a dynamically stable creek. The reconstructed channels would be constructed as a high gradient, step-pool system that would incorporate: a mix of cascades and resting pools, including pocket pools in steeper areas and potential spawning sites for rainbow trout. The spacing of these steps would be based on the slope and hydraulic characteristics of the channel.

The gradient of the main stem of Alder Creek would range from 1.5 to 10 percent. A low flow channel ranging from 8-12 feet wide would be incorporated into the design. The east and west branches of Alder Creek would have slopes ranging between 10 and 15 percent, and be composed of boulder cascade channel type. Leatherwood Creek would have channel slopes between 1.5 and 30 percent and would incorporate a mix of the channel forms described above.

The intent of this design is to achieve a stable and self-maintaining creek that requires a low level of adaptive management and maintenance practices. This would allow the creek to exist in a state of dynamic equilibrium, where it is properly transporting both water and sediment in a balanced manner, neither leading to excessive erosion nor deposition throughout the restored creek channel.

The creek restoration area comprises approximately 4.0 acres, and extends vertically to the maximum depth of project ground-disturbing activities. For the creek restoration components, including daylighting and revegetation, typical cut depth is anticipated to be 11 feet below ground surface, but would extend between 8 and 15 feet below ground surface in places. The principal design considerations associated with creek daylighting involve: 1) the stability of creek banks at the planned inclinations under "normal" conditions, with localized slope instabilities under adverse conditions (e.g. earthquake or flood) tolerated; and 2) the stability of the creek channel and 'naturalizing' of the constructed features.

Ten culverts, ranging in diameter from 8 inches to 24 inches, currently connect to the existing primary culvert network that would be daylighted for creek restoration. These tributary culverts would either be replaced or remain in place and new outfall structures, integral with channel design, would be installed to dissipate the energy of discharging flows. Rock outfalls and concrete headwalls would be constructed for each drainage culvert.

The existing 60-inch reinforced concrete pipe (RCP) culvert that flows beneath Pinehurst Road and discharges into San Leandro Creek would be left in place. The upstream end of culvert lacks a headwall, and a new headwall would be installed.

Approximately 0.1 acre of existing riparian habitat along Alder Creek (of the total of 4.0 acres of restoration described above) would be enhanced through the installation of riparian plantings as described below. No grading or earthwork would occur in this enhancement area.

An existing riffle located within upper San Leandro Creek would be raised to increase the water surface at the downstream end of the Pinehurst Road culvert. The work would consist of placing no more than 50 cubic yards of cobbles and streambed material on top of the existing riffle, and raising the riffle height by 1 to 1.5 feet. The existing channel bed is 19 feet wide and cobble and streambed material would be placed within the channel bed along 20 linear feet of San Leandro Creek (approximately 330 square feet of fill).

Approximately 10 steel baffles[1] would be installed within the 114-linear foot existing culverted portion of Alder Creek beneath Pinehurst Road to facilitate fish passage between San Leandro Creek and Alder Creek.

2.5.2.3 Creek Channel Creation Construction Activities

Creek restoration activities would involve: 1) excavating approximately 30,300 cubic yards of fill material to daylight the creek and create a stable channel; 2) placing this material within the currently disturbed and previously developed area to be defined as the Fiddleneck Field recreation area; 3) removing the existing culverts and drainage structures in Alder and Leatherwood Creeks; 4) abandoning approximately 470 linear feet of culvert in place along Leatherwood Creek; and 5) constructing in-stream and near-stream enhancements.

Creek Channel Creation

Existing structures within the creek alignment would be taken out of the channel and utilities would be relocated. Existing structures include approximately seven concrete junction boxes, three concrete headwalls, approximately 70 linear feet of concrete retaining wall, and 2,720 linear feet of 30-inch to 60-inch corrugated metal pipe. In addition, miscellaneous storm drains and drain inlets will also be demolished and removed from the site.

Daylighting would occur in locations where the existing pipes to be removed are buried in fill. The daylighted creek banks would be laid back to an inclination of at least a 3:1 (horizontal: vertical), except where space limitations require a steeper slope. For slopes 2:1 or steeper, over-excavation and recompaction of suitable material in lifts interlayered with geo-grid may be required, based on geotechnical observation during construction. For slopes between 2:1 and 3:1, over-excavation and recompaction of suitable material in lifts may be required, based on geotechnical observation during construction. Biotechnical bank stabilization techniques, which include vegetated soil lifts and brush mats, will be employed in areas where banks are 2:1 or steeper. For daylighting, soil would be excavated and site infrastructure (i.e., culverts) containing the water flows would be removed; and a new channel would be constructed, typically extending about eight (8) to 15 feet below current site grades. The restored Alder Creek channel would connect to three existing tributaries; the west branch of the main tributary, which merges with the natural channel above the confluence, the east branch, which is currently contained within culverts above the confluence, and Leatherwood Creek, which joins the main stem approximately 300 feet upstream from Pinehurst Road.

Large wood and woody debris would be installed at suitable locations within the creek restoration area to create and support microhabitat for aquatic species and could be used to create areas of flow constriction, direct or turn flow, and control grade. Several trees would be removed under this Project and, suitable trees, greater than 18 inches diameter at breast height (dbh) would be salvaged and used within various habitat log structures on-site.

[1] A structure designed to assist with upstream fish passage.

Vegetation Disturbance during Construction

During the excavation work, plant material containing predominantly non-native plant habitat would be removed and later replaced with native riparian vegetation. The creek and fill areas would be cleared and grubbed of surface and sub-surface deleterious mater, including vegetation, aggregate road base material, concrete and abandoned utilities. These materials would be removed from the site or stockpiled for reuse if approved by the District. Depressions resulting from the removal of underground obstructions (including tree stumps and root balls) that extend below the proposed finished grades would be cleared and the depressions backfilled with suitable material compacted to the requirements given in *Appendix E, Geotechnical Investigation Report McCosker Stream Restoration and Recreational Infrastructure Project Robert Sibley Volcanic Regional Preserve, Contra Costa County, California*.

Alder Creek

The lower reach is characterized as a culverted section that has been overlain with compacted dirt fill. The former riparian habitat has been replaced with non-native grasses and noxious, non-native weed species. During the excavation work, plant material containing predominantly non-native plant habitat would be removed from the lower reach. In the upper reach, most of the native riparian habitat would remain and measures would be employed to minimize disturbances to this habitat.

Construction activities involved in daylighting Alder Creek would occur over a 3.3-acre area and would require removal of 3.3 acres of existing vegetation and approximately 34 mature native and non-native trees to complete the 2,291 linear feet of restoration work.

Leatherwood Creek

This tributary is generally characterized as a culverted section that has been overlain with compacted dirt fill. The former riparian habitat has been replaced with non-native grasses, shrubs, noxious, non-native weed species, and remnant plants from a former plant nursery operation. During the excavation work, plant material within the channel would be removed along with a significant quantity of fill. Construction activities involved in daylighting Leatherwood Creek would occur over a 0.7-acre area. No tree removal would be required.

Ground Surface Protection during Construction

During construction, disturbed areas would be protected with correctly installed erosion control measures (e.g., jute, straw, coconut fiber erosion control fabric, coir logs, straw, etc.) throughout the approximately 3,061 linear feet of creek restoration areas.

San Leandro Creek Fish Passage Enhancements

Riparian habitat occurs along San Leandro Creek within the Project area. To raise the level of an existing riffle, the contractor will likely place the fill into the channel from equipment located at the top of bank near Pinehurst Road. Some shrub or understory vegetation may be removed to provide equipment access. Any temporarily impacted vegetation would be replaced following construction. No tree removal would be required.

2.5.2.4 Riparian Habitat Restoration

Riparian habitat would be restored throughout the length of the 2,142-linear foot restored Alder Creek channel, 770-linear foot restored Leatherwood Creek, and 149-linear foot enhanced Alder Creek (existing riparian habitat that would only be planted and not graded) by planting wetland and riparian vegetation along the daylighted creek channel with riparian plants native to the site, including oak woodland species, such as coast live oak (*Quercus agrifolia*) and California buckeye (*Aesculus californica*).

The restoration plantings would be installed in four general zones: floodplain, lower riparian, upper riparian, and an understory zone. The floodplain would be established adjacent to the active channel and include willows (*Salix* sp.) and other instream wetland species such as sedges and rushes. The lower riparian bank would be established from the bank toe up to six feet above the thalweg and would include a variety of riparian and wetland species such as willows, mugwort (*Artemisia douglasiana*), and western lady fern (*Athyrium filix-femina* var. *cyclosorum*). The upper riparian bank would be established along the creek banks greater than six feet above the thalweg and would include riparian and woodland species such as coast live oak, snowberry (*Symphoricarpos albus* var. *laevigatus*), and yarrow *(Achillea millefolium*). Understory riparian shrubs, such as oso berry (*Oemleria cerasiformis*) and thimbleberry (*Rubus parviflorus*) would be installed within existing daylighted sections of Alder Creek to enhance the existing habitat.

Through the establishment of a properly sized channel, the creation of steps and step pools that use rock or wood, and the establishment riparian vegetation using native plantings and soil bioengineering principles, habitat would be created that would provide a constantly changing and dynamic environment for the local flora and fauna to thrive.

The Project would restore, establish, and enhance 4.0 acres of riparian habitat. The actual surface area in water would cover approximately 0.6 acre of aquatic habitat.

2.5.2.5 Habitat Restoration Benefits

Once daylighted, Alder Creek would have the potential to provide indigenous fish species, including native rainbow trout, with upstream access to constant water flows emanating from springs and habitat for California red-legged frog. The Leatherwood Creek restoration site would provide habitat for a variety of aquatic species, excluding indigenous fish species.

With full implementation of the bank and channel restoration measures for Alder and Leatherwood Creeks, a total of approximately 3,061 linear feet of creek channel would be restored and enhanced within the McCosker sub-area as part of the San Leandro Creek watershed. This restoration would include approximately four acres of riparian habitat along two tributaries to San Leandro Creek.

2.5.3 Recreation and Public Access Improvements

2.5.3.1 Unit Designations

The District establishes Land Use Designations, also known as unit designations, to indicate the levels of resource protection required and recreational intensity allowed in specific parkland areas,

including Natural Units, Recreation/Staging Units and Special Protection and Special Management Features. Following are the existing and proposed unit designations for each sub-area.

Natural Units

Natural Units are managed for their unique or fragile habitat values with public access primarily limited to trails.

The Preserve sub-area contains 384 acres designated as Natural Units in the 1985 LUDP and 292 acres in subsequent amendments bringing the total area designated as Natural Units to 676 acres. Special Protection Features and Special Management Features are also described for this sub-area. No additional acreage is proposed for this designation in this sub-area.

The Western Hills sub-area 389-acre conservation easement has a proposed designation of Natural Unit.

The McCosker sub-area contains 245 acres with a proposed designation of Natural Area. Once restored, Alder and Leatherwood Creeks would be designated as Special Protection Features.

Recreation/Staging Area Units

The following existing and proposed sites meet the criteria of a Recreation/Staging Unit.

The Preserve sub-area contains three acres designated as Recreation/Staging Units with both the Main Staging Area and Old Tunnel Road access points meeting the criteria of a Recreation/ Staging Unit. No additional acreage is proposed for this designation in this sub-area.

The 0.5-acre Red-tailed Hawk Staging Area in the Western Hills sub-area has a proposed designation of Recreation/Staging Area Unit. This area, which is located outside of the conservation easement, is being developed as a visitor service amenity intended to provide a staging area for trails located within the conservation easement area in accordance with provisions of the Wilder residential development agreements and the Wilder 2018 Circulation Plan. It will include parking for 19 cars and two two-horse trailers, a restroom and informal picnic site.

The McCosker sub-area contains five acres of previously developed and disturbed lands with a proposed designation of Recreation/Staging Area Unit.

Considering the 639 additional acres that would be added to Robert Sibley Regional Preserve with the McCosker and Western Hills sub-areas, the Preserve parkland acreage would nearly double, while overall developed area density would decrease by approximately 13 percent and trail density as measured by miles per acre would decrease by approximately 0.40 percent, bringing the total area remaining as Natural Units to 99 percent.

2.5.3.2 Overview of Improvements

The recreation and public access improvements include six main elements: 1) improvements to existing staging areas, 2) improvements to existing roadways, 3) bridge installation, 4) trail system expansion, 5) recreation facility development, and 6) improvements to utility infrastructure.

Overall, the Project's proposed recreation and public access improvements would add: two new vehicle access points providing a total of 193 single vehicle and three two-horse trailer parking spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The Project would also add: approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

The total acreage devoted to recreation/staging area units would be approximately 12.4 acres (including approximately 5.0 acres of public access and recreation features in the McCosker sub-area and 0.5 acres in the Western Hills sub-area) or approximately one percent of the total Project acreage. This would represent an increase of five developed acres to the current developed area of 6.9 acres.

Table 2-3 provides a comparative summary of the proposed actions with existing conditions. *Figure ES-2, Land Use Plan Amendment Project Overview* provides an area-wide overview of the

existing and proposed site elements. *Figure 2-5, Proposed Actions Preserve Sub-area, Figure 2-6, Proposed Actions Western Hills Sub-area, Figure 2-7 Proposed Actions McCosker Sub-area, Figure 2-8 Proposed Actions for McCosker sub-area Creek Restoration and Recreation Development Area,* and *Figure 2-9 Proposed Actions Huckleberry Sub-area* identify the locations of each of the Project recommended actions.

2.5.3.3 Improvements to Existing Staging Areas

Staging areas are sites located around the perimeter of the Project area that provide opportunities for the public to access trails and recreational facilities. Features can include parking areas, restrooms, drinking fountains, information panels or kiosks/ pavilions, informal picnic sites, bike racks, hitching posts, park security residences and staff offices, and wayfinding and regulatory signs.

Improvements at the access points are directed at providing enough notice to drivers approaching staging areas along Skyline Boulevard and Pinehurst Road to avoid or stop ahead of potential access point conflicts and may include, wayfinding signage denoting the presence of a staging area driveway or access point placed at a distance that affords approaching vehicles time to stop. These distances would follow State standards for appropriate stopping sight distance for vehicles traveling at the prevailing speeds. Additionally, on-street parking directly adjacent to each driveway is proposed to be restricted to an extent that affords outbound vehicles to clearly see approaching vehicles on both Skyline Road and Pinehurst Road.

Preserve Sub-area

Sibley Main Staging Area

Modifications to the existing Sibley Main Staging Area would expand the existing parking capacity from 38 spaces to approximately 73 spaces consistent with the recommendations in the 1985 LUDP. The one, two-horse trailer would be retained with the proposed parking modifications. Additionally, the existing Skyline/Bay Area Ridge Trail connection to the Sibley Main Staging Area would be realigned to avoid the new parking access road. Refer to *Figure 2-10, Proposed Parking Lot Layout for Sibley Main Staging Area* for the conceptual parking layout.

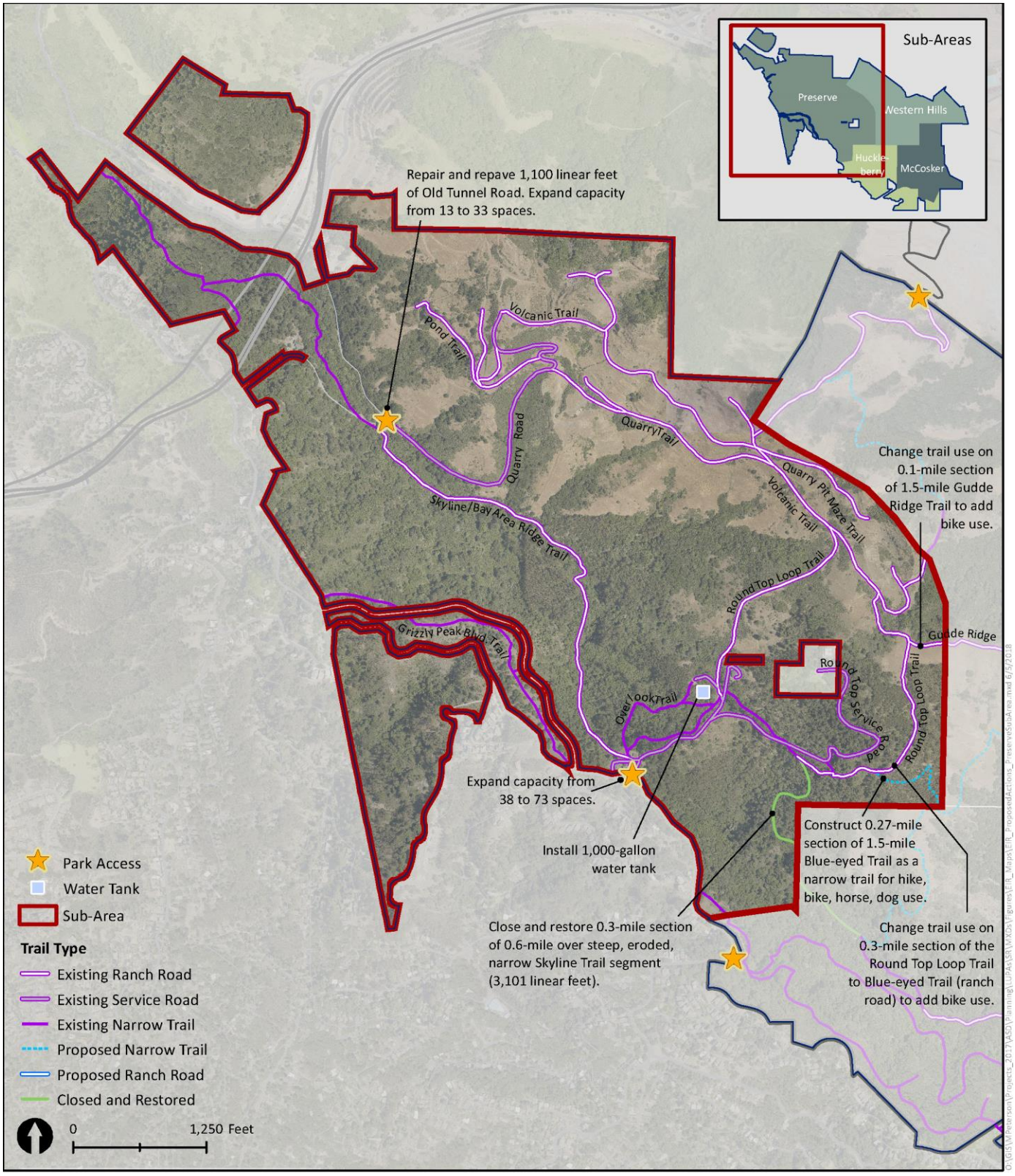

FIGURE 2-5: PROPOSED ACTIONS FOR PRESERVE SUB-AREA

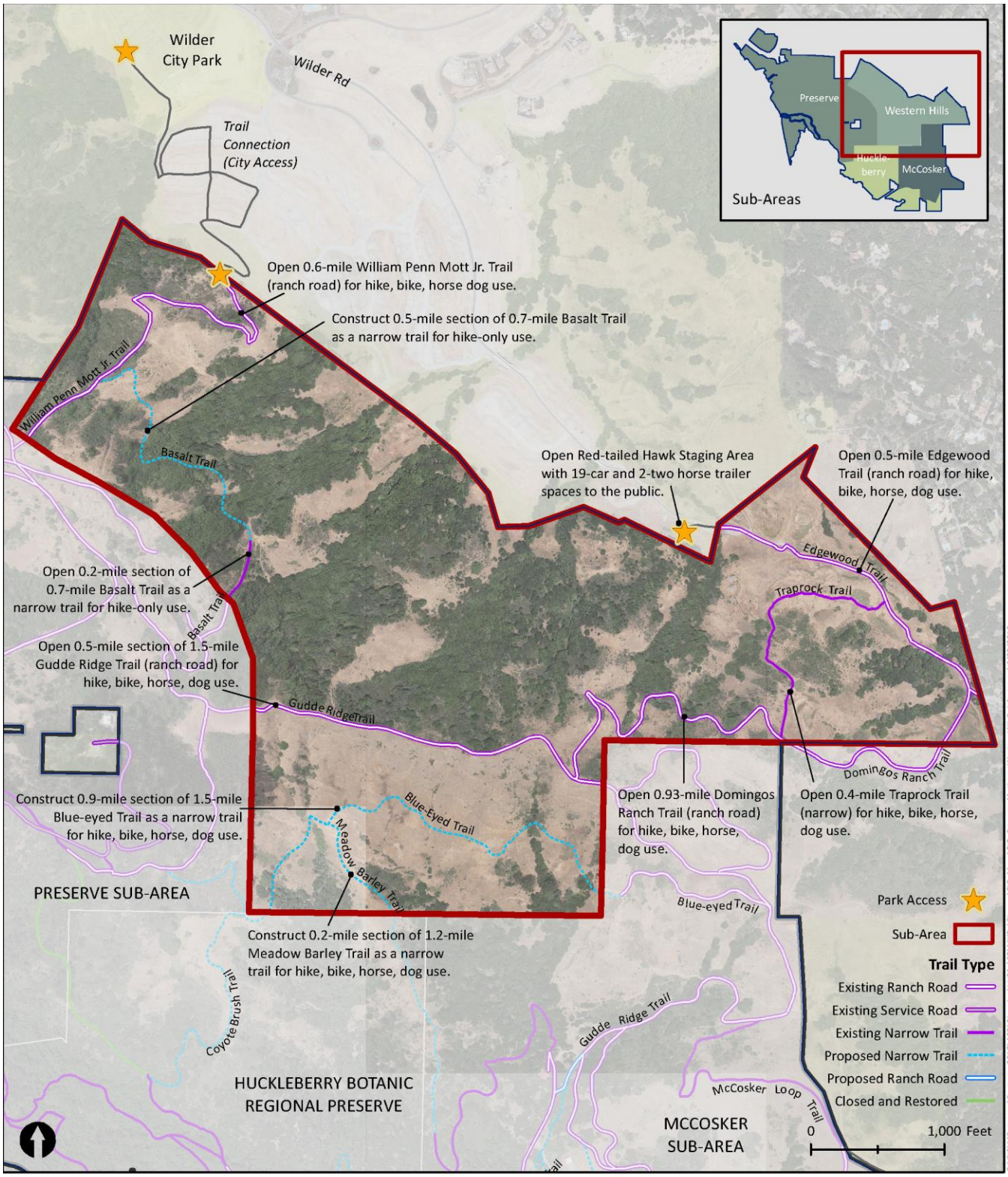

FIGURE 2-6: PROPOSED ACTIONS FOR WESTERN HILLS SUB-AREA

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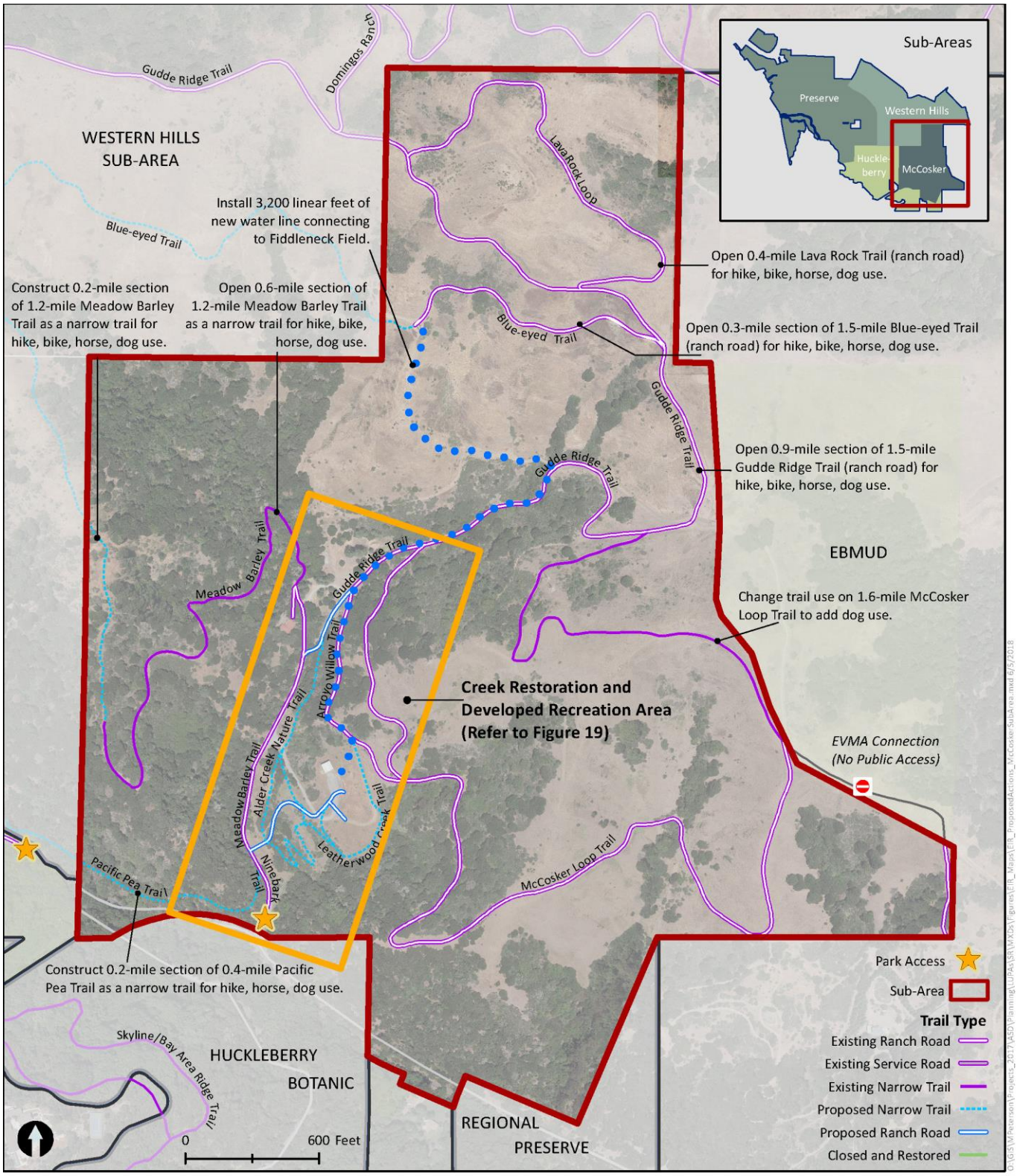

FIGURE 2-7: PROPOSED ACTIONS FOR MCCOSKER SUB-AREA

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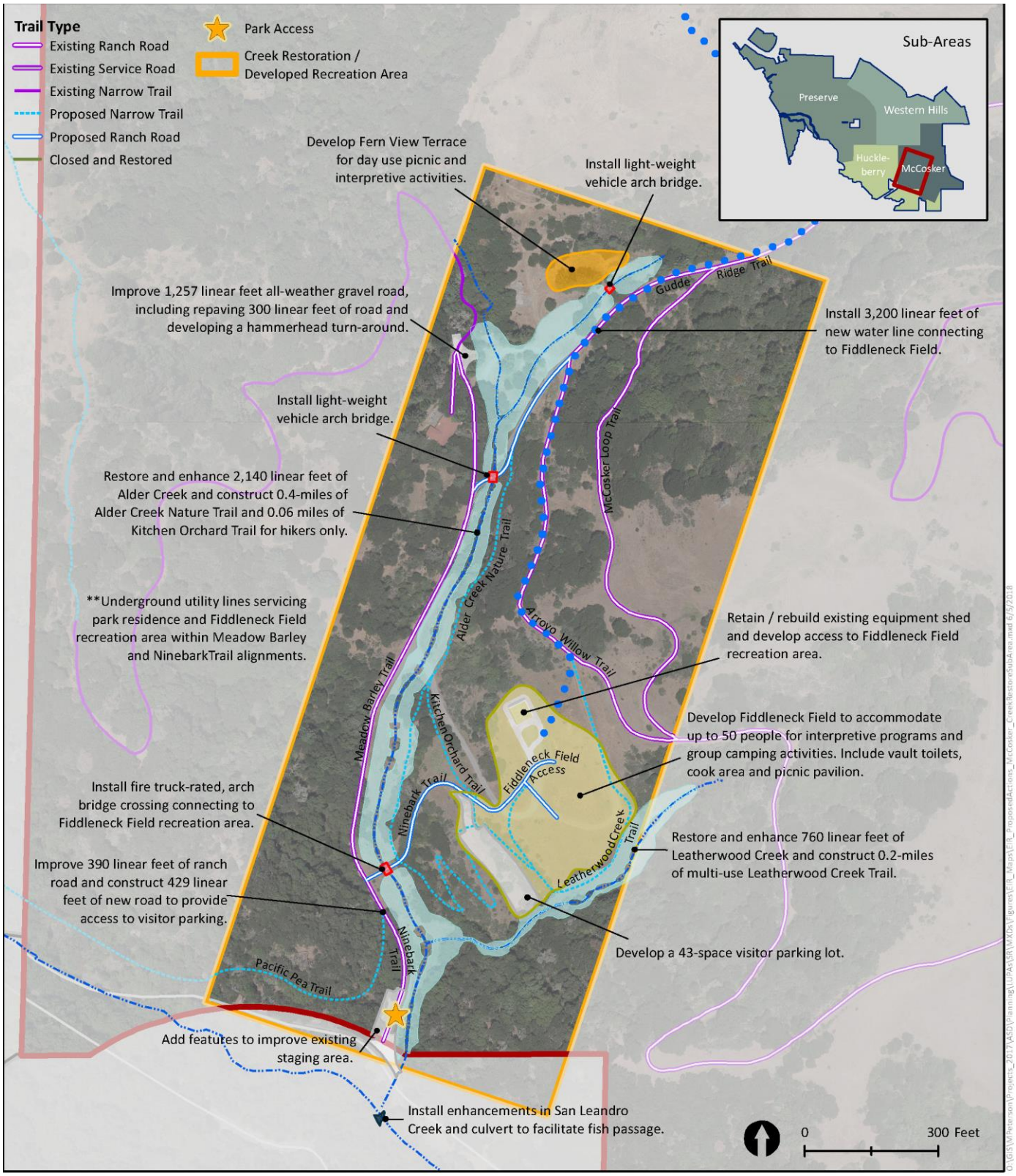

FIGURE 2-8: PROPOSED ACTIONS FOR MCCOSKER SUB-AREA: CREEK RESTORATION AND DEVELOPED RECREATION AREA.

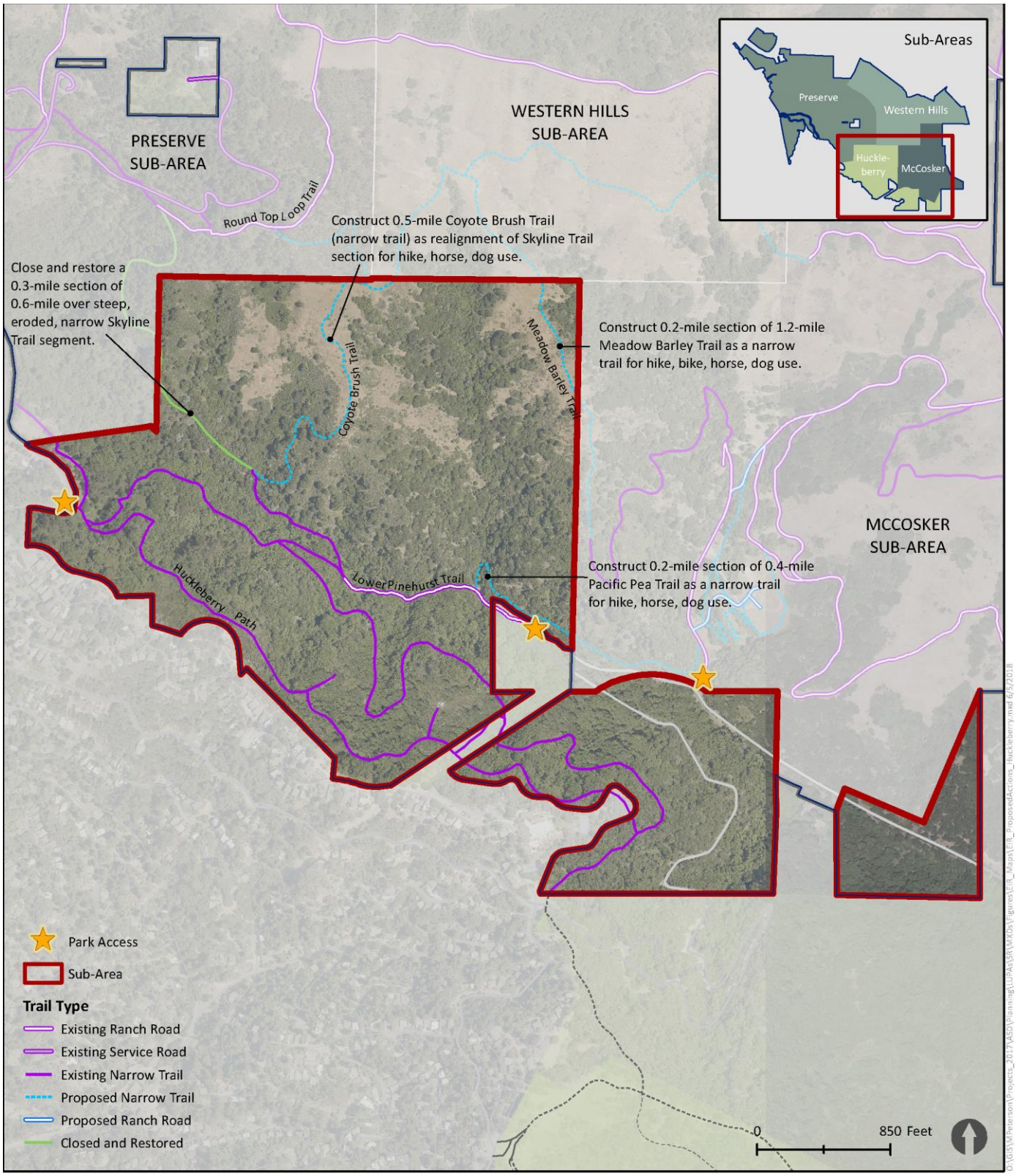

FIGURE 2-9: PROPOSED ACTIONS FOR HUCKLEBERRY BOTANIC REGIONAL PRESERVE

TABLE 2-3
COMPARISON OF PROPOSED RECREATION AND PUBLIC ACCESS ACTIONS WITH EXISTING CONDITIONS

Proposed Action	Existing conditions			Potential New Conditions		
PUBLIC ACCESS						
	Preserve	**Western Hills**	**McCosker**	**Preserve**	**Western Hills**	**McCosker**
Access Points	2 vehicle access pts.- Sibley Main and Old Tunnel	n/a	1 vehicle access pts. - Wilcox (Eastport)	2 vehicle access None added	2 vehicle access pts. 1 District trailhead 1 Neighborhood trailhead	1 vehicle access pts. None added
Parking Spaces	38 Sibley Main 13 Old Tunnel 1- 2-horse trailer - Sibley Main	n/a	10 Wilcox (Eastport)	38 Ex. Main 35 New Main 13 Ex. Tunnel 20 New Tunnel 1- 2-horse trailer - Ex. Main	10 New Wilder City Park 19 New Western Hills 2- new 2-horse trailers - Western Hills	10 Ex Eastport 5 New Eastport 43 New Fiddleneck Field
TOTAL VEHICLE PARKING EX. - 72 / NEW - 134 TOTAL - 196	EX. - 62	n/a	EX. - 10	NEW - 55 TOTAL107	NEW - 31 TOTAL - 31	NEW - 48 TOTAL - 58
Bridges	n/a	n/a	3 - culverted vehicle crossings	n/a	n/a	3 -new vehicle crossings (replacing culverted crossings)
RECREATION FACILITY DEVELOPMENT						
	Preserve	**Western Hills**	**McCosker**	**Preserve**	**Western Hills**	**McCosker**
Camping	1 Camping Site, Capacity 15 Sibley Main	n/a	n/a	1 Ex Camping Site, Capacity 15 Sibley Main None added	n/a	1 New Camping Site, Capacity 50, Fiddleneck Field
Interpretive	1 Pavilion Sibley Main	n/a	n/a	1 Ex Pavilion Sibley Main None added	n/a	1 New Interpretive Program Gathering Area Fiddleneck Field New interpretive panels Alder Creek & Fern View
INFRASTRUCTURE TO SUPPORT RECREATION						
	Preserve	**Western Hills**	**McCosker**	**Preserve**	**Western Hills**	**McCosker**
Water System	n/a	n/a		New - 1,000-gallon water tank Sibley Main to support camping	n/a	1 New 4,000-gallon water tank and 3,200 lf water line McCosker to support recreation activities & fire suppression
Underground Utilities	n/a	n/a	n/a	n/a	n/a	New - 1,100 lf utility lines McCosker

Proposed Action	Existing conditions	Potential New conditions
TRAIL SYSTEM OPEN TO PUBLIC USE – ALL SUB-AREAS		
Ranch Roads	8.3 miles	12.6 miles
Narrow Trails	5.6 miles	9.5 miles
TOTAL	**13.9 miles**	**22.1 miles**
TRAIL USE – ALL SUB-AREAS		
Hike	13.9 miles	22.0 miles
Horse	12.2 miles	20.8 miles
Bike	8.7 miles	18.0 miles
Dogs on Leash	4.2 miles	11.8 miles
Dogs off Leash	8.0 miles	8.4 miles

Old Tunnel Road

Improvements to the Old Tunnel Road site would involve repairing, repaving and restriping the existing site to improve the existing road conditions and increase parking capacity from 13 to approximately 33 vehicles. Other improvements would include: new gates to control access into this site, vehicle turn-arounds, electric recharging units at some of the parking stalls, and installation of a vault toilet replacing the existing portable unit. An access gate near the Old Tunnel Road entry would be secured during park closure hours. Refer to Figure 2-11, Proposed Parking Lot Layout for Old Tunnel Road for the conceptual parking layout.

Western Hills Sub-area

No parking improvements are planned for the Western Hills sub-area beyond the Red-tailed Hawk Staging Area and allocated spaces in Wilder Park incorporated as part of the Wilder residential development (*2004 Second Supplemental EIR for the Montanera Project)*. These two existing access points, which are located outside of the conservation easement, would come into service when the Western Hills sub-area is appended to the Robert Sibley Volcanic Regional Preserve as part of the Project. Prior to opening the Western Hills sub-area to the public, wayfinding signs would be installed at both Wilder Park and the Red-tailed Hawk Staging Area directing visitors to Robert Sibley Volcanic Regional Preserve. Regulatory signs would inform visitors of the rules and courtesies to be observed when visiting District and City lands.

McCosker Sub-area – Eastport Station (formerly Wilcox) Staging Area

The main entrance and gated parking area at Pinehurst Road currently named the Wilcox Staging Area would remain. The staging area would be renamed to more clearly reflect the history of the site to *Eastport Station Staging Area.* A new entry sign with the new name would be installed to reflect this name change. Minimal grading would add up to five parking spaces and direct drainage to a stormwater treatment feature. The existing pass-through maze would be replaced with a safer, more equestrian -friendly, self-closing, pass-through gate. The information board would be updated to reflect the Project actions, including new uses and requirements. Vehicle access for day-use visitors would continue to be controlled by a standard District pipe gate,

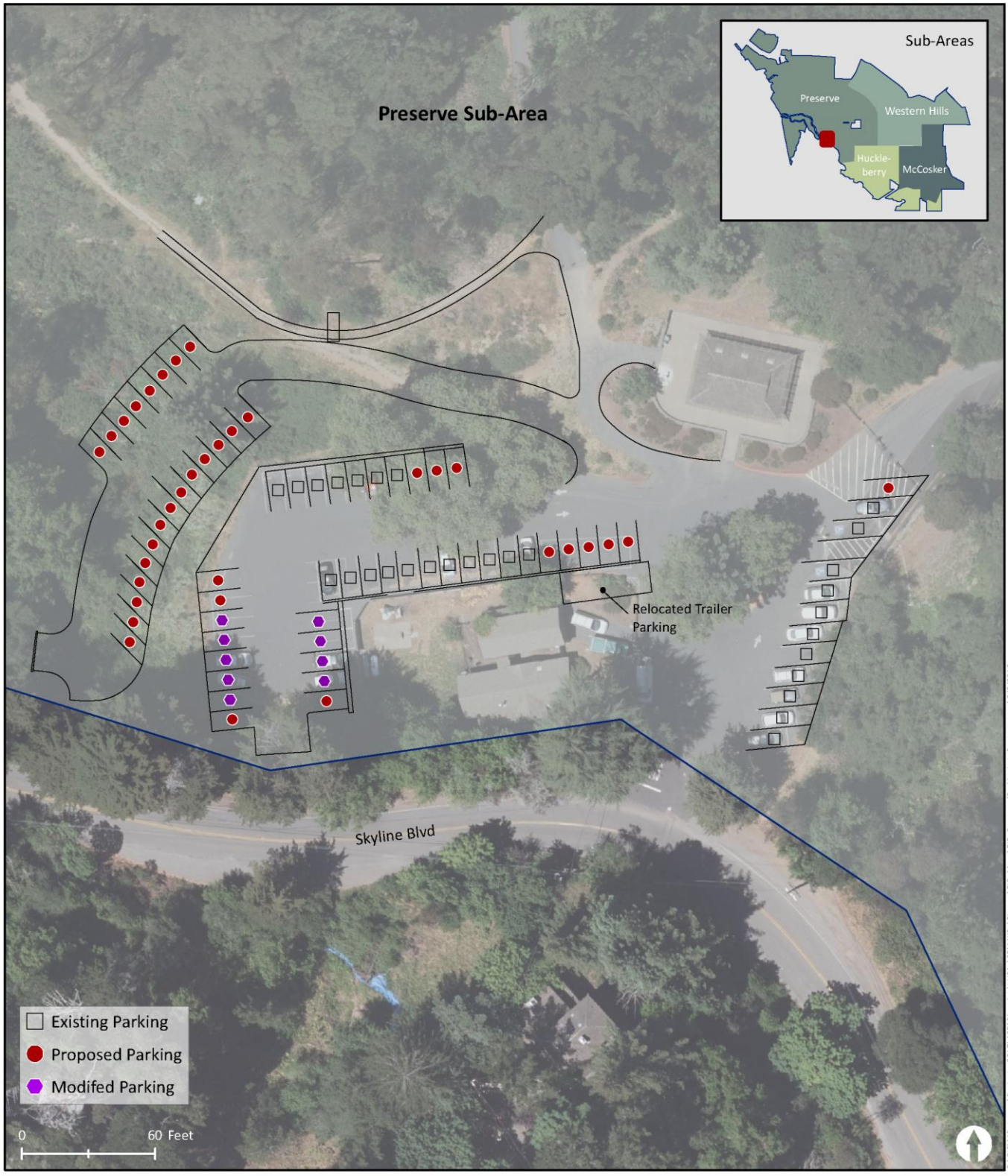

FIGURE 2-10: PROPOSED PARKING LAYOUT, MAIN SIBLEY STAGING AREA. PRESERVE SUB-AREA

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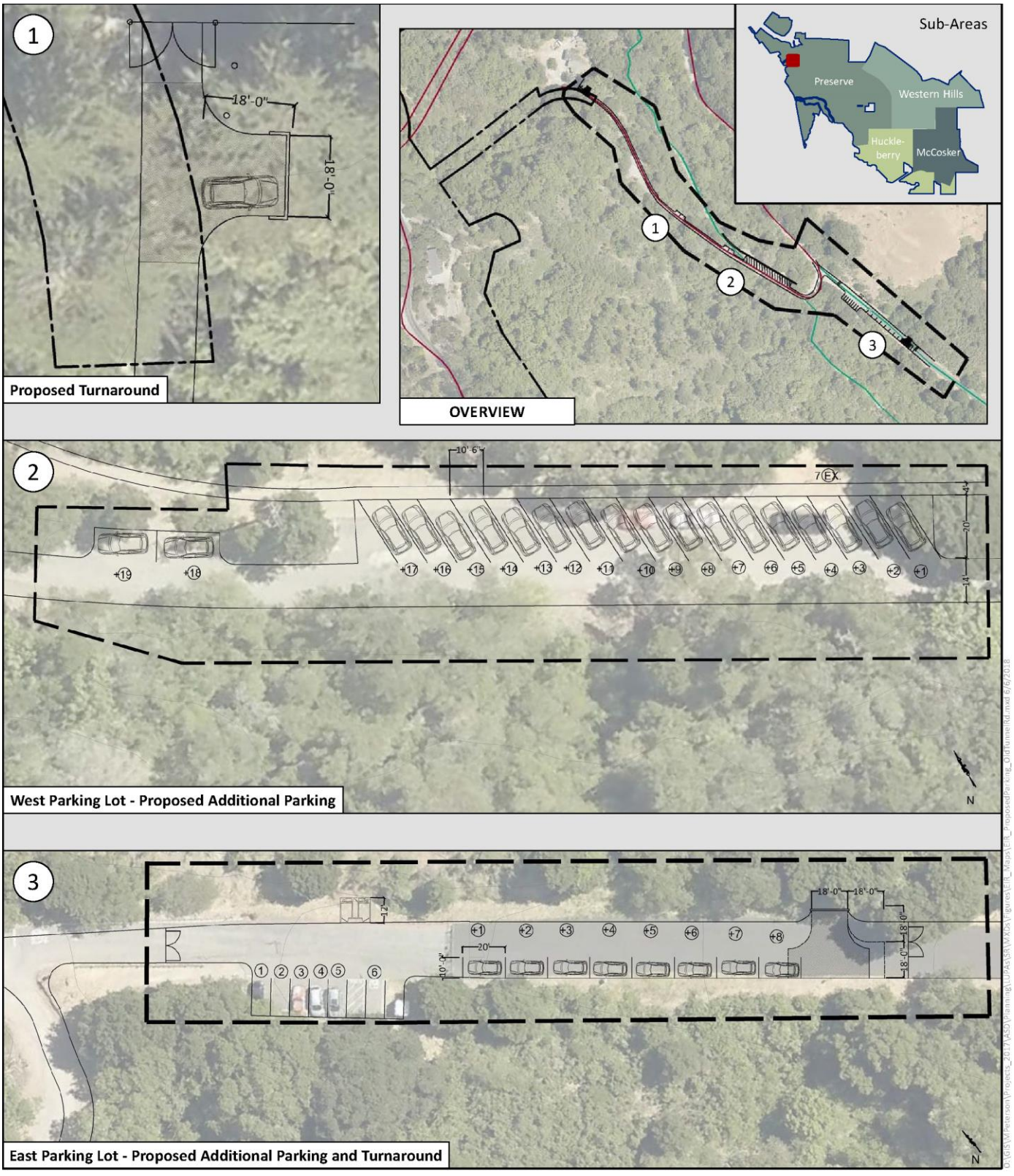


FIGURE 2-11: PROPOSED PARKING LAYOUT, OLD TUNNEL ROAD. PRESERVE SUB-AREA

perimeter fencing, and appropriate signage. The access gate would be secured during park closure hours.

In addition, a new parking area that is proposed to be developed as part of the Fiddleneck Field recreation area would be designed to accommodate day-use, as well as reservation-only parking. Refer *to Section 2.5.3.9, Recreation Facility Development* below for more details.

2.5.3.4 Improvements to Existing Roadways

Infrastructure improvement activities would involve improvements to existing roadways, both paved and natural surface ranch roads. Swales would be added along portions of some of the roadsides and stormwater treatment areas would be included in the final design to treat stormwater runoff.

Preserve Sub-area

Improvements to existing roadways in the Preserve sub-area are associated with Old Tunnel Road Staging Area as described above.

Western Hills Sub-area

No roadway improvements are planned for the Western Hills sub-area beyond wayfinding signs directing visitors to the Project area.

McCosker Sub-area

In the McCosker sub-area, improvements are proposed for two existing roadways, referred to herein as the Ninebark Trail and the Meadow Barley Trail as described below. Grading associated with these improvements would occur in conjunction with the creek restoration work and the installation of the bridges.

Ninebark Trail

The Ninebark Trail would provide a connection between the Eastport Station Staging Area and the Fiddleneck Field parking area to accommodate visitors and maintenance and emergency vehicle access. The Ninebark Trail would be developed as an all-weather, gravel surface access road with a maximum grade of 16 percent, a minimum vertical 15-foot clearance, and a minimum curve radius of 50 feet. This road would be developed as a two-way road and maintained as a 12-foot wide road beyond the public parking area in Fiddleneck Field. The road improvements would consider satisfactory grades, slope stability with AASHTO HS20 (36-ton rating) for fire truck loading and turning radii for emergency vehicles. Standard District pipe gates would be installed to limit public access to recreational trail uses, while accommodating District service vehicles to the roadway section extending beyond the Fiddleneck Field parking area. The entire road would be 950 linear feet consisting of a 660-linear-foot two-lane segment and a 290-linear feet one-lane segment.

Meadow Barley Trail

The Meadow Barley Trail would intersect with the Ninebark Trail at the Ninebark Bridge. The Meadow Barley Trail road section improvements would include: reconstructing an 890-linear

foot segment of 12-foot wide all-weather gravel road, stabilizing and repaving an existing 410-linear-foot roadway section, and developing a hammer-head turn-around near the residence to facilitate emergency and maintenance vehicle circulation. The paved road would match the existing width, which is a minimum of 11 feet wide, have a maximum grade of 18 percent, and a minimum vertical 15-foot clearance. The road improvements would consider satisfactory grades, slope stability with AASHTO HS20 (36-ton rating) for fire truck loading and turning radii for emergency vehicles. This access road would follow the alignment of the existing gravel and paved roads (access to the existing residence). A standard District pipe gate with an adjoining, self-closing pass-through gate would be installed near the Ninebark Bridge to prohibit public vehicle access to the Meadow Barley Trail, while accommodating District vehicles and recreational trail uses.

2.5.3.5 Bridge Installation

Preserve Sub-area

No bridges are planned for the Preserve sub-area.

Western Hills Sub-area

No bridges are planned for the Western Hills sub-area.

McCosker Sub-area

Circulation improvements in the McCosker sub-area would include three crossings of Alder Creek: 1) Ninebark Public Vehicle Bridge 2) Fern View Terrace Maintenance Vehicle Bridge, and 3) Alder Creek Maintenance Vehicle Bridge. The three structures would be designed as arched bridges with natural creek bottoms. Bottomless arch bridges typically transfer overlying earth and vehicle loads to spread footings at the bottom edges of the arch. This curved design would convey the weight along the curve of the arch to the supports on each end. These supports would carry the load of entire bridge down and outward, making entire structure rigid and strong. The three proposed bridges are described below.

Ninebark Vehicle Bridge

A planned, fire truck-rated, public vehicle bridge would connect the Eastport Station Staging Area to Fiddleneck Field Recreation Area. This crossing would have an HS20 load rating (36 ton) (California Vehicle Code) and minimum 15-foot vertical clearance. The bridge would span approximately 16 feet to fully extend over the Alder Creek channel. This bridge would also serve as a trail connection between the Eastport Staging Area and Fiddleneck Field recreation area and as a utility crossing for water and power lines needed for interpretive and overnight camping uses.

Fern View Terrace Bridge

Access to the Fern View Terrace would be provided via a single-lane (12-foot wide) bridge that would accommodate light-weight, service vehicles and public recreational use. The bridge would connect to the Fern View Terrace from Gudde Ridge Trail across the eastern branch of Alder Creek. This bridge would have a minimum 36-ton load capability (HS20) (California Vehicle Code), and minimum 15-foot vertical clearance. The bridge would span approximately 15 feet to

fully extend over the eastern branch of the Alder Creek channel and would offer opportunities for trail users to view the restoration project from above.

Alder Creek Nature Trail Bridge

The Alder Creek Nature Trail Bridge would provide a connection between the Meadow Barley Trail and the Gudde Ridge Trail and the Alder Creek Nature Trail. This bridge would span approximately 15 feet to fully extend over the Alder Creek channel and would offer opportunities for trail users to view the restoration project from above.

Bridge Construction Activities

Project ground-disturbing activities for bridge construction would extend up to 20 feet below ground surface for the deepest component, the pier supports. Arched bridges and their foundations would lie within the creek bed where the potential for aggradation and degradation (scour) would be considered as part of the overall creek crossing design. Temporary dewatering and /or re-routing of stream flows would be taken into consideration during spread footing construction. As the soil conditions at each location are highly variable and contain materials that are erodible and weak, the culvert foundations would consist of either: 1) spread strip footings supported on a uniform bearing pad of at least 18 inches thick or 2) deep foundations such as drilled piers and protective riprap at the foundations to minimize settlement and scour. The bridges would be constructed following parameters appropriate for seismic design using the 2013 California Building Code (CBC) and Project site coordinates of: Latitude = 37.84310; Longitude = -122.18070.

2.5.3.6 Project Area Trail System Expansion

Overview

The Project trail system would incorporate existing trails in Robert Sibley Volcanic Regional Preserve, the trail system set forth in the Western Hills Open Space Long Term Management Plan, and new trails proposed within the three sub-areas with connections through the eastern side of Huckleberry Preserve. This expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities.

Recreation, Environmental and Operation Values

Trail system improvements balance environmental conservation with recreation opportunities and operational needs, considering the values described below.

Recreation Values

Recreation values take into consideration total numbers of constituents likely to be served, not solely small group or single user benefit values and considers additional access points and connectivity to neighboring communities and city and county trail and bikeway systems to disperse use and encourage bike and pedestrian access over vehicle access as visitor use increases.

Environmental Values

Environmental values take into consideration wildlife and plant species impacts (e.g., trampling, disturbance to aquatic habitats, and wildlife breeding and foraging activities) in determining trail alignments and their future use and requires dogs to be on leash throughout the Project area, except where off-leash dog use is already permitted, and adds bike use only where previously permitted in the Western Hills sub-area and where system connectivity will be enhanced.

Operation Values

Operation values take into consideration operations and management requirements, including routine patrol and maintenance activities, service and security requirements for recreation areas, habitat management of open space areas, and emergency ingress and egress.

Trail Types - Standards and Assumptions

The trail system includes two natural surface trail categories; narrow trails (less than six feet wide) and service-road-width trails (greater than eight feet wide). This distinction allows for some variability in the trail width of these two trail types depending on methods of construction (e.g., manual, machine built) and the specific physical conditions (e.g., trees, rock outcropping, slope) of the trail alignment. Refer to *Figure 2-12, Existing and Proposed Trail Types* for location of narrow trails and ranch-road-width trails within the Project area and *Figure 2-13, Typical Trail Cross Section* for an illustrative concept of a typical narrow trail.

Trail Hierarchy

For the trail system to function effectively, it includes convenient access points and system continuity tied to various modes of travel around the perimeter of the Project area. This approach helps to distribute use and provide opportunities for visitors to use the trails from locales convenient to several nearby communities. The trail system offers loops of various lengths allowing for one hour to all day or overnight trips. The system would also provide a hierarchy of experiences including: east and west facing slopes, grasslands that highlight wildflowers, and woodland areas that offer variations in shade - sun and wind - shelter exposure. Park features and destinations that the trail system highlights include:

- Key views and interpretive opportunities
- The highest points on the ridges
- Canyons and water features
- Interesting topography and geologic features
- Destination campsites and picnic/rest area sites that that create a sense of arrival/ place.

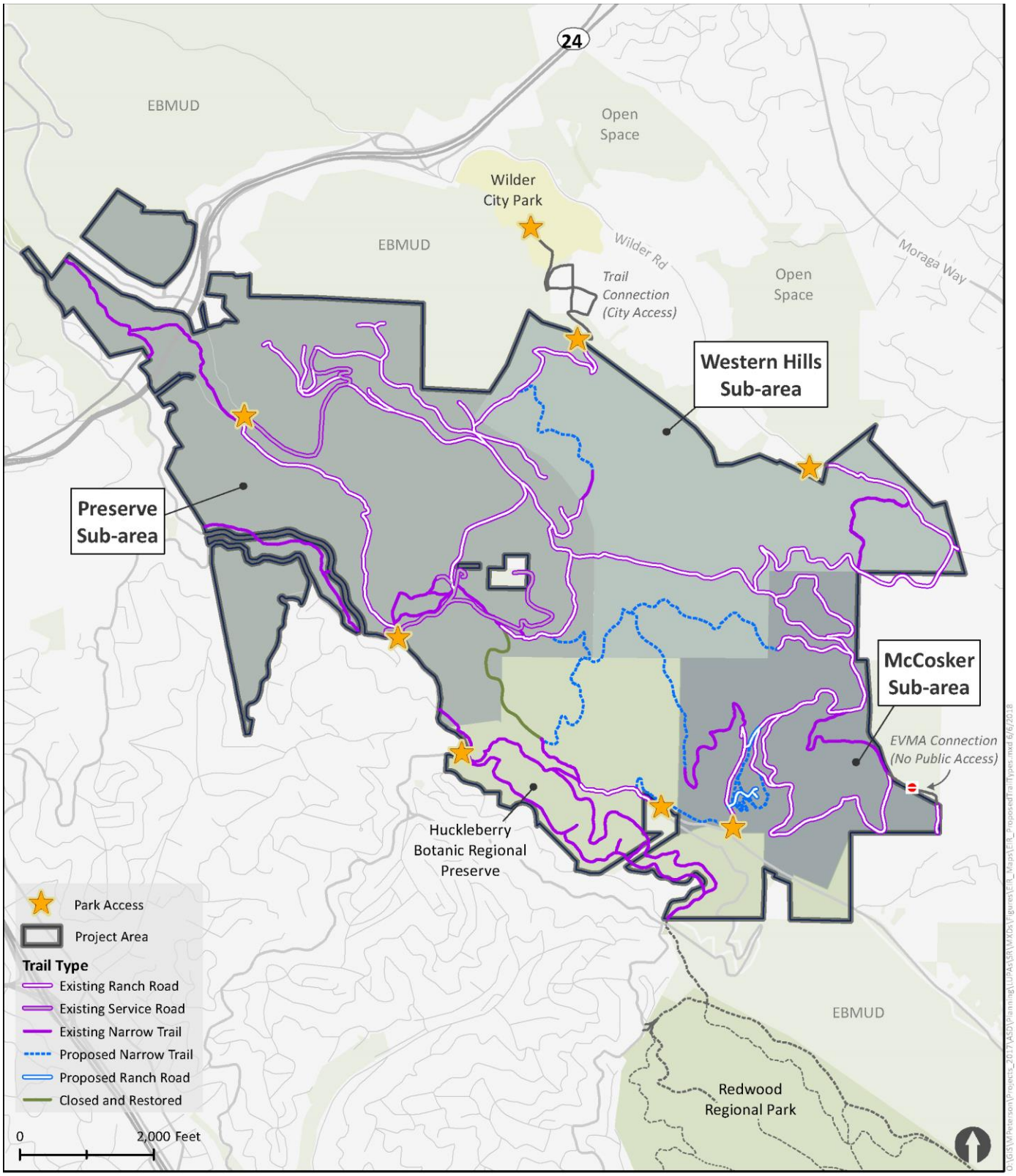


FIGURE 2-12: EXISTING AND PROPOSED TRAIL TYPES IN THE PROJECT AREA

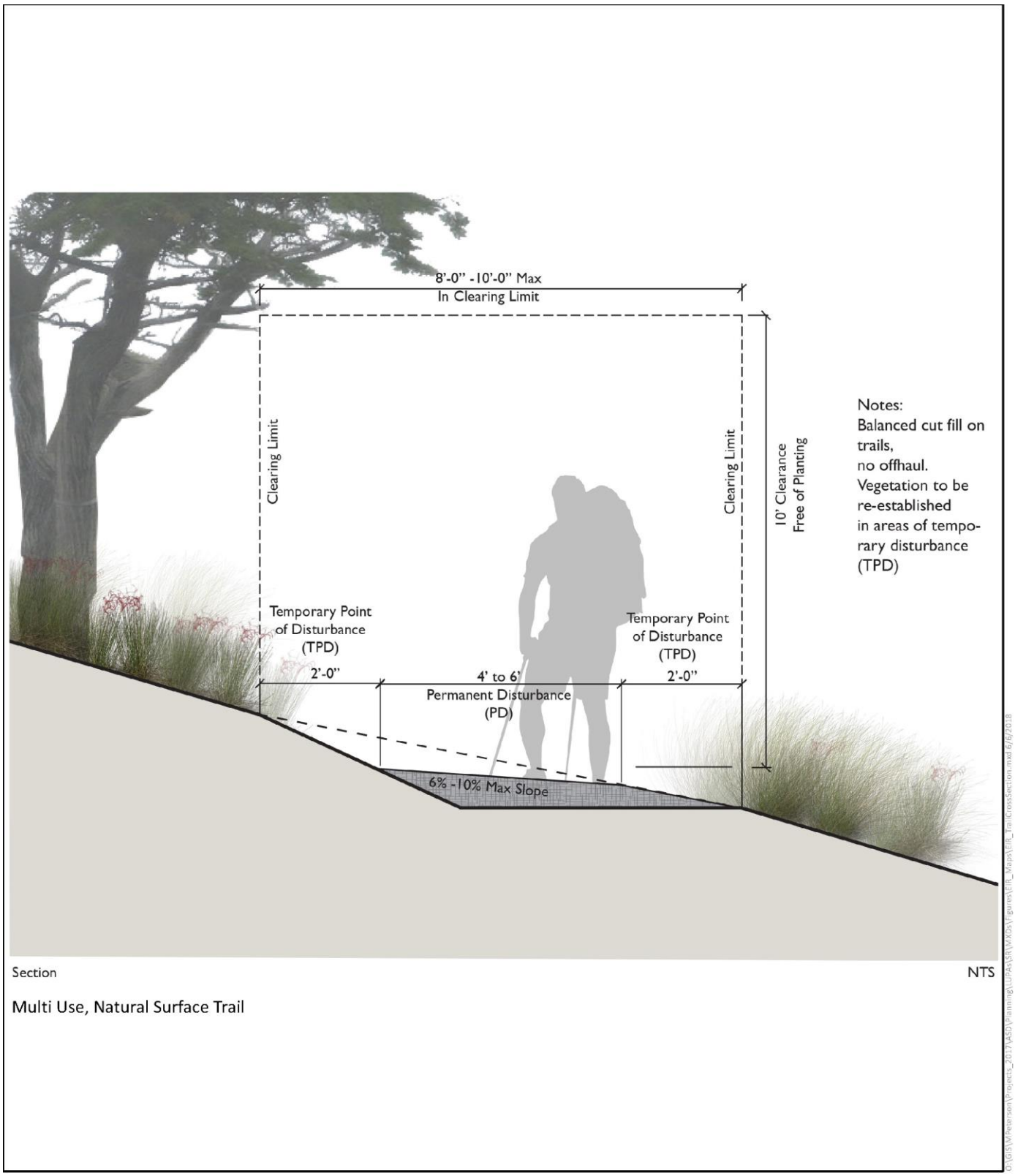


FIGURE 2-13: TYPICAL TRAIL CROSS SECTION

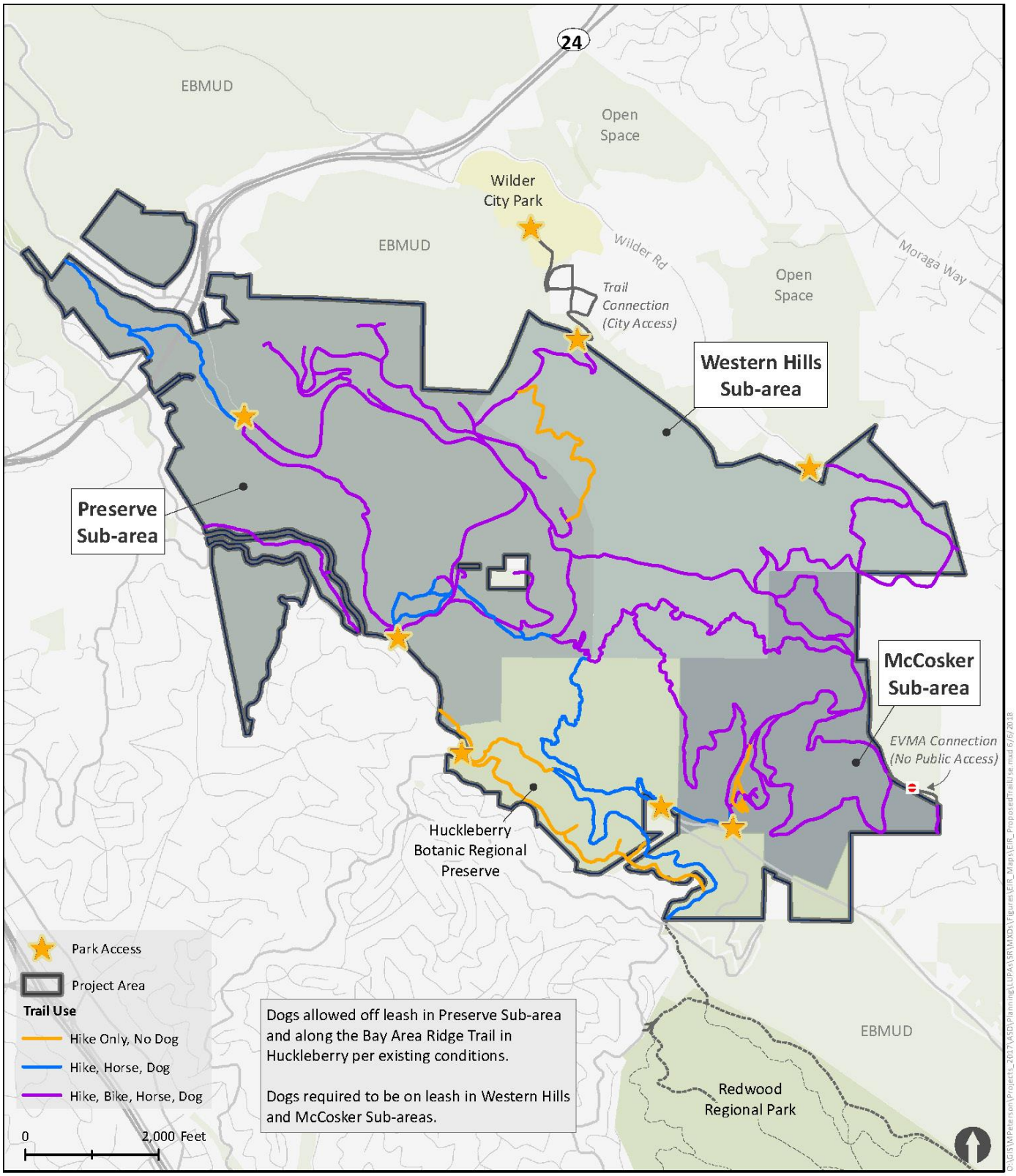


FIGURE 2-14: PROPOSED TRAIL USES IN THE PROJECT AREA

TABLE 2-4A
PRESERVE -TRAILS

Trail Name	Trail Status	Trail Type	Proposed Use	Feet	Miles
Basalt Trail	Existing	Ranch	Hike Only, No Dogs	397	0.08
Blue-eyed Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	1,428	0.27
Grizzly Peak Blvd Trail	Existing	Narrow	Hike, Bike, Horse, Dogs Unleashed	3,325	0.63
Gudde Ridge Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	355	0.07
Huckleberry Connector Trail	Existing	Narrow	Hike Only, No Dogs	367	0.07
Overlook Trail	Existing	Narrow	Hike, Horse, Dogs Unleashed	1,281	0.24
Overlook Trail	Existing	Narrow	Hike, Horse, Dogs Leashed	50	0.01
Pond Connector Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	442	0.08
Pond Spur Trail	Existing	Ranch	Hike, Horse, Dogs Unleashed	744	0.14
Pond Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	1,717	0.33
Quarry Pit Maze Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	2,120	0.4
Quarry Pit Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	536	0.10
Quarry Road	Existing	Paved	Hike, Bike, Horse, Dogs Unleashed	3,919	0.74
Quarry Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	2,395	0.45
Quarry Trail Spur Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	509	0.10
Round Top Connector Trail	Existing	Narrow	Hike, Horse, Dogs Unleashed	138	0.03
Round Top Loop Trail	Existing	Ranch	Hike, Horse, Dogs Unleashed	834	0.16
Round Top Loop Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	5,141	0.97
Round Top Ridge Trail	Existing	Ranch	Hike, Horse, Dogs Unleashed	59	0.01
Round Top Service Road	Existing	Paved	Hike, Bike, Horse, Dogs Unleashed	3,839	0.73
Sibley Entrance	Existing	Paved	Hike, Bike, Horse, Dogs Leashed	637	0.12
Siesta Syncline Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	969	0.18
Skyline Connector Trail	Existing	Narrow	Hike, Horse, Dogs Leashed	635	0.12
Skyline Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	4,588	0.87
Skyline Trail	Existing	Narrow	Hike, Horse, Dogs Unleashed	2,092	0.39
Skyline Trail	Existing	Narrow	Hike, Horse, Dogs Leashed	4,145	0.78
Skyline Trail	Close and Restore	Narrow	No Access	1,704	0.322
To Sibley Backpack Camp (E)	Existing	Paved	Hike, Bike, Horse, Dogs Unleashed	265	0.05
To Sibley Backpack Camp (W)	Existing	Narrow	Hike, Horse, Dogs Leashed	231	0.04
Volcanic Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Unleashed	4,076	0.77
Water Tank Service Road	Existing	Paved	Hike, Bike, Horse, Dogs Unleashed	745	0.14
William Penn Mott Jr. Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	134	0.03
TOTAL MILES EXISTING				**46,685**	**8.84**
TOTAL MILES NEW				**1,429**	**0.27**

TABLE 2-4B
WESTERN HILLS - TRAILS

Trail Name	Trail Status	Trail Type	Proposed Use	Feet	Miles
Basalt Trail	Existing	Ranch	Hike only, No Dogs	489	0.09
Basalt Trail	New	Narrow	Hike only, No Dogs	2,838	0.54
Blue-eyed Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	4,602	0.87
Domingos Ranch Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	4,907	0.93
Edgewood Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	2,510	0.48
Gudde Ridge Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	2,886	0.55
Meadow Barley Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	1,030	0.20
Traprock Trail	Existing	Narrow	Hike, Bike, Horse, Dogs Leashed	2,095	0.40
William Penn Mott Jr. Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	3,171	0.60
TOTAL MILES EXISTING				**16,057**	**3.04**
TOTAL MILES NEW				**8,470**	**1.60**

TABLE 2-4C
MCCOSKER – TRAILS

Trail Name	Trail Status	Trail Type	Proposed Use	Feet	Miles
Alder Creek Nature Trail	New	Narrow	Hike only, No Dogs	1,716	0.3
Arroyo Willow Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	1,076	0.2
Blue-eyed Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	1,361	0.26
Blue-eyed Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	248	0.05
Fiddleneck Field Access	New	Narrow	Hike, Bike, Horse, Dogs Leashed	214	0.04
Fiddleneck Field Access	New	Ranch	Hike, Bike, Horse, Dogs Leashed	345	0.07
Gudde Ridge Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	4,729	0.90
Gudde Ridge Trail	New	Ranch	Hike, Bike, Horse, Dogs Leashed	392	0.07
Kitchen Orchard Trail	New	Narrow	Hike only, No Dogs	306	0.06
Lava Rock Loop	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	2,286	0.43
Leatherwood Creek Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	971	0.18
McCosker Loop Trail	Existing	Narrow	Hike, Bike, Horse, Dogs Leashed	2,587	0.49
McCosker Loop Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	5,543	1.05
Meadow Barley Trail	Existing	Narrow	Hike, Bike, Horse, Dogs Leashed	2,604	0.49
Meadow Barley Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	1,257	0.24
Meadow Barley Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	955	0.18
Ninebark Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed	390	0.07
Ninebark Trail	New	Ranch	Hike, Bike, Horse, Dogs Leashed	429	0.08
Pacific Pea Trail	New	Narrow	Hike, Horse, Dogs Leashed	1,042	0.20
Residence Drive	Existing	Ranch	No Public Access	142	0.03
Service Road (EVMA)	Existing	Ranch	No Public Access	438	0.08
TOTAL MILES EXISTING				**22,413**	**4.21**
TOTAL MILES NEW				**6,570**	**1.22**

TABLE 2-4D
HUCKLEBERRY - TRAILS

Trail Name	Trail Status	Trail Type	Proposed Use	Feet	Miles
Blue-eyed Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	225	0.04
Coyote Brush Trail	New (Realignment)	Narrow	Hike, Horse, Dogs Unleashed	2,366	0.45
Huckleberry Connector Trail	Existing	Narrow	Hike only, No Dogs	548	0.10
Huckleberry Path	Existing	Narrow	Hike only, No Dogs	7,652	1.45
Lower Pinehurst Trail	Existing	Ranch	Hike, Horse, Dogs Leashed	1,371	0.26
Meadow Barley Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed	981	0.19
Pacific Pea Trail	New	Narrow	Hike, Horse, Dogs Leashed	1,023	0.19
Skyline/Bay Area Ridge Trail/Anza Trail	Existing	Narrow	Hike, Horse, Dogs Unleashed	7,026	1.33
Skyline/Bay Area Ridge Trail/Anza Trail	Close & Restore	Narrow	n/a	1,397	0.26
TOTAL MILES EXISTING				**16,598**	**3.14**
TOTAL MILES NEW				**4,594**	**0.87**

2.5.3.7 Proposed Trail Development Actions

The Project would include single use and multi-use trails providing shorter loops and connections to longer, region-wide trails, including the Skyline Trail, and regional trails identified in the District Master Plan. Proposed actions would include approximately: 1) 2.6 miles of minor changes in use - 0.4 miles of added bike use in the Preserve sub-area and 2.2 miles of added dogs-on-leash use within the McCosker sub-area in the existing trail system; 2) opening 5.2 miles of existing narrow and ranch road trails; 3) constructing 3.9 miles of new narrow trails to enhance connectivity between the Preserve, Western Hills and McCosker sub-areas and other District parklands; 4) reconstructing 0.14 miles of ranch road to complete connections in the McCosker sub-area; 5) realigning 0.4 miles of narrow trail and closing and restoring 0.6 miles of over steep trail to improve trail sustainability and move the public away from known populations of pallid manzanita; and 6) constructing a new 0.3-mile hiker-only nature trail. *Table 2-4A, Table 2-4B, Table 2-4C, and Table 2-4D* above provide a summary of the trails including their proposed use and length. Refer to *Figure 2-14, Proposed Trail Uses in the Project Area* for an illustration of trail use recommendations within the Project area.

Overall, the proposed improvements would add approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

To help offset the challenging access to the steep, rugged terrain leading to ridge tops, park usage accommodations would conform to the District policy on use of Other Power-Driven Mobility (OPDMD) - 2011. In addition, trails would be rated according to the Universal Trail Assessment Process (UTAP) and the State Park Accessibility Standards when evaluating trail difficulty and presence of obstacles (e.g., boulders, low overhanging limbs).

Opening Existing Narrow and Ranch Road Trails – All Sub-areas

The Project would incorporate existing trails into the system where these alignments would reduce the need for new trail construction to complete gaps. Incorporating existing alignments into the system would serve to minimize resource habitat disturbance and soil displacement associated with new construction. Additionally, existing ranch road trails would also function as emergency access, access for fuels and habitat management, including grazing activities, and other activities, such as access for ~~the management of the~~ PG&E to maintain their transmission lines. Opening existing ranch road trails to complete gaps in trail continuity are recommended for the following routes.

Western Hills Sub-area

- The *William Penn Mott Jr. Trail*, an existing 0.6-mile ranch road that would connect the Preserve sub-area to Wilder Park through the Western Hills sub-area. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Edgewood Trail*, an existing 0.5-mile ranch road that would provide connections from the Red-tailed Hawk Staging Area and local City of Orinda neighborhoods to the Western Hills sub-area. Allowable trail uses would include for hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Domingos Ranch Trail*, an existing 0.9-mile ranch road that would connect the Edgewood Trail to the Gudde Ridge Trail through the Western Hills sub-area. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Traprock Trail*, an existing 0.4-mile narrow trail that would connect the Edgewood Trail to the Domingos Ranch Trail through the Western Hills sub-area. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

Western Hills and McCosker Sub-areas

- The *Gudde Ridge Trail*, an existing 1.5-mile ranch road that would connect the Preserve sub-area to the McCosker sub-area through the Western Hills sub-area. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

McCosker Sub-area

- The *Lava Rock Loop Trail*, an existing 0.4-mile ranch road that would connect to Gudde Ridge Trail. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Blue-eyed Trail*, a 0.3-mile section of existing ranch road that would connect to new sections of the Blue-eyed Trail. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Meadow Barley Trail*, a 0.4-mile section of existing ranch and narrow trail sections that would connect to new sections of the Meadow Barley Trail to complete a connection between the Preserve sub-area and the McCosker sub-area through Huckleberry Preserve and the

Western Hills sub-area. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Arroyo Willow Trail*, an existing 0.2-mile ranch road that would connect Fiddleneck Field recreation area to the Gudde Ridge Trail. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Ninebark Trail*, a 0.07-mile section of existing ranch road that would connect the Eastport Staging area to the Fiddleneck Field recreation area when connected to new sections of the Ninebark Trail including the new Ninebark Bridge. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

New, Narrow, Natural Surface Recreation Trails throughout the Project Area

Trail development would include approximately 3.9 miles of new, narrow, natural surface recreation trails that would be positioned to minimize impacts on sensitive species. In the Preserve sub-area, 0.3 miles (1,429 linear feet/0.13 acres) of new trails are proposed. Within the Western Hills sub-area 1.6 miles (8,470 linear feet/0.78 acres) of new trails are proposed, 1.2 miles (6,570 linear feet/0.60 acres) of new trails, including the Alder Creek Nature Trail, are proposed in the McCosker Sub-area and 0.9 miles (4,594 linear feet/0.42 acres) of new trails are proposed in Huckleberry Preserve. New narrow trails throughout the Project area would include the following trails.

Preserve, Western Hills and McCosker Sub-areas and Huckleberry Preserve

- *Blue-eyed Trail*, construction of 1.2 miles of narrow trail that would connect to Round Top Loop Trail. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

Western Hills Sub-area

- *Basalt Trail*, construction of 0.5 miles of narrow trail that would connect to Volcanic Trail and William Penn Mott Jr. Trail. Allowable trail uses would include hiking.

Preserve, Western Hills and McCosker Sub-areas

- *Meadow Barley Trail*, construction of 0.6 miles of narrow trail that would connect to Blue-eyed Trail. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, and horseback riding.

McCosker Sub-area and Huckleberry Preserve

- *Pacific Pea Trail*, construction of 0.4 miles of narrow trail that would connect to Bay Area Ridge Trail. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, and horseback riding.

McCosker Sub-area

- *Alder Creek Nature Trail*, construction of 0.3 miles of ADA compliant narrow trail that would parallel Alder Creek. Allowable trail uses would include hiking and nature study.

- *Kitchen Orchard Trail*, construction of 0.06 miles of ADA compliant narrow trail that would connect the Fiddleneck Field to the Alder Nature Creek Trail. Allowable trail uses would include hiking.

- *Leatherwood Creek Trail*, construction of 0.2 miles of ADA compliant narrow trail in the Fiddleneck Field recreation area. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding, horseback riding and nature study.

New, Ranch Road Trails in the McCosker Sub-area

Trail development would include approximately 0.14 miles of new, ranch road trails to complete connections with existing ranch roads trails for the following routes.

- The *Gudde Ridge Trail*, construction of 0.07 miles of ranch road that would connect the Preserve sub-area to the McCosker sub-area through the Western Hills sub-area when connected to existing trail segments. Allowable trail uses would include hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding.

- The *Ninebark Trail,* construction of 0.07 miles of new ranch road, including the new Ninebark Bridge, that would complete a connection between the Eastport Staging Area and the Fiddleneck Field recreation area when connected to existing sections of the Ninebark Trail.

Designating Minor Changes in Uses in the Existing Trail System – Preserve and McCosker Sub-areas

The trail circulation system has been evaluated for suitability for single and multiple use taking into consideration trail use connections and continuity, access to destination sites, site conditions, habitat sensitivity, the District Master Plan, and Ordinance 38. Based on this analysis the trail use changes are recommended for these routes in the Preserve and McCosker sub-areas.

- *Gudde Ridge Trail*, initiate a trail use change to allow bikes on 0.1 miles of an existing, unnamed ranch road to accommodate a bike connection to the Gudde Ridge Trail in the Western Hills Sub-area

- *Round Top Loop Trail*, initiate a trail use change to allow bikes on a 0.3 section of the Round Top Loop Trail, an existing, ranch road to provide a connection to the Blue-eyed Trail as a part of the Skyline Trail

- *McCosker Loop Trail*, initiate a trail use change to allow dogs on leash on this existing, 1.6-mile ranch road, consistent with other trail designations proposed for the McCosker sub-area trails.

Additionally, should opportunities arise in the future to provide a bike connection across EBMUD lands along a 0.7-mile section of Skyline Trail between the Old Tunnel Road Staging Area and Fish Ranch Road to complete a bike use connectivity gap in this regional trail, this option would also be considered as a change in existing use patterns in the overall Preserve trail system.

Trail Realignments – Preserve Sub-area and Huckleberry Preserve

New alignments are recommended for existing, unsustainable routes. These new trail alignments would provide safer, environmentally superior alignments (e.g., less steep and erosive), while enhancing recreation and resource values. Closed trail routes would be decommissioned and the former alignments restored. Trail closures would occur concurrent with new trail construction such that connections between trails and/or to destinations would be retained and disturbances to the land would be minimized. Trail realignments of trails are recommended for the following routes.

- *Coyote Brush Trail*, realign a 0.5-mile section of the existing Bay Area Ridge Trail in Huckleberry Preserve, to be referred to as the Coyote Brush Trail, and close and restore a 0.6-mile section of over steep and eroded trail.

Nature Trail Creation – McCosker Sub-area

As describe above, the trail system would include a 0.3-mile, ADA compliant Alder Creek Nature Trail that would be developed in conjunction with the creek restoration grading activities. The Alder Creek Nature Trail would begin on the east side of Alder Creek near the Ninebark Bridge and generally parallel Alder Creek above the top of the eastern bank to the southern terminus of the Gudde Ridge Trail near the Alder Creek Bridge.

Access to the creek channel for passive recreational activities such as interpretive programs and/or self-guided nature walks would be controlled through design features that would include: bridges, observation areas and fencing.

The Alder Creek Bridge (described above) would offer trail users opportunities to view the restoration project from above.

An observation point that could accommodate small groups along the Alder Creek Nature Trail near one of the still pools would be constructed near the water's edge. The design of the observation point would incorporate a shallow shelf at the stream's edge for safety. This interface with the creek would be located above the low flow channel and would be constructed similar to a rock causeway such that it would be able to withstand flooding and would serve to further stabilize the creek channel.

While the horizontal buffer between the creek and the nature trail will be constrained due to the site conditions, a vertical buffer will be maintained such that most of the trail will be located above the 100-year flood zone of the creek. To further limit human access to Alder Creek, fencing could be installed along the edge of riparian corridor, as needed, to direct pedestrian circulation and protect the riparian habitat corridor.

The Alder Creek Nature Trail would also incorporate interpretive features such as maps and exhibits highlighting the watershed system of Alder Creek where visitors can learn about the biology, geology and hydrology of the Alder Creek watershed.

Aside from controlled access along the restored creek zones, no public access would be provided to the 10,085 linear feet (8,124 linear feet of the western branch and 1,961 linear feet of the eastern branch) of undisturbed, natural channel above the construction conform point of Alder Creek, except for several armored swales on the proposed Blue-eyed Trail near the headwaters.

Refer to *Figure 3.9-1, Alder Creek Watershed* for location of natural and proposed restoration creek channels in the McCosker watershed.

2.5.3.8 Construction Considerations for New Trails

Habitat Considerations

New trails in the Natural Units (upland areas) would traverse a mix of California annual grassland, coyote brush scrub, oak woodland, riparian woodland, tree plantations, and developed/ruderal habitat, and would include a section adjacent to seasonal wetlands. Per *Objective 3 - Trail Development*, potential impact areas for sensitive natural communities and special status plant species within each of these habitat types would be mapped over the annual seasonal cycle and the trail alignments would be laid out to minimize impacts within the zones previously surveyed and cleared for low cultural sensitivity prior to construction.

New narrow trails in these areas would be constructed using a combination of small, mechanized equipment and hand tools. Some brushing of shrubland habitat and disruption of grassland habitat would be involved in the trail construction work. Trails through woodland or riparian habitat would be aligned such that it would not require tree removal or substantial pruning. Disturbance to understory vegetation along the proposed, new, narrow trail alignments would be limited to an approximately eight-foot wide area covering approximately 13,711 linear feet (2.5 acres). Within the area of large groupings of eucalyptus, there are a significant number of downed trees that would be affected. In this location, downed or smaller diameter standing trees in the trail alignment would be cut to accommodate a six-foot wide by ten-foot tall trail corridor.

Vegetation in disturbed areas resulting from the development of the trail system would be reestablished, as appropriate, by: 1) scarifying, seeding, and mulching using certified weed-free products; 2) planting native vegetation, transplanted from the vicinity, or seeded with native species found in the area; or 3) applying strippings accumulated from grading activities over areas temporarily disturbed by construction activities to encourage recovery of the natural habitat. Where the use of strippings is applicable, the strippings resulting from clearing and grubbing the construction site would be stockpiled at the start of construction and covered or controlled using standard Best Management Practices (e.g., silt fence, wattles, fiber rolls – absent of plastic netting and certified as free of noxious weeds) for replacement at the end of construction, thereby minimizing the imprint on adjacent areas.

Retaining Structures

Where a trail is required to cross a hillside slope that is too steep or unstable to hold a trail on its own, retention walls or cribbing may be required as a foundation to build upon. Ideal rocks are rectangular blocks, large enough to withstand displacement by trail users and soil saturation. Rock is the preferred building material for its longevity, but when access is limited timber could be substituted. Construction of retaining structures involves:

- Digging a trench into the outside (downhill) edge of the trail bed that is appropriately sized to hold and support the foundation layer of rock
- Placing rocks parallel to the trail with solid contact with each other to offer the best retention capabilities
- Placing rocks at increments of four to six feet perpendicular to the trail alignment; often called a deadman, this technique helps tie the retaining structure into the hillside

- Providing multiple contact points with the various layers offset from one another, similar to brick and mortar where multiple tiers of rock are needed to offer a stable and wide trail bed construction that will provide maximum strength and stability
- Creating a batter or "lean back" into the hillside enough to support the weight of the associated hillside as tiers are added to the retaining structure
- Backfilling the excavated area with aggregate base material to allow precipitation to easily drain through the structure
- Capping the top of the retaining structure with several inches of native soil that would serve as the trail surface when the wall is located on the downslope side of the trail.

Drainage Crossing Considerations

Where trail construction involves crossing a perennial creek or seasonal or ephemeral drainage, armoring would be installed to reduce impacts to sensitive habitat features, provide channel stability, and minimize channel bed erosion.

To minimize the mobilization of sediment to creeks and other water bodies permanent erosion- and sediment-control measures would be incorporated where trails cross through riparian zones including:

- Armoring the trail surface through the channel
- Providing settling areas along the trail where water could infiltrate and sediment could settle out
- Constructing creek crossings so that they do not greatly alter the cross-sectional shape of the channel
- Sloping the approach to a drainage crossing downward toward the drainage and then climbing upward when traveling away from the drainage bed, so that in the event of a blockage in the channel, the water would not be diverted to flow along the trail.

Natural Rock Crossings

Where armoring is used to stabilize low water crossings, the armoring would consist of natural rock. Cross drain structures (armored fords) would be constructed at natural low spots (swales) and areas that may flow or pond during wet periods unless outsloping and shaping of the trail prism would provide the needed drainage. These features would be constructed to intercept and channel water away from the trail bed and drain and return water to the natural drainage course. The ground surface would be leveled within an approximately four to six-foot wide band equivalent to the maximum width of the narrow, natural surface trail. The length of the crossing from bank to bank and the total area of each crossing would vary based on the width of the channel. Rock would be placed below, and sometimes above, the ford to provide energy dissipation. Leveling would require minor grading. Following grading of the underlying bank and beds, gravel would be placed to prevent downcutting and erosion. A natural channel would then be laid into the crossing bed. These materials would be placed or rearranged by hand or mechanical means to obtain a compact, low permeability mass to simulate a natural streambed.

Where feasible, natural rock crossings would be constructed of locally sourced rock. Installation of natural rock crossings would occur as follows: 1) minor excavation of the trail bed to approximately 12-inches to maintain an out-sloped surface, 2) grading backslopes on the banks, 3) hand-placing approximately 132 pounds (60 kilogram) rocks at the downstream edge to create a rock dam with smaller rocks below the dam for flow dissipation, 4) installing stepping rocks along the upstream edge of the crossing (for trail users to cross on when the creek flows), and 5) filling the spaces between the rock dam and stepping rocks with gravel (or other small rocks less than three inches/75 millimeters in diameter). Refer to *Figure 2-15, Typical Armored Swale and Causeway* for a plan and cross-section view of typical natural rock crossings.

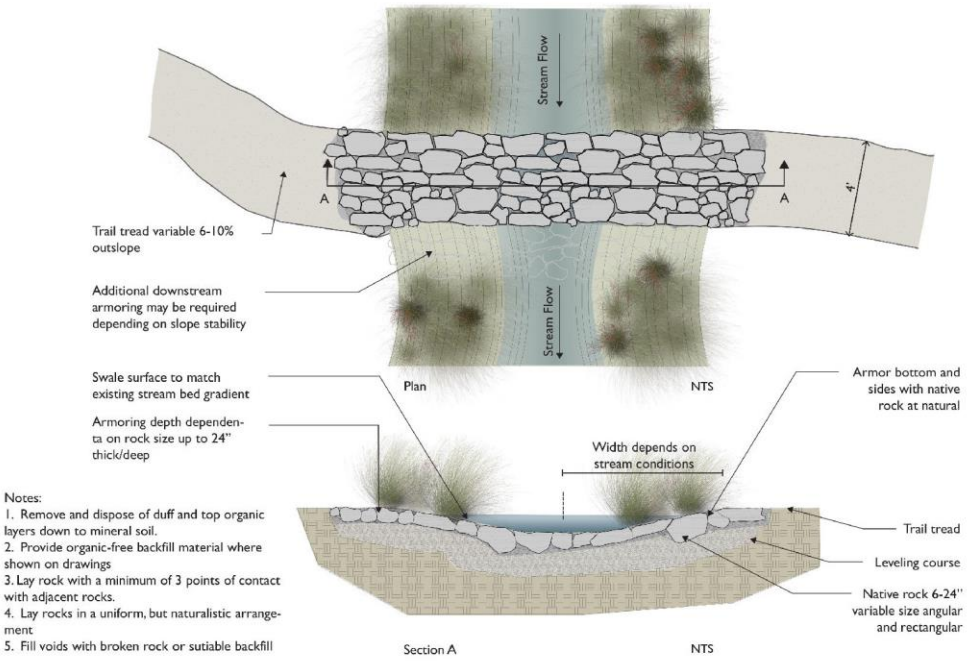
Rock Causeways

Whenever possible, the trail would be located to avoid areas with seasonal or year-long water. Where wet areas are unavoidable, as along the 140-linear-foot section of the Blue-eyed Trail, structural improvements would be incorporated into the trail bed to permanently harden the tread and maintain dry, stable conditions using a rock drain or causeway. A rock causeway is an elevated section of trail contained by rock usually through permanent or seasonally wet areas that allows revegetation to take hold after the area has been rehabilitated. The causeway would be built by first defining the width of the trail tread with parallel rows of rocks or logs. The defining rows would also serve to retain the fill. When in place, the filling process would begin with medium- sized stones that would allow water to pass under the causeway. A fill of small stones, gravel, soil, or a mixture of materials would be used to create the elevated causeway and ensure a smooth walking surface. The trail surface would be rounded approximately two inches above the elevation of the defining rocks to provide better drainage and to allow for settling. Refer to *Figure 2-15, Typical Armored Swale and Causeway* for a plan and cross-section view of a typical causeway.

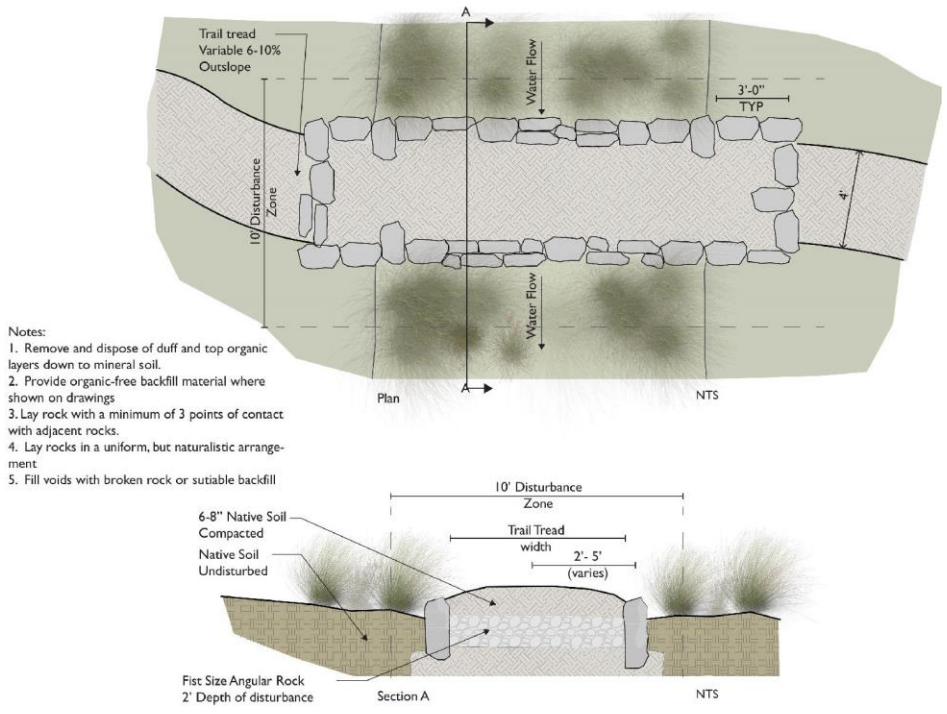
Proposed Discharge of Dredge and/or Fill Material

In general, the trail system alignments have been configured to minimize the number of drainage crossings and passage alongside wetland features to the extent practicable. Permanent impacts to waters of the United States would occur where pavers or natural rock would be installed.

Impacts to drainages are associated with excavation and redistribution of soil and installation of the low water drainage features to protect the trail surface. Other than in localized areas where the small (18 to 120 square feet) low water crossings and the 140-foot long causeway through a sedge meadow would be installed to reduce impacts to sensitive habitat features through the reduction of scour, erosion and sediment transport within drainages and along the perimeter of seep zones, the Project would not alter the nature of stream banks or result in substantial long term adverse impacts to fish or wildlife habitat.



Armored Swale - Seasonal, Intermittent, and Ephemeral



Rock Causeway

FIGURE 2-15: TYPICAL ARMORED SWALE AND CAUSEWAY

Decommissioning and Restoring Trail Alignments

In areas where a trail is being relocated, the former trail would be restored to as natural a condition as possible to eliminate sources of erosion, create a natural appearance, and help eliminate short cutting. Restoration work would include the following: 1) correcting water flowing into and down trail and stabilizing the area by placing of rocks in areas of sheet erosion or using jute netting or other biodegradable covering agents so that the speed of water runoff is impeded and gullying and riling inhibited; 2) eliminating ruts and gullies where erosion has occurred by filling in these channels with local soils and gravel and returning the surface to its original shape and contour by pulling the sidecast that was used as fill for outer edge of trail back into cut; 3) scarifying compacted soils to allow new vegetation to establish; 4) reestablishing vegetation through spreading native seeds as well as transplanting of local flora into the old trail bed; 5) removing an existing culvert and an existing pedestrian bridge; and 6) blocking the former alignment from continued use by, depending on the terrain, placing rock, brush, and/or fallen timber. Temporary fencing may also be installed to prevent use where use of a former alignment prevails.

Check Dams

In some situations, gullies and ruts in existing trails, including sections of the trail alignment that is proposed to be abandoned and restored, may be so severe and deep that filling them with native soils is impractical. Furthermore, these sites may be located where local borrow of fill material is unavailable and hauling distances prohibit the option of using imported materials. In these situations, check dams would be installed to halt further erosion and allow backfilling to occur through the trapping of sediments. Where required, check dams would be installed by placing rocks, logs or boards within the channel perpendicular to the flow. The spacing of these rock, log or board dams would generally follow these guidelines: place materials no more than 25 feet apart on slopes of up to 20 degrees, no more than 15 feet apart on slopes of 20 to 40 degrees, and no more than 10 feet apart on slopes exceeding 30 degrees. Once installed, check dams would be monitored to ensure they are functioning as intended. Once filled, check dams would be left in place and allowed to become part of the slope's natural contour. In some cases, revegetation of the filled channel would occur to further stabilize the site.

Trail Signage

An expanded signage program is important to clarify name and use changes to the existing trail system and to highlight new routes. Trail system signage would include: wayfinding, interpretive and regulatory signs to encourage responsible trail use, and identify regional trail routes. Wayfinding signs placed at trail intersections/connections would aid in keeping trail visitors on the trails and away from sensitive resources, while regulatory signs at trailheads would inform visitors of allowable trail uses. Signage would also provide trail users with information regarding property rights to minimize public/private use conflicts and trespassing. Where the parkland boundaries abut private lands, notices would be posted stating "Private Property - No Trespassing," In areas where a trail is being relocated, the former trail area under restoration would be posted "Not a Trail, Habitat Restoration Taking Place." Trail information would also incorporate interpretive features, such as maps and exhibits.

In addition to trail signs, information would be disseminated through: The District website; park brochures distributed at access points in the Project area; District events; and through outreach with community groups, including homeowners' associations and schools.

2.5.3.9 Recreation Facility Development

The recommendations for public use of Robert Sibley Volcanic Regional Preserve focus on "lower intensity" recreational uses and facilities limited to access improvements and trails as described above, along with rustic camping, interpretive programs and exhibits, and infrastructure improvements to support these recreation amenities described in this sub-section.

Preserve Sub-area

No recreation facility improvements are planned for the Preserve sub-area.

Western Hills Sub-area

No recreation facility improvements are planned for the Western Hills sub-area.

McCosker Sub-area

Recreation facility development for this area would occur in two main areas: the 2.8-acre Fiddleneck Field, and 0.3-acre Fern View Terrace and would include: a combined group camp/interpretive destination site, restrooms, interpretive and picnic facilities, parking and operations facilities. These areas and facility types would meet the criteria of a Recreation/ Staging Unit.

Fiddleneck Field Facility Improvements

Recreation Use Areas

Fiddleneck Field would accommodate interpretive/recreation programs and camping activities. This multi-tiered recreation area would include recreation areas and parking to support destination and individual day use activities. Camping and group interpretive program uses would be by reservation only enabling the District to manage use levels within capacities set for this recreation site and make adjustments if needed over time to maintain resource values and desired visitor experiential expectations. Reservations would be administered by District park staff. Maximum capacity would be 50 visitors.

A multi-purpose, informal meadow would be designed to accommodate rustic group camping sites and interpretive programs for small to medium size groups, open play, and other group and non-group activities.

A group gathering area would include a shade structure that could accommodate six to eight picnic tables for eating and for environmental education. The shade structure would be designed to fit with the natural character of the Preserve. Amenities would include a large group barbecue, preparation table, and campfire. The campfire area would be contained within a concrete area encompassing approximately 700 square feet and be designed to minimize fire hazard danger. Materials used for the shelter and ancillary amenities would consider ease of maintenance and site aesthetics.

Universal Access

To encourage inclusive access to this outdoor environment, including use by the disabled, young children, and older adults, the Fiddleneck Field recreation area would provide Americans with Disabilities Act (ADA)-compliant facilities including, parking, toilet, picnic, and campsite amenities. ADA compliant trails would provide connections between developed areas in Fiddleneck Field and the Alder Creek Nature Trail.

Safety

A communication line would be installed for reporting for emergencies for visitor safety. During disaster emergencies, the area could be used as a staging area for fire crews and other emergency support groups.

Landscape Character

Existing vegetation in this previously disturbed area is generally comprised of ornamental species, non-native grasses and ruderal species. The development of this site for recreational uses would add riparian and oak woodlands, including tree plantings, as well as informal meadows. Landscaping and a grade differential would serve to separate the camping area from the group gathering area and focus views outward toward natural features in the surrounding environment. Plantings would emphasize the use of trees that would augment existing habitat located at the perimeter of these sites, as well as providing screening, shade, and aesthetic value for park visitors.

Parking

A new visitor parking lot would be constructed as part of the grading activities for Fiddleneck Field. It would accommodate approximately 43 spaces, including two ADA spaces, to serve day-use visitors and the reservation-only recreation area. Other features may include hitching posts and a watering trough to accommodate through-travel equestrian use, (no equestrian parking would be included at this site), secured bicycle storage facilities to facilitate bike use, and provisions to accommodate electric vehicles. These measures would promote smart mobility and reduce regional Vehicle Miles Traveled (VMT) when combined with connections to regional bike routes and trails as described in *Section 2.3.4 - Existing Trail System* and illustrated in *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites*.

Operations Support Facilities

The existing equipment storage structure located on at the north end of the proposed Fiddleneck Field recreation area would be retained or rebuilt at the same site to accommodate large equipment, tools and work area related to the operations and maintenance, as well as provide a place for storing volunteer tools and naturalist program supplies.

Development Area

Construction of the Fiddleneck Field would involve approximately 2.8 acres of grading and fill placement that would come from the creek restoration area, to define the combined group camp/interpretive destination site.

Fern View Terrace Facility Improvements

Recreation Use Area

The Fern View Terrace would be an informal site for passive day use activities only. Individual picnic tables would be installed on graded pads for individual visitor use and for use during interpretive programs. Existing concrete walls remaining from the construction and quarrying business that formerly operated in this sub-area would be retained and incorporated into the design of the Fern View Terrace.

Interpretive Exhibits

Interpretive exhibits (e.g., interpretive panels and/or information panels) would be developed and installed within and/or near the entry to the Fern View Terrace to support interpretive programs and/or self-guided activities. These exhibits would provide opportunities for visitors to learn about the history of area and to understand the use of historical features. Exhibits would include, but not be limited to, features associated with a rock crushing operation that was active from 1958-1971.

Landscape Character

Existing vegetation in this previously disturbed area is generally comprised of a variety of ornamental trees, non-native grasses and ruderal species. The development of this picnic site would retain the ornamental trees that serve to define the prior uses of this space.

Development Area

Construction of the Fern View Terrace picnic and interpretive exhibit area would require clearing and grubbing of approximately 0.3 acres to define the picnic pads and access routes, while generally retaining the existing terraces within this site.

Fiddleneck Field Construction Activities

As part of the overall grading for the Project improvements for this sub-area, construction of Fiddleneck Field recreation area would require approximately 2.8 acres of grading in areas where the vegetation is generally composed of remnant, declining ornamental trees from a former nursery operation, non-native grasses and ruderal species, and a small (0.02 acre) wetland created through previous grading and filling activities by a previous owner.

Prior to initiating development of the recreation area, six underground storage tanks, including four 20,000-gallon tanks and two 10,000-gallon tanks that were used to contain diesel fuel remaining from the prior owner's construction business would be removed. While the tanks, the vent and product piping lines have been cleaned to Contra Costa County Environmental Health Division (CCEHD) standards (Engeo, 2001) prior to the land being transferred to the District, the soil would be retested and remediated as required to ready the site for public recreation activities. Once excavated from Fiddleneck Field, the tanks would be removed from the site and deposited at an approved off-site disposal facility.

Prior to initiating fill placement, the site would be cleared and grubbed of surface and subsurface deleterious matter including vegetation, aggregate road-base material, concrete and abandoned utilities. These materials would be removed from the site or stockpiled for reuse if approved by

the District in consultation with the geotechnical engineer. Depressions resulting from the removal of underground obstructions (including tree stumps and root balls) that extend below the proposed finished grades would be cleared and the depressions backfilled with suitable compacted material. Stripped material would be disposed of at an approved, off-site disposal facility, unless otherwise noted. Immediately prior to fill placement, exposed subgrade soils would be scarified to a depth of six inches or the full depth of any existing shrinkage cracks.

The scarified subgrade soils would then be moisture conditioned to slightly above optimum water content and compacted to the level specified above based on the ASTM D-1557 test method (latest version). A certified geotechnical engineer would observe and test, as appropriate, during subgrade preparation to check that surfaces to receive fill are properly prepared and verify that specified compaction and moisture conditioning requirements are achieved. Fill would be spread in lifts not exceeding eight inches in uncompacted thickness on surfaces that are approximately level, moisture conditioned, as appropriate, and compacted by mechanical means to the required levels of compaction per ASTM D-1557 Test Methods and summarized in *Appendix E, Geotechnical Investigation Report McCosker Stream Restoration and Recreational Infrastructure Project Robert Sibley Volcanic Regional Preserve, Contra Costa County, California*. If the fill soils are too wet at the time of construction, they may be dried by aeration or by mixing with drier materials. If the fill soils are too dry, water would be added. Fill placement areas would be "set back" from the tops of existing soil slopes due to concerns related to on-site undocumented fill.

In general, no fill would be placed outside the zone defined by an imaginary line extending up at a 3:1 (horizontal to vertical) inclination from the base of the adjacent slope, as shown in *Figure 2-16, McCosker Sub-Area Creek Restoration and Recreation Development Area - Concept Site Plan, Figure 2-17a McCosker Sub-Area Creek Restoration and Recreation Development Area Cross-section A-A* and *Figure 2-17b McCosker Sub-Area Creek Restoration and Recreation Development Area - Cross-sections B-B and C-C*. The creation of the meadow areas created from the fill material would result in no net increase in impermeable area. The proposed recreation facility development would result in a net increase in impermeable area from the vault toilets (1,350 square feet), campfire ring (700 square feet), ADA parking area (600 square feet), concrete pad for the 4,000-gallon water tank (100 square feet), totally approximately 2,750 square feet of impermeable area.

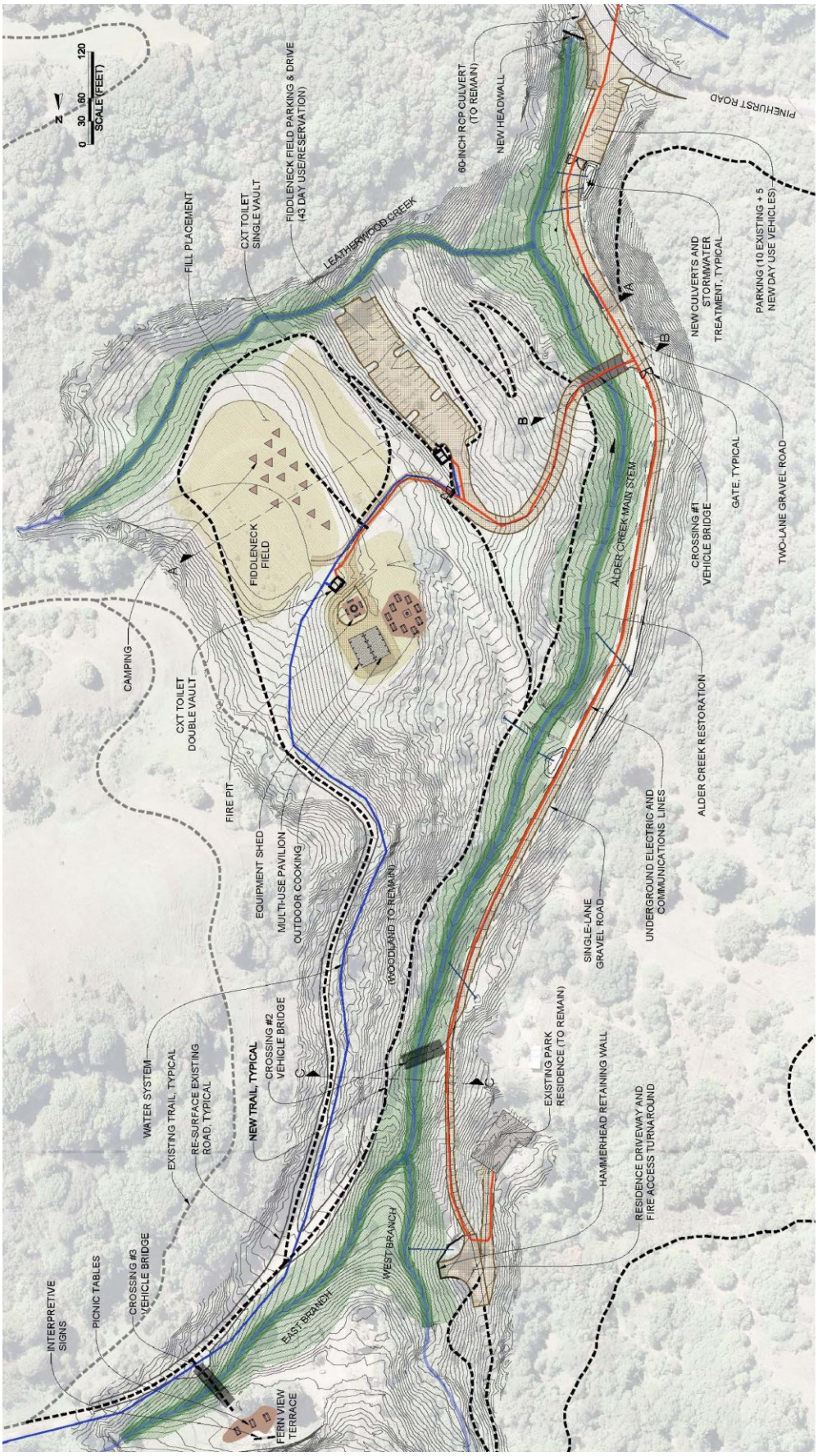


FIGURE 2-16: CREEK RESTORATION AND RECREATION DEVELOPMENT AREA - CONCEPT PLAN

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

East Bay Regional Park District

FIGURE 2-17A: MCCOSKER SUB-AREA CREEK RESTORATION AND RECREATION DEVELOPMENT AREA - SECTION A-A

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

East Bay Regional Park District

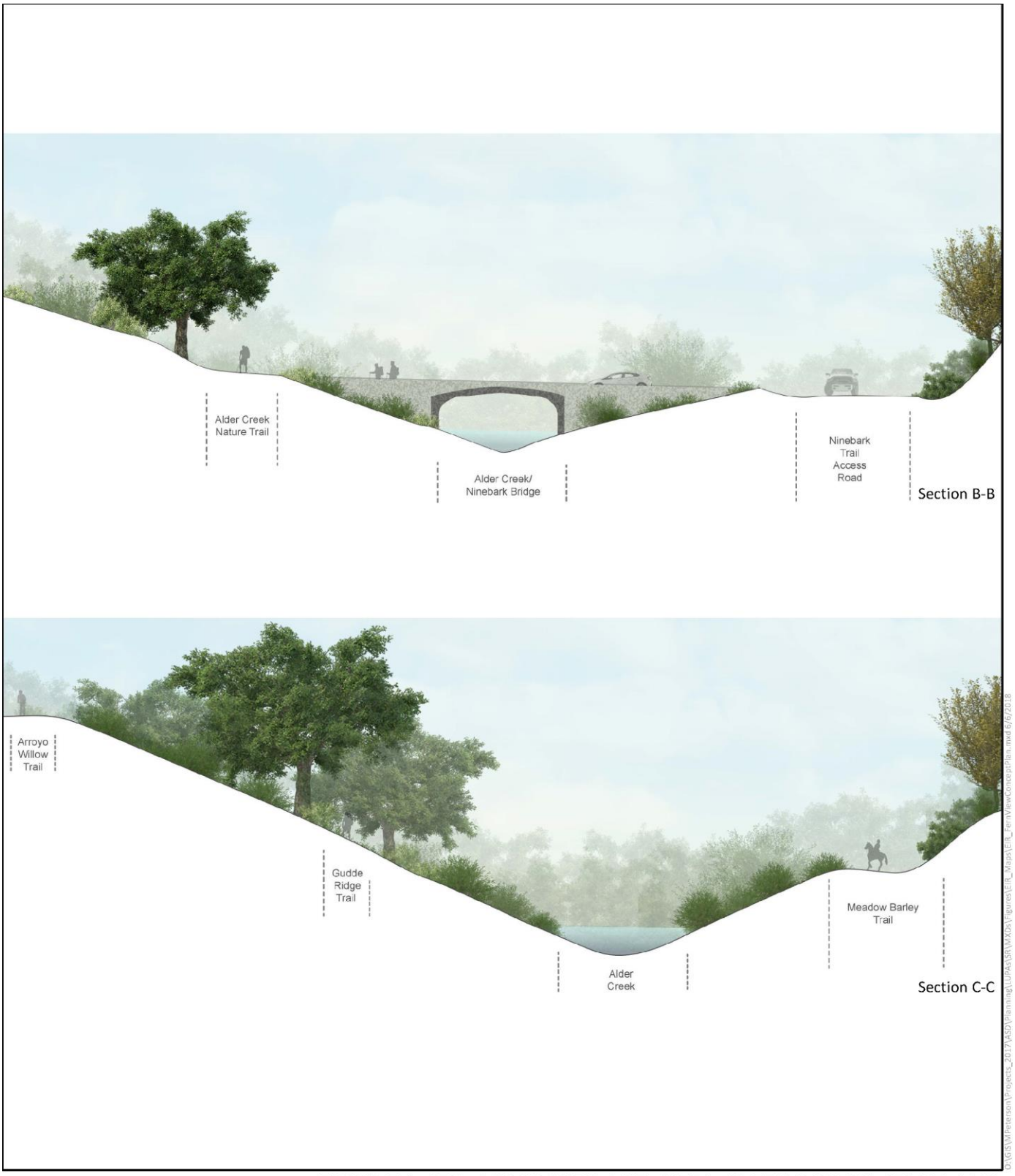


FIGURE 2-17B: MCCOSKER SUB-AREA CREEK RESTORATION AND RECREATION DEVELOPMENT AREA - SECTION B-B and C-C

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

2.5.3.10 Infrastructure Improvements

Preserve Sub-area

Water Service

Project activities in the Preserve sub-area would include installation of a 1,000-gallon water tank at the existing backpack camp to meet the periodic and limited water usage needs for drinking, cooking, dishwashing, and personal grooming activities with the intent of improving the recreation camping experience.

Septic Systems and Vault Toilet

A unisex vault toilet would be incorporated into Old Tunnel Road improvements. It would be sited to accommodate ADA access and service by the District Sanitation and Recycling Department. Waste would be pumped from a manhole located on the exterior of the building by District staff using District equipment on a regular schedule.

Western Hills Sub-area

No utility infrastructure improvements are planned for the Western Hills sub-area beyond those associated with the Red-tailed Hawk Staging Area. Utilities at this staging area will be connected to existing utility infrastructure along Wilder Road.

McCosker Sub-area

Utility infrastructure improvements in the McCosker sub-area supporting individual day use and reservation-only group activities would include: 1) development of a potable water supply to service the developed recreation area; 2) connections to existing electrical and communications services to meet recreation and maintenance needs; 3) improvements to manage sewage and trash; 4) installation of fencing and gates to control site access; and 5) installation of vault toilet restrooms.

Water Supply

Water Service

Currently, water from a spring in the northern portion of the sub-area is routed to a 4,500-gallon polypropylene storage tank located near the spring. This tank supplies water to the residence via a piped connection to a tank and treatment system located adjacent to the residence. In August 2016 the overflow from this tank was approximated at 3,500 gallons per day.

The new potable water system for the recreational development at Fiddleneck field would be installed concurrently with the recreational infrastructure and would require the installation of an independent distribution pipe to Fiddleneck Field that would be approximately 3,200 linear feet long. The pipe trench would be approximately 18 inches wide and would be dug to a depth of up to three feet.

The distribution pipe would connect to a 4,000-gallon storage tank and treatment system located near or above Fiddleneck Field. This tank would augment water sources for fire suppression to provide an adequate level of fire and visitor safety protection commensurate with the increasing recreation development and wildland-urban interface requiring protection.

The potable water system is designed to meet the requirements of the Contra Costa County Ordinance cod 414-4.4 for small water systems. The system would supply water to up to 50 overnight visitors with a maximum demand of 55 gallons/person/day. The sanitary facilities are comprised of sealed vault toilets and there would be no bathing facilities, so actual water demand is expected to be well below the design capacity. *Table 2-5, Design Criteria for Water System* below lists the design criteria for the system.

TABLE 2-5
DESIGN CRITERIA FOR WATER SYSTEM

Design Criteria	Value
Maximum Daily Demand	2,750 gal/day
Peak Hour Demand	2.9 gal/min
Average Daily Demand	1,800 gal/day
Average Residence Time	1.5 days

The grey water source would be sink wash water from cooking and personal grooming activities. Greywater would be directed to an unlined gravel bed for infiltration, which may be planted with wetland plants.

The existing pumphouse structure located near the Pinehurst Road would be removed. The 10,000-gallon, spring-fed tank would be retained and used as a source of irrigation water. The tank would be secured for safety and to prevent vandalism.

Irrigation

An automatic temporary underground irrigation system would provide water to establish plants in the restoration areas during the dry season. Neither the developed recreation areas nor the trail work areas in the upland areas throughout the Project area would be irrigated. Planting and seeding to re-establish disturbed areas resulting from development of Fiddleneck Field, Fern View Terrace and the trail improvements would occur in the fall prior to the winter rain season when normal rainfall would provide the necessary water for plant establishment.

Electrical and Communications Services

Electrical and communications services would be developed to meet recreation and maintenance needs. These utilities would be connected to the existing, on-site utility infrastructure. This would involve undergrounding approximately 1,100 linear feet of existing overhead power and communication lines that run north and south extending from the Pinehurst Road boundary to the park security/staff residence and Fiddleneck Field. Existing overhead electrical lines and poles would be removed. Most of the overhead lines and poles would be removed by hand and then pulled down with a winch. Poles and lines located in or adjacent to already disturbed areas may be removed with equipment. Burying the utility lines would serve to remedy the undesirable aesthetics of the poles, erosion of the pole bases, and conflicts with the proposed creek restoration and recreation site development activities. Prior to initiating excavation work, Underground Service Alert (USA) would be contacted for verification of the location of any underground utility lines in the work area. All active subsurface utilities in the general vicinity of the site

would be marked to protect construction workers and the utilities that are to remain in and surrounding the site during on site excavation and construction activities. Utility-related project components would require ground disturbance to no deeper than ten feet.

Septic Systems, Vault Toilets and Trash

Septic System

The park residence is connected to an on-site septic system installed prior to 1969. This system was updated and the leech field tested in 2012 and found to be in proper working order. This system will remain in place. None of the new improvements will be tied into this system.

Vault Toilets

Precast, unisex vault toilets would be incorporated into the design of Fiddleneck Field. They would be sited to accommodate ADA requirements for access and service by the District Sanitation and Recycling Department. Waste would be pumped from a manhole located on the exterior of the building by District staff using District equipment on a regular schedule.

Standard features include ABS lined concrete vaults, board and batter upper and lap siding, lower textured walls, cedar shake roof. The pre-manufactured building would be off-loaded and set up at site. The roof height of these structures is approximately 12 feet with a vent height extending approximately 15 feet from the base of the foundation.

Onsite placement of the precast concrete vault toilet building would consist of burying a sealed 14 foot-4-inch by 11 foot-11-inch vault to a 5-foot depth, with a pre-fabricated building structure over it. Excavation for each vault toilet would require approximately 32 cubic yards of soil removal. The vault foundation would include a four-inch sand leveling course over four inches of compacted aggregate base. The impermeable area, including the 272-foot restroom and access pad surrounding each restroom facility would be approximately 675 square feet.

Delivery to the site would require a minimum clearance of 14 feet- 6 inches in height for a truck carrying the toilet and a crane and its increased turning radius. The existing access from the Town of Moraga along Pinehurst Road would accommodate these requirements.

System Regulatory Compliance

Since July 1969 there has been a moratorium on septic tank installs in the Canyon community for the area generally bounded on the north by the boundaries of the Moraga Redwood heights subdivision, on the west by Sacramento Northern Right of Way, on the east by the western boundary of the property owned by McCosker in 1969 when the moratorium was established. The Project area is immediately west of the moratorium boundary. Any future installations of vault toilets would not be required to comply with septic system requirements, as vault toilets are contained systems pumped by District staff on a routine basis, but installation of these contained systems would need to comply with regulations for vaults toilets, which require a 100-foot set-back from the high-water mark on the embankment of any creek.

Trash Disposal

A trash disposal area would be provided to store animal-proof cans promoting responsible waste management at the Eastport Station Staging Area, Fiddleneck Field recreation area, and the Fern View Terrace in accordance with the District's sustainability policy.

Fencing and Gates

Several types of fencing would be used to meet the Project objectives. A low fence would be installed along Alder Creek, where appropriate, to direct pedestrian circulation and protect the riparian habitat corridor. Five-strand barb wire would be used at the perimeter of grazed areas to direct grazing activities and limit livestock from entering the developed recreation areas. Standard District metal pipe gates with self-closing, pass-through gates that could accommodate hikers, cyclists, and equestrians would be used at locations where fenced areas cross trails.

2.5.3.11 Western Hills Sub-area Property Conveyance

In accordance with District Resolution No: 2006-1-14, District and OG Property Owner LLC 2008 First Amendment to Donation Agreement by and between the East Bay Regional Park District and Property Owner, OG LLC, the 2004 Second Supplemental EIR for the Montanera Project, and City of Orinda Resolution 13-05, the following actions are anticipated for the Western Hills sub-area: 1) conveyance in fee of a 389-acre conservation easement with multi-use trails; and 2) management of an approximately one-half acre easement containing the Red-tailed Hawk Staging Area. In addition, park visitors will have access to ten parking spaces within Wilder City Park to access the Western Hills sub-area trails.

Through these pre-determined actions, the District would assume responsibility for management of the conservation easement, including, as authorized by the Resource Agency permits: pond and riparian mitigation sites, the multi-use recreational trails; emergency vehicle and maintenance access (EVMA) roads; and livestock infrastructure including, water facilities, fencing and gates necessary to implement the requirements of the Long Term Management Plan (LTMP).

Conservation Easement Conditions

Resource Agency permits require the area contained within the conservation easement to be: 1) preserved in perpetuity; 2) dedicated to the District; 3) overseen by a separate Conservation Easement Holder, the Wildlife Heritage Foundation, a public non-profit California corporation ("WHF"); and 4) funded through a resource management endowment provided by the Wilder residential developer, OGLLC.

Conservation Easement Benefits

Habitat benefits resulting from the addition of the Western Hills sub-area to Robert Sibley Volcanic Regional Preserve would include: seep wetlands, perennial, intermittent and ephemeral tributaries to Brookside Creek, including adjacent riparian habitat, and a mix of coyote scrub, oak woodland and non-native grassland habitat. The conservation easement also retains suitable Alameda whipsnake habitat in Recovery Unit 2, representing the Oakland-Las Trampas population. This protected open space retains the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands and retains the integrity of the network of protected lands in the East Bay Hills.

2.6 Project Construction

Table 2-6 Construction Activities for Proposed Actions summarizes the Project recommendations by sub-area, identifies factors involved in completing construction and provides an estimated duration of construction for each activity.

2.6.1 Construction Schedule, Workforce, Equipment

2.6.1.1 Construction Timing

Preserve Staging Area, Water Supply and Road Improvements

Construction of these Project elements may occur concurrent with the McCosker Creek Restoration and Recreation improvements or may be phased over time. Timing would be dependent on obtaining permits, funding and staff availability. Construction activities would occur over a three to five-month summer period extending to October 31st. Construction would not occur during the winter, but would pick up again the following summer. Hours of work would generally be between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. Access to the construction sites would be from either the Skyline Boulevard or via Old Tunnel Road depending on the location of the site improvements.

McCosker Sub-area Creek Restoration and Public Access and Recreation Improvements

Construction of the creek restoration and public access and recreation facility project elements is anticipated to occur over two -three work seasons between 2019 and 2021. Trail construction of Alder Creek Nature Trail, Kitchen Orchard Terrace Trail, and Leatherwood Creek Trail would occur concurrent with the McCosker sub-area creek restoration and recreation improvements. Construction activities would occur over a three to five-month summer period extending to October 31st. Construction would not occur during the winter, but would pick up again the following summer. Hours of work would generally be between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. Access to the construction sites would be from Pinehurst Road via Canyon Road in the Town of Moraga. Use of heavy equipment during the construction period would be scheduled in coordination with Contra Costa County, the Community of Canyon and the Town of Moraga to minimize impacts to adjacent traffic intensive uses, such as Canyon Elementary School. Following completion of the creek restoration, public access and recreation construction activities, this area would remain closed for about one year (one full growing season) to allow the vegetation to become established.

TABLE 2-6
CONSTRUCTION ACTIVITIES FOR PROPOSED ACTIONS

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
RESTORATION AND ENHANCEMENT				
McCosker Sub-area Alder Creek	• Excavation • Remove 2,460 LF existing culverts and drainage structures • Construct in-stream and near-stream enhancements. • Demolish existing structures within the creek alignment • Relocate utilities • Clear and grub creek and fill areas • Backfill depressions • Remove non-native plant material • Remove trees • Deposit fill material and grade Fiddleneck Field	Construction Area: 3.3 acres Final Footprint: 3.3 acres	Depth: 5-24 feet Excavation: 28,900 cy Fill: 2,200 cy Spoils: 26,000 cy Imported fill: 500 cy	total duration in 40 weeks
McCosker Sub-area Leatherwood Creek Restoration	• Excavation • Remove 260 LF existing culverts and drainage structures • Abandon 470 LF existing culvert in place • Construct in-stream and near-stream enhancements • Demolish existing structures within the creek alignment • Clear and grub creek and fill areas • Backfill depressions • Remove non-native plant material • Remove trees • Deposit fill material and grade Fiddleneck Field	Construction Area: 0.7 acres Final Footprint: 0.7 acres	Depth: 5-10 feet Excavation: 1,400 cy Fill: 2,800 cy Spoils: 0 cy Imported fill: 200 cy	12 total duration in weeks
RIPARIAN HABITAT RESTORATION				
McCosker Sub-area Alder Creek	• Plant wetland and riparian vegetation • Plant trees	Construction Area: 2.8 acres Final Footprint: 2.8 acres	No excavation or fill will take place for vegetation or tree planting	4 total duration in weeks
McCosker Sub-area Leatherwood Creek	• Plant wetland and riparian vegetation • Plant trees	Construction Area: 0.6 acres Final Footprint: 0.6 acres	No excavation or fill will take place for vegetation or tree planting	1 week
McCosker Sub-area Alder and Leatherwood Creek Riparian Zones	• Monitor creek riparian zones to ensure establishment	No construction will be required during monitoring.	No excavation or fill will be required during monitoring.	One full growing season
IMPROVEMENTS TO EXISTING STAGING AREAS				
McCosker Sub-area Eastport Station (formerly Wilcox) Staging Area	• Expand existing parking capacity from 10 spaces to approximately 15 spaces • Install new entry sign • Replace pass-through maze with self-closing pass-through gate • Relocate existing portable toilet with permanent vault toilet at Upper parking lot • Update information board	Construction Area: 0.1 acres Final Footprint: 0.1 acres	Minor grading	1 total duration in weeks

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
	• Install wayfinding signage at a distance that affords approaching vehicles time to slow or stop safely			
Preserve Sub-area Sibley Main Staging Area	• Expand existing parking capacity from 38 spaces to approximately 73 spaces • Grade site • Remove trees • Pave expanded area in existing lot and install compacted gravel in new lower lot and drive – add bike parking – add electric recharging stations as demand dictates • Install wayfinding signage at a distance that affords approaching vehicles time to slow or stop safely	Construction Area: 0.92 acres Final Footprint: 0.92acres	Depth: 1 foot Balanced cut/fill	n/a
Preserve Sub-area Old Tunnel Road	• Repair, repave and restripe approximately 1,100 feet linear feet of an existing 20-30-foot road and stripe and relocate existing gate at Quarry road to expand parking from 13 to approximately 33 spaces and add hammerhead turn-around – add bike parking – add electric recharging stations as demand dictates – replace portable toilet with vault toilet	Construction Area: 0.27 acres Final Footprint: 0.27 acres	Depth: 1 foot Balanced cut/fill	n/a
IMPROVEMENTS TO EXISTING ROADWAYS				
McCosker Sub-area Ranch entry road (Ninebark Trail 390lf), Park residence road (Meadow Barley Trail 1,257lf), Gudde Ridge Trail (392lf) New vehicle access road (Ninebark Trail 429lf) to Fiddlehead Field	Ranch Entry Road (Ninebark Trail) improvements • Grade road • Install pipe gate with self-closing pass-through gate Park residence road (Meadow Barley Trail) • Stabilize and repave road • Develop hammerhead turn-around • Install pipe gate with self-closing pass-through gate Ninebark Trail access road to Fiddleneck Field • Construct new roadway • Install pipe gates with self-closing pass-through gate	Construction Area: 1.0 acres Final Footprint: 1.0 acres	Depth: 1 feet Excavation: 0 cy Fill: 430 cy Spoils: 0 cy Imported fill: 430 cy	n/a
BRIDGE INSTALLATION				
McCosker Sub-area Ninebark Vehicle Bridge to Fiddleneck Field Recreation Area, Fern View Terrace Bridge, Alder Creek Pedestrian Bridge	• Excavation • Dewatering/rerouting stream flows • Install spread strip footings or deep foundations such as drilled piers and riprap	Construction Area: 0.1 acres Final Footprint: 0.1 acres	Depth: 2-12 feet Excavation: 350 cy Fill: 90 cy Spoils: 0 cy Imported fill: 40 cy	n/a
TRAIL SYSTEM EXPANSION				
Preserve Sub-area Gudde Ridge Trail Round Top Loop Trail to Blue-eyed Trail	• Trail Use change (355-linear feet, 5,141-linear feet)– No construction activity required	Construction Area: n/a Final Footprint: 1.5 acres	No excavation or fill will be required	n/a

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
Preserve Sub-area Blue-eyed Trail	• Balanced excavation/fill • Construct 1 new section of a 4-ft wide trail (1,429-linear feet) with a mix of soils, using hand tools and small mechanized equipment • Install trail signage	Construction Area: 0.26 acres Final Footprint: 0.13 acres	Depth: 1-2 feet Excavation: 635 cy Fill: 635 cy Spoils: 0 cy Imported fill: 0 cy Balance cut/fill typ.	
Preserve Sub-area Skyline Trail	• Trail realignment • Close and restore one section of a 4-foot wide trail (1,704-linear feet), scarify and install check dams, erosion fabric and vegetation as needed in existing trail area using hand tools and small mechanized equipment and reseed trail area with native seed appropriate to the site	Construction Area: 0.31 acres Final Footprint: 0.16 acres	Depth: 1-2 feet Excavation: 757 cy Fill: 757 cy Spoils: 0 cy Imported fill: 0 cy Balance cut/fill typ.	
Western Hills Sub-area Basalt Trail Domingos Ranch Trail Edgewood Trail Gudde Ridge Trail Traprock Trail William Penn Mott Jr. Trail	• Open existing ranch road and narrow trails (489-linear feet, 4,907-linear feet, 2,510-linear feet, 2,886-linear feet, 3171-linear feet) • Install trail signage	Construction Area: n/a Final Footprint: 4 acres	No excavation or fill will be required	n/a
Western Hills Sub-area Basalt Trail, Blue-eyed Trail, Meadow Barley Trail	• Balanced excavation/fill • Construct three new sections of a 4-ft wide trail (2,838 linear feet, 4,602 linear feet, 1,029 linear feet) with a mix of soils, using hand tools and small mechanized equipment • Install trail signage	Construction Area: 1.56 acres Final Footprint: 0.78 acres	Depth: 1-2 feet Excavation: 3,764 cy Fill: 3,764 cy Spoils: 0 cy Imported fill: 0 cy Balance cut/fill typ.	
McCosker Sub-area Blue-eyed Trail, Meadow Barley Trail, Pacific Pea Trail	• Balanced excavation/fill • Construct five new sections of a 4-ft wide trail (248 linear feet, 955 linear feet, 1,042 linear feet) with a mix of soils, using hand tools and small mechanized equipment • Install trail signage	Construction Area: 0.4 acres Final Footprint: 0.2 acres	Depth: 1-2 feet Excavation: 600 cy Fill: 600 cy Spoils: 0 cy Imported fill: 0 cy Balance cut/fill typ.	n/a
McCosker Sub-area Alder Creek Nature Trail, Kitchen Orchard Trail, Leatherwood Creek Trail	• Construct 4-ft wide trails in conjunction with the creek restoration and terrace grading activities (1,925-linear feet, 295-linear feet, 1,006 linear feet)	Construction Area: 0.59 acres Final Footprint: 0.29 acres	Excavation and fill to be part of creek restoration and terrace grading activities	
McCosker Sub-area Ninebark Trail	• Construct 429-linear feet of road in conjunction with the Fiddleneck Field grading activities	Construction Area: 0.20 acres Final Footprint: 0.20 acres	Excavation and fill to be part of creek restoration and terrace grading activities	

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
Huckleberry Botanic Regional Preserve Skyline Trail (close) Coyote Brush Trail (realignment)	Trail realignment • Construct one new section of a 4-ft wide trail (2,366-linear feet); with a mix of soils, using hand tools and small mechanized equipment • Close and restore one section of a 4-foot wide trail (1,397-linear feet), scarify and install check dams, erosion fabric and vegetation as needed in existing trail area using hand tools and small mechanized equipment and reseed trail area with native seed appropriate to the site	Construction Area:0.44 acres Final Footprint: 0.22 acres	Depth: 1-2 feet Excavation: 1,052 cy Fill: 1,051 cy Spoils: 0 cy Imported fill: X cy Balance cut/fill typ.	n/a
Huckleberry Botanic Regional Preserve Blue-eyed Trail, Pacific Pea Trail, Meadow Barley Trail	• Balanced excavation/fill • Construct three new sections of a 4-ft wide trail (225-linear feet, 1,023 linear feet, 981 linear feet) with a mix of soils, using hand tools and small mechanized equipment • Install trail signage	Construction Area:0.40 acres Final Footprint: 0.20 acres	Depth: 1-2 feet Excavation: 991 cy Fill: 991 cy Spoils: 0 cy Imported fill: X cy Balance cut/fill typ.	
RECREATION FACILITY DEVELOPMENT				
McCosker Sub-area Fiddleneck Field recreation area	• Remove six underground storage tanks from Fiddleneck Field • Clear and grub site • Remove aggregate material, concrete and abandoned utilities • Place fill from creek restoration work • Prepare graded pads for future camping/day use facilities • Backfill depressions • Install ADA-compliant picnic tables, toilet, camping amenities, interpretive exhibits • Install communication line • Create parking area for 43 spaces • Install hitching posts and watering trough for equestrian use • Install bicycle storage facilities - add electric recharging stations as demand dictates	Fiddleneck Recreation Construction Area: 2.8 acres Final Footprint: 2.8 acres	Fiddleneck Depth: 5-15 feet Excavation: 240 cy Fill: 30,300 cy Spoils: 0 cy Imported fill: 0 cy	n/a
McCosker Sub-area Fern View Terrace Picnic area	• Protect trees in place • Clear and grub site • Prepare graded pads for future picnic and interpretive facilities	Construction Area: 0.3 acres Final Footprint: 0.3 acres	Depth: 1-2 feet Excavation: 100 cy Fill: 100 cy Spoils: 0 cy Imported fill: 0 cy	
IMPROVEMENTS TO UTILITY INFRASTRUCTURE				
Preserve Sub-area Sibley Main Staging Area	Water Tank • Construct 100 sq. ft. concrete pad of sufficient strength to support the tank • Install prefabricated water tank on concrete pad	Construction Area: 0.002 acres Final Footprint: 0.002 acres	Depth: 1-2 feet Balance cut fill typ.	n/a
Preserve Sub-area Old Tunnel Road	Restrooms • Excavate for one precast vault toilet and fill with 4-inch sand leveling course and four inches of compacted aggregate base • Install one precast vault toilet	Construction Area: part of Old Tunnel road - 0.1 acres Final Footprint: part of Old Tunnel road - 0.1 acres	Depth: up to 4 feet Excavation: 32 cy Fill: 0 cy Spoils: 32 cy Imported fill: 0	

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
McCosker Sub-area Fiddleneck Field Eastport Station Staging Area	Utility Lines • Prior to excavation, contact USA to determine the location of existing underground structures and conflicts • Excavate four-foot wide trenches for utilities • Install 3,200 linear feet of water lines for potable water supply service • Underground 1,100 linear feet of existing overhead power and communication lines • Place a layer of appropriate leveling backfill on the bottom of the trench • Complete all required testing • Cover trenches with a minimum of 2 feet of fill Water Tank & Treatment System • Construct 100 sq. ft. concrete pad of sufficient strength to support the tank • Install prefabricated water tank and treatment system on concrete pad • Install square foot concrete Irrigation • Remove pumphouse and cap water tank • Install automatic temporary underground irrigation system for riparian habitat establishment connecting to pumphouse water tank Restrooms • Excavate for two precast vault toilets and fill with 4-inch sand leveling course and four inches of compacted aggregate base • Install two precast vault toilets Solid Waste • Install trash disposal area with animal-proof cans	Construction Area: 0.1 acres Final Footprint: 0.1 acres	Depth: up to 10 feet Excavation: 320 cy Fill: 320 cy Spoils: 0 cy Imported fill: 320 cy	n/a

Trail Development

Trail system development would be prioritized and funded as part of the District Trail Development Group work plan considering trail development priorities throughout the District. Actions concurrent with trail development would include: 1) updating Ordinance 38 to reflect LUPA trails and trail uses; 2) updating the trail brochure identifying sanctioned hiking, equestrian, biking and dog use trails, and official access points to Robert Sibley Volcanic Regional Preserve; 3) installing educational, wayfinding, and Universal Trail Assessment Process (UTAP) signage as described in *Section ~~4.6.5~~2.5.3.8 Construction Consideration for New Trails, Sub-section Trail Signage* at the staging areas, trailheads, and trail junctions to inform park visitors of parkland conditions and destinations; and 4) preparing an information guide informing park visitors of the wildlife and plant communities represented along the Alder Creek Nature Trail and throughout the trail system alignments, along with measures that are being taken to preserve wildlife habitat and cultural resources.

Overall, the LUPA recommendations, if adopted through the Ordinance 38 process, would not change existing policies within the Preserve sub-area and Huckleberry Botanic Preserve regarding bikes and dogs, including policies pertaining to dogs on leash and dogs off leash and under voice control. However, as the recommendations in the LUPA would add dog and mountain bike use to existing and proposed trails not currently identified in Ordinance 38, the LUPA recommendations would require changes to the Ordinance 38. Any changes to dog and bike use recommended in the LUPA could not be implemented unless and until the Board considers amending Ordinance 38. This includes a temporary modification of Ordinance 38 which currently prohibit dogs on the McCosker Loop Trail on the McCosker parcel (Resolution 2016-12-318) and use of bikes on narrow trails per Ordinance 38, Section 409.8 Bicycles and Personal Conveyances, which states, "*Bicycles are not permitted on narrow hiking or riding trails, except those areas specifically designated from time to time by the Board as allowed. Attachment "A" contains the current list of exceptions (rev. 7/10)*."

Implementation of the LUPA recommendations pertaining to trail use would require:

- Recension of Resolution 2016-12-318 prohibiting dogs in the McCosker sub-area.
- Modification of Ordinance 38, Section 409.8 (d), to accommodate bikes on the following trails: sections of the Blue-eyed Trail, Fiddleneck Field Access, Leatherwood Creek Trail and sections of the Meadow Barley Trail
- Modification of Ordinance 38, Section 409.8 409.8 (c) to accommodate a change in use on existing ranch roads currently posted no bikes on the following trails: a 0.1- mile section of the Gudde Ridge Trail and a 0.3-mile section of the Round Top Loop Trail.

2.6.1.2 Construction Workforce

Preserve Staging Area, Water Supply and Road Improvements

District Maintenance and Skilled Trades (MAST) staff with support from District parks staff as dictated by their job classifications or contractors.

McCosker Sub-area Creek Restoration and Recreation Improvements

Construction of these project elements would likely be completed by contractors with a specialty in creek restoration with oversight from District staff. There would be approximately four to ten construction workers on site during each phase of Project construction.

Trail Development

Construction of these project elements would likely be completed by District MAST staff and Trail Development Group staff as dictated by their job classifications or contractors. Trail development work may be augmented by volunteer crews and work groups such as Americorps. Work crews generally range from two to twenty in a single work crew. Special volunteer activities may bring up 60 volunteers for a one to three-day event.

2.6.1.3 Construction Equipment

Preserve Staging Area, Water Supply and Road Improvements

Equipment selection for paving, vault toilet, and water tank work would be the responsibility of the contractor. Heavy equipment needed to complete the work would likely include: graders, excavators, dump trucks, pavers and a crane for the vault toilet.

McCosker Sub-area Creek Restoration and Recreation Improvements

Equipment selection for demolition and removal of existing structures and creation of the creek channel, and development of the public access and recreation facilities would be the responsibility of the contractor. Heavy equipment needed to complete the work would likely include: graders, excavators, bull dozers, a cement pumper to deliver the concrete mix, haul trucks and a crane to install the vault toilet and bridges.

Anticipated construction equipment to be used for the various Project components are shown in *Table 2-7, Construction Equipment Usage by Project Component*. It is anticipated that the onsite fill materials and the Orinda formation (sandstone and siltstone) bedrock could be excavated with heavy earth-moving equipment such as dozers, backhoes, and excavators; however, it is possible that rubble, buried obstructions or very dense gravel could be encountered in the fill that could require jack-hammering or hoe-ramming to excavate. Excavations in Moraga formation volcanic rock and/or removing existing concrete materials at the site may also require jack-hammering or hoe-ramming.

If drilled piers are selected for the bridge foundations, the contractor would be responsible for selecting equipment with sufficient capacity to drill into the rock and very dense gravelly fill. Drilling for piers would extend below groundwater and soil having little or no cohesion (sands and gravels). The drilled pier contractor would therefore need to anticipate having to: 1) remove saturated cohesionless and/or soft materials from the hole; 2) break up and remove oversize material, if necessary; 3) drill with slurry and/or case pier holes; and/or 4) use tremie methods to displace groundwater while pouring concrete, as appropriate.

Trail Construction

New narrow trails would be constructed using a combination of small, mechanized equipment and hand tools. Some brushing of shrubland habitat and disruption of grassland habitat would be involved in the trail construction work requiring the use of chainsaws, brush cutters and mowers.

These trails would be constructed in a mix of Orinda and Moraga soils where the hazard of erosion is moderate to high, especially in areas of bare soil, due to the steepness of slope. In general, trail construction work would consist of a four-foot wide trail footprint (permanent impact area) plus two feet on each side of the trail for a temporary work area. Trail-related project components would require ground disturbance to no deeper than four feet.

To minimize the mobilization of sediment to creeks and other water bodies, the following Best Management Practices would be incorporated during trail activities involving construction, modification and/or restoration:

- The Project work areas would be accessed during the dry season to minimize erosion and sediment transport
- Vehicles and equipment would be limited to those required to construct the designated trail alignments
- Exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways would be enclosed and covered
- Berms, vegetated filters, silt fencing, straw wattles, plastic sheeting, catch basins, or other means necessary would be used to contain soil and filter runoff to prevent the escape of sediment from disturbed areas
- Placement of earth or organic material would be prohibited where it may be directly carried into a stream or body of standing water
- The following types of materials will be prohibited from being rinsed or washed into waterways: concrete, solvents and adhesives, fuels, dirt, gasoline, asphalt, and concrete saw slurry.

TABLE 2-7
CONSTRUCTION EQUIPMENT USAGE BY PROJECT COMPONENT

Sub-area	Equipment	Construction Usage			
		Project Component	Number	Duration of Use (weeks)	Daily Use (hours/day)
McCosker	Scraper	Mass Excavation	1	5	8
Preserve, McCosker	Excavator	Excavation, placing rock material, sorting soil	3	40	8
Preserve, McCosker	Dozer	Fill Placement	1	40	8
McCosker	Pump	Dewatering	2	40	24
Preserve, McCosker	Haul Trucks	Earthwork, import rock material, off haul debris	1	30	6
McCosker	Crane	Bridge placement	1	2	6

Preserve, McCosker	Grader	Road work	1	3	8
Preserve, McCosker	Paving Machine	Road work	1	2	8
McCosker	Mini-excavator	Trenching for water system	1	2	8
Trail Construction all sub-areas	Mini-excavator, (e.g., SWECO), Hand Tools	Excavation for trail project	2	20/season	12
Trail Construction all sub-areas & Huckleberry	Mini-excavator, (e.g., SWECO), Hand Tools	Fill placement for trail project	2	20/season	12
Trail Construction all sub-areas & Huckleberry	Chainsaw, brush cutters, mowers, hand tools	Vegetation clearing for trail project	8	20/season	12
Trail Construction all sub-areas & Huckleberry	Mini-excavator, (e.g., SWECO), hand tools, boulder buster	Rock work for trail project	2	20/season	12

2.6.1.4 Construction Transport of Materials and Traffic Volumes

Preserve Staging Area and Road Improvements

Parking area improvements occurring in the Preserve and McCosker sub-areas would be located within previously disturbed areas that have been graded and compacted. In areas where there is vegetation, the vegetation generally comprises a mix of shrubs, primarily coyote brush, poison oak and non-native species and bay and eucalyptus trees (Preserve sub-area) and non-native grasses and ruderal species (McCosker sub-area). Modifications to the existing Sibley Main Staging Area would expand the existing parking capacity from 38 spaces to approximately 73 spaces. The expanded area would result in the addition of approximately 2,946 square feet of compacted gravel surface in an area that is currently vegetated, requiring development of a stormwater treatment feature.

Soil materials would largely be balanced on site.

Improvements in the Preserve sub-area would also involve repairing and repaving 1,100 feet linear feet of an existing 20-30-foot service road access off Old Tunnel Road. Road improvements along Old Tunnel Road would involve grinding the existing paving and retaining the material in the roadbed to minimize the off-site disposal of materials and then installing overlay asphalt paving and restriping the parking area to incorporate an angled parking layout. In addition, eight new parallel parking spaces would be added by relocating the Quarry Road gate southward and striping a section of the existing roadway. This work would not alter the amount of impervious area at the site.

Installation of the vault toilet at this site would involve excavation of approximately four cubic yards of soil to accommodate the toilet and prepare the site for maintenance and ADA compliant access. This material would stay onsite. The 272-foot restroom and access pad surrounding the

restroom facility would add approximately 675 square feet of impervious areas to the Old Tunnel Road site.

McCosker Sub-area Creek Restoration and Recreation Improvements

Construction of the restored creek channel is anticipated to require removal of 30,300 cubic yards of fill necessitating transport of up to 2,500 truckloads material, most of which would be transferred on-site to the proposed Fiddleneck Field recreation site. Removal and disposal of approximately 2,720 linear feet of buried concrete and metal pipes, and removal and disposal of the various concrete and wood debris contained within the restoration area would necessitate transport of up to 40 truckloads of materials to an approved off-site disposal area. These materials include historic-period, but not historically eligible features, such as concrete pads and retaining walls (possibly remnants of a truck scale, a horse paddock, and inlet boxes associated with water control of the stream).

Trail Construction

Construction of the proposed trails would typically be done to balance cut and fill on site. Drainage channels would typically be stabilized using native rock. Where sufficient rock is not available, rock or pre-cast block would be brought on site using a small trailer connected to a mini-excavator as in the case of the rock causeway. It is anticipated that there would be adequate rock on site to complete the drainage crossings.

2.6.2 Staging and Public Access

For construction work and staging throughout the Project area, fueling of equipment and vehicles would be required to be completed a minimum of 200 feet from the top of creek bank. Best Management Practices would be required to be deployed by the contractor to prevent unwanted plant and wildlife contamination and run-off and dust related problems.

Preserve Sub-area

Construction staging for construction activities associated with the Sibley Main Staging area and Old Tunnel Road would be confined to previously developed areas in proximity to the work areas.

McCosker Sub-area

A construction staging area would be designated for storing construction equipment and tools a minimum distance of 200 feet from the creek restoration site in an open area approved by the District inspector. It is likely to be in Fiddleneck Field, although equipment and material would be relocated within this area as the Project progresses. This construction staging area would be used to store equipment, supplies and stockpiled materials.

Trail Construction

Staging for the trail construction work would be dependent on the location of the trail work, but would be limited to existing staging areas and the trail construction corridor. Vegetation would be reestablished on any areas disturbed outside the finished trail tread.

2.6.3 Tree and Vegetation Removal

Preserve Sub-area Construction

Construction of the Main Staging Area improvements would involve vegetation removal, including eucalyptus, bay and sycamore trees tree and approximately 11,032 square feet (0.25 acres) of shrub vegetation, predominately poison oak and coyote brush (*Baccharis pilularis*) and various ruderal species. This vegetation would be removed from the site to a District composting site in accordance with the District's 2009 sustainability policy.

McCosker Sub-area Creek Restoration and Public Access and Recreation Improvements

During the excavation work, the creek and fill areas would be cleared and grubbed of surface and sub-surface deleterious mater, including vegetation. The vegetation consists of predominantly non-native plant habitat generally composed of remnant, declining ornamental trees from a former nursery operation, non-native grasses and ruderal species, along with a small (0.02 acre) wetland created through previous grading and filling activities by a previous owner in Fiddleneck Field and approximately 34 trees in the Alder Creek riparian corridor. In the creek zones this vegetation would later be replaced with native riparian vegetation. In Fiddleneck Field new plantings would emphasize the use of trees that would augment existing habitat located at the perimeter of these sites and groundcover in the informal meadow area suited to camping and other informal recreation activities.

Trail Construction

Trail construction would occur in a combination of grassland, shrubland, woodland and riparian habitats. In grassland and shrubland habitat some brushing and clearing of habitat would be required. In these areas, the materials would then be incorporated into the areas adjacent to the new trail as forest litter/debris to encourage rehabilitation and to help users to stay on the established trail. Trails in woodland and riparian habitat would not require tree removal or substantial pruning and disturbance to understory vegetation would be limited to the area of trail construction. Where the trail alignment would pass through eucalyptus forest it would typically meander around the healthy standing trees. Where the trail standards would require the cutting of standing or downed eucalyptus trees, these trees would be cut to accommodate a six-foot wide by ten-foot tall trail corridor. A limited amount of the cut materials would then be spread or broadcast over the disturbed areas adjacent to the new trail as forest litter/debris to encourage rehabilitation and to help users to stay on the established trail. In areas where there is a significant quantity of woody debris the District would refer to Stewardship staff to ensure that trail work would comply with the *East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan* (June 2010).

Overall, disturbance to vegetation from trail construction would be limited to an approximately eight-foot wide area covering approximately 18,607 linear feet (3.42 acres of construction area, 1.71 acres of final footprint).

2.6.4 Water Flow Diversion – McCosker Sub-area

Creek flow will be diverted for work within the McCosker Sub-area, including the reconstruction of creek channel on Alder and Leatherwood Creeks and installation of the sill on San Leandro Creek. The work on Alder and Leatherwood Creeks will occur over two construction seasons beginning downstream and working upstream. The contractor will dewater the culvert in lengths that correspond to accessible locations such as junction boxes or limits of work that do not exceed two- to three-hundred-foot segments. At the end of the construction season, the completed channel would be reconnected with the natural creek flow.

The dewatering system would include coffer dams placed at the upstream, and if needed at the downstream extents of the work. Fine mesh screens and fish relocation would occur on open segments of creek that are dewatered. A pump would be installed to lift the streamflow into a gravity pipe that discharges to a protected outfall structure downstream of the work area. Turbid water from diverting streamflow or dewatering construction areas would be either discharged adjacent to the channel or temporarily stored in a settling tank to remove sediment before discharging back in to the creek.

2.6.5 Construction Safety

2.6.5.1 Worker Environmental Awareness Program

A Worker Environmental Awareness Program (WEAP) would be given to all construction personnel before the commencement of vegetation clearing or ground-disturbing activities, such as grading, to minimize potential harm or take of protected species.

2.6.6 Project Operations and Maintenance

2.6.6.1 District Presence

Staff from the District's Operations and Public Safety Departments provide for the safety and protection of park visitors and staff; the protection of natural resources and park facilities; and the protection of adjacent neighbors and their property. Interpretive and Recreation Services Department staff offer educational and interpretive programs to the public. Public Safety and Trail Development Group staff offer programs directed at public safety and trail development and maintenance, respectively.

2.6.6.2 District Operations Roles and Responsibilities

Park staff serve as the primary presence in the park on a day-to-day basis. On-site staffing for this parkland unit is currently provided by five positions: one Park Supervisor, two 12-month Park Ranger IIs, and two 9-month Park Ranger IIs. They are responsible for patrolling and maintaining the Preserve and McCosker sub-areas, Huckleberry Botanic Regional Preserve, and Claremont Canyon Regional Preserve. District staff would also be responsible for Western Hills Sub-area when this property is incorporated into this unit as part of Robert Sibley Volcanic Regional Preserve. As the primary interface with park visitors, park staff provide information about the park and park regulations, and ensure public safety through routine patrol and by acting as first responders for: public safety emergencies, and crime, vandalism, and fire incidents.

District Park Operations – Staff Responsibilities

Basic District operational and maintenance services generally consist of: opening and closing staging and trailhead gates at opening and closing (park closure hours vary seasonally); litter pick-up; pavilion and restroom facility maintenance; trail maintenance; installing and maintaining signs, benches, and other park infrastructure, including fences and gates; managing the parkland's natural features, and biological, and cultural resources; and overseeing day to day activities associated with the parkland vegetation management programs, including integrated pest management programs, grazing, and the implementation of the fuel management treatment areas identified in the *East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan* adopted in 2010.

Routine service-road-width trail and narrow trail maintenance tasks are directed at keeping the system in a safe and operable condition, including minimizing soil erosion where sedimentation is threatening water quality of stream channels and adversely impacting aquatic habitat from road/trail-related erosion. Activities typically include: trail monitoring to identify substandard road and trail conditions; and repair through various means incorporating, as appropriate, grading and/or mowing the trail surface, replacement of existing culverts, installation of new drainage structures, trenching, backfilling and minor realignment resulting from erosion and/or slope instability. In addition, ancillary facilities along the trails are repaired or replaced as needed, including wooden benches and picnic tables. This work generally is performed by the District's Operations park staff and supplemented by the District's Maintenance and Skilled Trades staff.

Interpretive and Recreation Services

The District's Interpretive and Recreation Services Department seeks to connect visitors to the natural environment through stimulating experiences that instill an appreciation of the region's resources, and motivate participants to conserve and protect them. In this effort, the District provides a variety of programs and services for school groups, families, and adult visitors. Naturalists offer regional interpretive programs based from ten District Visitor Centers, while Outdoor Recreation staff operates from the Tidewater Boating Center in Oakland. Interpretive services include natural and cultural historical walks, hikes, and talks, environmental restoration projects, as well as wayside interpretive panels and self-guiding brochures. Recreation staff lead camping, hiking, biking, and summer day camp programs. The Project area is served by the District's Central Interpretive Sector at Crab Cove Visitor Center in the City of Alameda.

Protection and Emergency Response Services

The District provides police protection and fire prevention, fire suppression, and life safety services to the Project area. The District maintains a full-time staff of police officers, dispatchers and fire responders based out of its Public Safety Headquarters at Lake Chabot Regional Park in Castro Valley. The closest District fire substation to Sibley Preserve is located at Tilden Regional Park. District police vehicles and helicopters patrol the Project area daily.

In addition to District staff, the District has entered into a Mutual Response Area (MRA) Agreement with the Moraga-Orinda Fire Protection District, which sets forth plans for

coordinated responses to emergencies and service requests in defined areas of the District and the Moraga-Orinda Fire Protection District, including the Project area.

Local city and District police classify Robert Sibley Volcanic Regional Preserve, Huckleberry Botanic Regional Preserve, and Claremont Regional Preserve as urban parks. Based on the geographic proximity to the adjacent cities, the parks share much of the same policing issues with their municipal counterparts.

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CHAPTER 3
Project Analysis

Topics Analyzed

This chapter consists of an evaluation of the environmental impacts of the proposed Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment (Project). In accordance with Appendix G of the CEQA Guidelines, the potential effects of the Project on the following issues are analyzed in Chapter 3 of this EIR:

3.1 Aesthetics
3.2 Agriculture and Forest Resources
3.3 Air Quality
3.4 Biological Resources
3.5 Cultural Resources and Tribal Cultural Resources
3.6 Geology and Soils
3.7 Greenhouse Gas Emissions
3.8 Hazards and Hazardous Materials
3.9 Hydrology and Water Quality
3.10 Land Use and Planning
3.11 Noise
3.12 Mineral Resources
3.13 Population and Housing
3.14 Public Services
3.15 Recreation
3.16 Transportation and Traffic
3.17 Utilities and Service Systems

In accordance with Appendix F (Energy Conservation) potential effects of the Project relating to energy are also covered in Chapter 3 under *Section 3.7, Greenhouse Gas Emissions, Section 3.16 Transportation and Traffic* and *Section 3.17, Utilities and Services Systems* and summarized in Chapter 5, Other CEQA Considerations, *Section 5.2.1, Use of Nonrenewable Resources.*

Format of the Project Analysis

Each section in Chapter 3 follows the same format and consists of the following subsections:

Regulatory Framework

The Regulatory Framework subsection contains an overview of the federal, State, and local laws and regulations and District policies and ordinances applicable to each environmental review topic.

Existing Conditions

The Existing Conditions subsection describes current physical conditions with regard to the environmental factor reviewed.

Research Methodologies

The Research Methodologies subsection describes the methods used to complete the analysis including, but not limited to findings of regulatory laws, database searches, review of technical reports, site reconnaissance, interviews, and review of concept plans.

Significance Thresholds

The Significance Thresholds subsection tells how an impact is judged to be significant in this EIR. Where noted, these standards are based on the CEQA Guidelines and other regulatory criteria.

Impacts Analysis

The Impacts Analysis subsection gives an overview of potential impacts of the Project and explains why impacts are found to be significant, less than significant, no impact, or beneficial, and where applicable, identifies measures that would mitigate each impact to below the threshold of significance.

Due to the nature of the biological resources, this topic area also includes a **Project Elements** subsection that describes each of the project components. Each of the other topic areas describe the project elements within the content of the *Impacts Analysis* section.

Cumulative Effects

The Cumulative Effects discussion considers potential cumulative impacts that could result from the Project in conjunction with other current and reasonably foreseeable future projects causing related impacts.

3.1 Aesthetics

This section describes existing site characteristics that could be affected by the Project. It also describes laws, regulations, plans, and policies related to aesthetic resources that may be relevant to the Project. Impacts associated with the land alterations resulting from the proposed construction activities are also discussed in *Sections 3.3, Air Quality, 3.4, Biological Resources, 3.5, Cultural and Cultural Tribal Resources, 3.6, Geology and Soils,* and *3.9, Hydrology and Water Quality,* along with applicable regulations, standard Best Management Practices, and mitigations that would serve to reduce Project activities to below the level of significance.

3.1.1 Regulatory Framework

This regulatory framework sets the context for the range of issues related to aesthetics that the District considered in the evaluation of the potential for the Project to have a significant effect on aesthetics resources.

Federal

There are no federal laws or regulations regarding aesthetic and visual resources that are applicable to the Project.

State

California's Scenic Highway Program is the primary State mechanism for defining aesthetic resources in the Project area. This program is summarized below.

California's Scenic Highway Program

The California Scenic Highway Program was created by the state legislature in 1963 and is maintained by the California Department of Transportation (Caltrans) to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation easements. State regulations and guidelines governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263. A highway may be designated "scenic" depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view. California's Scenic Highway Program preserves and protects scenic highway corridors from changes that would diminish their aesthetic value. State Route Highway 24 is a designated scenic highway extending from the east portal of the Caldecott Tunnel to State Route 680 near Walnut Creek.

Local Resource Protection Policies

The Project area shares its boundary with other District parklands, EBMUD properties, a Geological Hazard Abatement District (GHAD) associated with the Wilder residential development in the City of Orinda, and several private properties. Most of the Project area is in unincorporated Contra Costa County, with smaller areas lying within the cites of Orinda and Oakland.

City and County General Plan Policies

City and county general plan policies provide guidance on District parklands from the planning phases through project implementation. Relevant city and county general plan policies pertaining to visual resources in the Project area are described in *Table 3.1-1, City and County Visual Resources Goals and Policies.*

TABLE 3.1-1
CITY AND COUNTY GENERAL PLAN AESTHETIC RESOURCES GOALS AND POLICIES

City of Oakland General Plan	Project Consistency
Approximately 57 acres of the Project area lie within the City of Oakland and are included in the Open Space, Conservation and Recreation (OSCAR) Element of the City of Oakland's 1996 General Plan as part of the North Hills Planning District. Policies within the OSCAR pertinent to aesthetic and visual resources include Policy CO-7.3: Forested Character – Make every effort to maintain the wooded or forested character of tree-covered lots when development occurs on such lots.	The Project would not alter the current designations of permanent open space areas and park and recreation areas that are consistent with the City of Oakland General Plan. Ongoing land management actions throughout the Project area that would continue into the future are directed at retaining woodland environments in their natural state to maintain water quality, biotic diversity, aesthetic values, and recreational opportunities. Management practices for oak and riparian woodland communities consist of conserving woodland areas for plant diversity.
Contra Costa County General Plan	**Project Consistency**
Approximately 1,261 acres of the Project area lie within the Contra Costa County. The Contra Costa County General Plan's Land Use, Conservation, and Open Space Elements contain the following policies related to visual character. Scenic resources are classified as scenic waterways or scenic ridgelines. In the Project area, scenic ridgelines include Gudde Ridge along the East Bay Hills. Specific policy references include the following: • 3-18: Flexibility in the design of projects shall be encouraged in order to enhance scenic qualities and provide for a varied development pattern. • 8-21: The planting of native trees and shrubs shall be encouraged in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are sustained in urban areas. • 9-15: In order to conserve the scenic beauty of the County, developers shall be required to restore the natural contours and vegetation of the land after grading and other land disturbances. Public and private projects shall be designed to minimize damages to significant trees and other visual landmarks. • 9-24: Any new development shall be encouraged to generally conform with natural contours to avoid excessive grading. • 9-27: The appearance of the County shall be improved by eliminating negative features such as non-conforming signs and overhead utility lines, and by encouraging aesthetically designed facilities with adequate setbacks and landscaping.	Proposed Project components would be consistent with the visual resource goals and policies of the Contra Costa County General Plan elements through creek restoration, planting of riparian vegetation that is native to the site, and tree plantings that would augment existing habitat located at the perimeter of the recreation site, as well as providing screening, shade, and aesthetic value for park visitors. Additionally, utility extensions to serve the proposed recreation area would involve undergrounding existing overhead power and communication lines.

The Contra Costa County General Plan defines a scenic route as "a road, street, or freeway, which traverses a scenic corridor of relatively high visual or cultural value" (Contra Costa County, 2010). Within the project vicinity, Caltrans has designated Highway 24 as a state scenic highway. Relevant guiding policies include: • 5-49: Scenic views observable from scenic routes shall be conserved, enhanced, and protected to the extent possible. • 5-56: Aesthetic design flexibility of development projects within a scenic corridor shall be encouraged.	While the Preserve sub-area is located above the Caldecott Tunnel, defined as part of the Highway 24 state-designated scenic highway, the tunnel cannot be seen from the Project area and only distant, densely vegetated views of Project open space are visible from Highway 24. As no development is proposed within this view corridor and current open space would be protected, the Project would be consistent with this policy.
City of Orinda General Plan	**Project Consistency**
Approximately 389.6 acres of the Project area lie within the City of Orinda. The Environmental Resources chapter of the City of Orinda General Plan includes a Conservation Element with the following guiding policies pertinent to aesthetic and visual resources: • 4.1.1 F – Achieve aesthetically sensitive grading that conforms to the natural contours, ensures safety and preserves trees and other vegetation to the greatest practical extent. • 4.1.1 G – Protect visually prominent ridgelines and hillsides from development; recreation areas to include an extension eastward of the East Bay Regional Parks.	Through pre-determined actions set forth in District Resolution No: 2006-1-14, District and Property Owner, OGLLC, 2008 First Amendment to Donation Agreement by and between the East Bay Regional Park District and Property Owner, OGLLC, the 2004 Second Supplemental EIR for the Montanera Project, and City of Orinda Resolution 13-05 this Project would be consistent with this policy

East Bay Regional Parks

2013 District Master Plan

The 2013 District Master Plan defines the long-term vision for lands managed by the District. The long-term vision for lands managed by the District as set forth in the 2013 District Master Plan states,

> "*The District envisions an extraordinary and well-managed system of open space parkland in Alameda and Contra Costa Counties, which will forever provide the opportunity for a growing and diverse community to express nature nearby*."

To achieve the District Master Plan vision for the community to experience nature nearby the District will:

- Acquire and preserve significant biological, geologic, scenic and historic resources within Alameda and Contra Costa counties
- Manage, maintain and restore the parklands so they retain their important scenic, natural and cultural values
- Monitor the effects of climate change on District resources and utilize adaptive management techniques to adjust stewardship methods and priorities to preserve the natural cultural and scenic values of the parks and trails.

District Master Plan Policies

The Master Plan provides a decision-making framework and identifies policies that will achieve District-wide objectives. Development objectives, land use classifications, and planning and management guidelines are established by the Master Plan. The Master Plan includes policies for addressing visual resources as described in *Table 3.1-2, 2013 District Master Plan Aesthetic Resources Goals and Policies.*

TABLE 3.1-2
2013 DISTRICT MASTER PLAN AESTHETIC RESOURCE GOALS AND POLICIES

Goals and Policies	Project Consistency
KEP4: The District will participate in efforts to protect scenic or cultural resources, develop larger, multi-agency open space preserves, provide recreational opportunities, protect agricultural use, avoid hazards and plan for appropriate urban grown boundaries.	Consistent with Policy KEP4, the Project would retain 1,310 acres (approximately 99 percent of the Project area as Natural Units, "areas protected for their intrinsic values as well as for public enjoyment and education.
PRPT28: New utility lines will be placed underground on land owned, operated, or managed by the District to retain the optimal visual qualities of the area... and will work with other agencies and neighbors to reduce visual impacts on adjacent lands. The District will seek to avoid the construction of high voltage power lines within the parklands, particularly in areas of sensitive or aesthetically important resources and in preserve areas.	The Project would be consistent with policy PRPT28 as utility improvements that would serve the proposed recreation area would include undergrounding existing overhead power and communication lines.
PRPT29**:** The District will keep its lands, including all ridges and peaks, free of additional communication facilities in order to maintain open viewshed, natural conditions and public use as well as to limit vehicular and service activities…. The District will work to reduce the detrimental visual impact of buildings, towers and access roads at existing sites and will work with other agencies and neighbors to reduce this impact on adjacent lands.	Consistent with Policy PRPT29, the Project would retain ridges and peaks as open viewshed. Proposed development would be limited to Recreation/Staging Units located in previously developed areas with limited visibility from adjacent properties, roadway and trail vantage points.

Ordinance 38

District Ordinance 38 sections directed at maintaining the visual character of District parklands area summarized in *Table 3.1-3, Relevant Ordinance 38 Sections* below.

TABLE 3.1-3
RELEVANT ORDINANCE 38 SECTIONS

Section 804. Plants. This section states that, "No person shall damage, injure, collect or remove any plant or tree or portion thereof, whether living or dead, including but not limited to flowers, mushrooms, bushes, vines, grass, turf, cones and dead wood located on District parklands. In addition, any person who willfully or negligently cuts, destroys or mutilates vegetation shall be arrested or issued a citation pursuant to Penal Code Section 384a."
Section 805. Geological Features. This section states that, "No person shall damage, injure, collect or remove earth, rocks, sand, gravel, fossils, minerals, features of caves, or any article or artifact of geological interest or value located on District parklands."
*Section 806. Archaeological Features***.** This section states that, "No person shall damage, injure, collect or remove any object of paleontological, archaeological or historical interest or value located on District parklands. In addition, any person who willfully alters, damages, or defaces any object of archaeological or historical interest or value or enters a fenced and posted archaeological or historical site shall be arrested or issued a citation pursuant to Penal Code Section 622-1/2."
900.2 Littering or Dumping. This section states that, "No person shall litter or cause to be littered any District parkland, or cause to be dumped any waste matter in or upon any District parkland. It shall be unlawful to place, deposit, or dump, or cause to be placed, deposited or dumped, any rocks or dirt in or upon any District parkland without the prior written consent of the General Manager. Any person littering or dumping any waste material upon District parkland shall be arrested or issued a citation pursuant to Penal Code Sections 374.4 and 374.3."
900.3 Household or Industrial Materials. This section states that, "No person, firm, or business shall bring household or industrial garbage, trash or waste materials into any lands owned or operated by the District for the purpose of placing such materials into any trash can, dumpster, or receptacle provided by the District."
904.3 Abandonment. This section states that, "Whenever a District Public Safety Officer has reasonable grounds to believe that a vehicle has been abandoned within the District, the vehicle may be removed as authorized by Vehicle Code Section 22669(a)."

3.1.2 Existing Conditions

Visual Elements

The Project area is located in the East Bay Hills at the boundary of Alameda and Contra Costa Counties between Tilden Regional Park and Redwood Regional Park. Much of the Project area is situated on moderately steep to steeply sloping terrain with prominent ridges bisected by interior valleys and side canyons. Most of the dominant ridges are north-south trending, including Gudde Ridge, a five-mile long easterly spur of Round Top running northwest to southeast through the Robert Sibley Volcanic and Huckleberry Regional Preserves, while the Zuckerman Saddle an intermediate, southeast trending landform serves to visually separate the larger part of the Western Hills Sub-area from the McCosker Sub-area.

The East Bay Hills have visual resource values viewed from within the Project area and as viewsheds seen from external vantage points. These visual resources include topographic, landscape, and riparian elements that provide a "sense of place" and contribute to the identity of the place.

Whether park visitors explore these areas on foot, horseback, or bicycle, they are afforded panoramic views from ridgelines and peaks as well as secluded, enclosed views from within valleys and deep canyons. Elements of visual interest include volcanic debris flows, lava flows, a variety of natural communities including riparian corridors, and remnants from former human activities. The general character of the three sub-areas contained within the Project Area is comprised largely of a mix of mixed oak woodland and grassland environments with some smaller areas dominated by seasonal wetlands, tree plantations, and developed/ruderal landscapes.

State Scenic Highway

State Route Highway 24 is an 8.8 mile, designated scenic highway extending from the east portal of the Caldecott Tunnel to State Route 680 near Walnut Creek. The route passes attractive residential and commercial areas. Rising to 3,849 feet, Mount Diablo is the dominant feature when traveling eastward. The Caldecott Tunnel is a dominant landscape feature when traveling westward along this State Route. The natural appearance provided by the mixed oak woodland and grassland environments paralleling this highway corridor near the Project area provides a pleasing visual element when traveling eastward or westward.

The Caldecott Tunnel contains historic and modern elements that render it eligible on both the National Register and California Register. This structure, completed in 1937 and still in use today, represents an impressive feat of engineering with the two 3,610-foot-long and nearly 27-foot-wide bores that contain two,11-foot lanes bores. A third bore was completed in October 1964 and a forth bore was completed in late 2013. These bores are of similar length and also contain two traffic lanes.

Preserve Sub-area – Visual Setting

Topographic Features

An extinct volcano known as Round Top is the most prominent visual feature within the Preserve sub-area with a summit elevation of 1,763 feet, although the summit of the volcano is owned by other parties. Former grading activities associated with earlier road and trail development and quarry operations in the Preserve sub-area have exposed geologic features that can be viewed from interior sites within the Project area. These include the North Quarry, which exposed the interior of one of the major feeder volcanoes of the Berkeley Hills, and the South Quarry, which shows volcanic debris and a possible lava plug.

Landscape Character

Oak Woodlands consist of a mix of trees that reach 30 to 50 feet in height. In the Preserve sub-area, Oak Woodlands occur in the Sibley Triangle and in the canyon south of the park residence in the main unit, and in the drainages and canyons on the northwest slopes of Round Top. Riparian Woodlands occur as a short strip of willows located in a drainage below the flat, quarried pads in the northern half of the Preserve sub-area.

Riparian Features

Round Top marks the dividing line between the San Pablo and the San Leandro Creek watersheds. The southeastern slopes of the peak are in the 19,430-acre Upper San Leandro Reservoir sub-watershed, and drainage channels from these slopes empty into a valley that forms the headwaters of San Leandro Creek.

Existing Structures and Infrastructure

Existing structures within the Preserve sub-area include: a visitor pavilion with restrooms, a backpack camp, two security residences, and a park office. Site infrastructure includes parking areas, narrow and ranch road trails, various grazing infrastructure including a corral, water troughs, fencing, one PG&E 115kV high voltage transmission line suspended from large towers varying from 90 to 120 vertical feet in height that crosses the Preserve sub-area north of the park entrance. The Preserve sub-area also contains labyrinths created from local rock at the bottom of the remnant quarry pits.

Inholding parcels, totaling 4.4 acres, located at the summit of Round Top within the Preserve Sub-area create a visual intrusion in the form of a paved access road and communication facilities including metal towers that extend upward from these sites.

Western Hills Sub-area – Visual Setting

Topographic Features

Elevations range from approximately 600 feet (NGVD 1929) at the toe of the slopes that face into the Wilder subdivision to between 1,100 and 1,600 feet on the surrounding peaks.

Landscape Character

The California annual grassland community dominates the south facing slopes of the Western Hills. On the east facing slopes Oak Woodlands dominant with Riparian Woodlands along riparian corridors and scrub communities intermixed.

Riparian Features

Major tributaries include Brookside and Moraga Creeks on the east facing slopes. Several intermittent and perennial drainages form tributaries to San Leandro Creek on the south facing upland hills.

Existing Structures and Infrastructure

Features in the Western Hills sub-area that will remain when the land is transferred to the District, will include: a staging area at the southern terminus of Wilder Road. Site infrastructure includes narrow and ranch road trails, various grazing infrastructure including a corral, water troughs, and fencing. The Western Hills sub-area contains four sets of parallel 115kV power lines that cross the space east-to-west suspended from large towers varying from 90 to 120 vertical feet in height.

McCosker Sub-area – Visual Setting

Topographic Features

The McCosker Sub-area consists of a series of roughly parallel ridges and valleys that trend southeast-northwest. The primary tributary within the Project Area, McCosker Stream, lies within a gently sloping valley that is aligned roughly north-south. At the present time, McCosker Stream is largely contained in buried concrete and metal pipes.

Landscape Character

The California annual grassland community dominates the south facing slopes of the McCosker sub-area and forms part of the mosaic of Oak Woodlands and scrub communities on the east facing slopes. This woodland community also occurs in the upland hills along intermittent and perennial drainages that form tributaries to Alder Creek and along lower sections of the access road extending from Pinehurst Road to two constructed terraces in the valley floor. Riparian Woodlands are intermixed with the Oak Woodlands along most of the major and minor drainages, including the exposed sections of Alder Creek. These vegetated drainages bisect the grasslands creating strong visual bands of green and gold during the summer and fall months. Notable bands of varying colors and density of grasslands define the underlying Moraga and Orinda geologic formation in the south facing grassland areas that can be seen when looking north from vantage points within the McCosker sub-area, including the graded, level terraces proposed for recreation development.

Riparian Features

An unnamed perennial stream, herein referred to as Alder Creek, occurs mainly within the McCosker sub-area. Alder Creek generally flows from the northern portion of the sub-area south towards Pinehurst Road. It converges with San Leandro Creek immediately south of Pinehurst Road. The lower reach of Alder Creek and several of its tributaries have largely been filled and

culverted and some portions of the culverts have failed resulting in severe erosion. The culverted portions of Alder Creek are located beneath oak woodland and developed/ruderal areas. There are a few daylighted segments of Alder Creek within this lower reach that support riparian woodland vegetation.

An unnamed tributary of Alder Creek, herein referred to as Leatherwood Creek, originates in the eastern hills of the sub-area and flows southwest until it converges with Alder Creek. The lower reach of Leatherwood Creek is almost entirely culverted, except for a small daylighted segment that is surrounded by oak woodland vegetation. The culverted portion is located beneath non-native grassland, oak woodland and coyote brush scrub.

Existing Structures

Existing facilities in the McCosker sub-area include: a park residence, an equipment storage shed, vacated sub-grade fuel storage tanks, and various remnants of a former construction and rock crushing business.

Site infrastructure includes parking areas, narrow and ranch road trails, various grazing infrastructure including a corral, water troughs, and fencing. Two sets of PG&E 115kV high voltage transmission lines suspended from large towers varying from 90 to 120 vertical feet traverse the McCosker sub-area from southwest to northwest.

Views

Views from the Proposed Project Area into Surrounding Lands

The general visual character of the lands surrounding the Project area is of open space and suburban and urban residential. The landscape surrounding the Project area consists mostly of open space, including protected watershed lands to the east. Refer to *Figure 3.1-1, Visual Setting Key* for the location of representative views of the Project area shown on subsequent pages.

Visual features that can be observed from the ridgelines that run across the Western Hills and McCosker sub-areas, and along the ridgeline of the Preserve Sub-area include views of the cities of San Francisco and Oakland and the San Francisco Bay to the west. Protected watershed lands located predominately to the east provide vistas of open space dominated by hilly, grassland terrain, as well Mount Diablo and Lafayette and Briones Reservoirs, and several District parklands including Briones Regional Park, and Las Trampas Regional Wilderness. Single family housing east and west of the Project area are noticeable from various vantage points, especially along the ridgelines. Views from the Western Hills sub-area include mid-distance views into the Wilder residential subdivision and longer distance views of the City of Orinda.

Views from Area Roadways into the Project Area

The open space corridor offered by the Project area, which runs along the ridge, and extends down the east and west facing slopes of the East Bay Hills, provides the background setting for scenic views from vantage points throughout Alameda and Contra Costa Counties, including the major arterials and freeways used by commuters and travelers living and working in the adjacent communities.

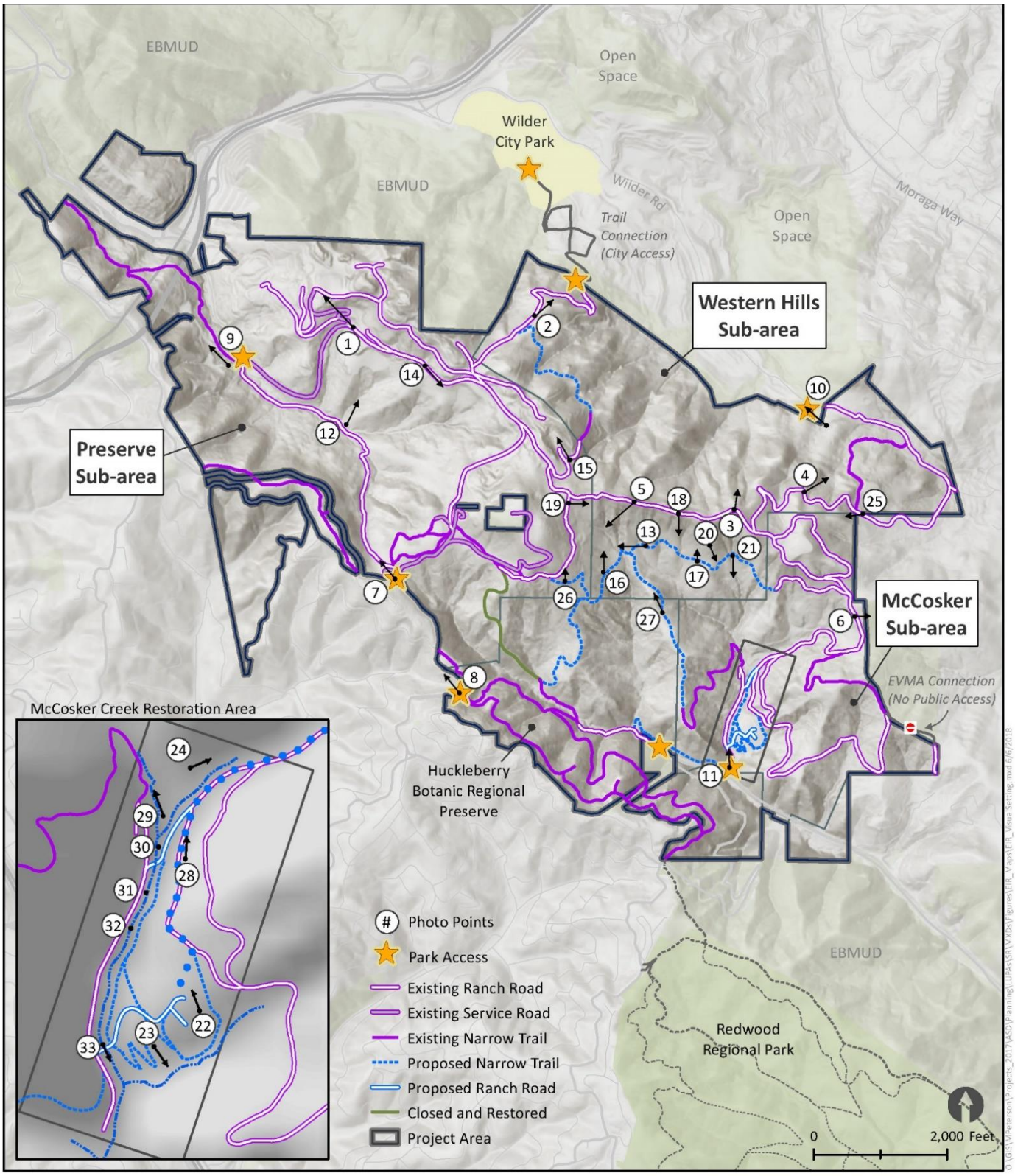
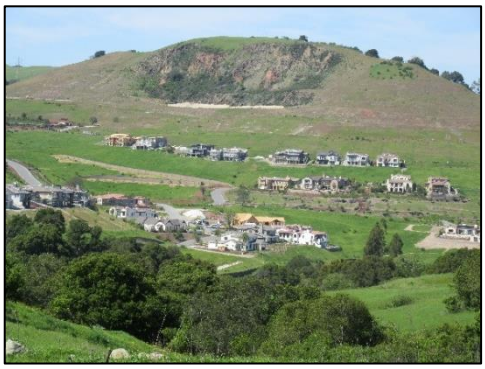


FIGURE 3.1-1: VISUAL SETTING KEY

Views from the Proposed Project Area into Surrounding Lands

1 Views from Quarry Trail in Preserve sub-area looking north toward Hwy 24



2 Views from Preserve Ridgeline looking toward Wilder Development

3 Views from Gudde Ridgeline looking toward the City of Orinda mid-distance and Mount Diablo in the background

4 Views from Western Hills ridgeline looking southeast

5 Views from McCosker ridgeline looking toward Huckleberry Preserve and private residential development

6 Views from McCosker sub-area looking south toward adjoining property

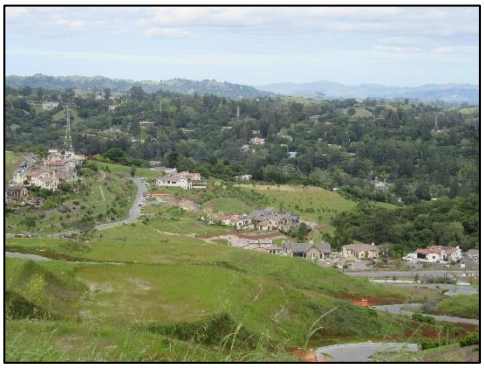
Views of Area Roadways from the Project Area

7 Views of Skyline Boulevard from the Sibley Main Staging Area

8 Views of Skyline Boulevard from the Huckleberry Trailhead

9 Old Tunnel Road- Skyline Trailhead

Views from Area Roadways into the Project Area



10 View from Wilder Road looking northeast toward site of Red-tailed Hawk Staging Area

11 Views of Eastport Staging Area from Pinehurst Road

12 Views into Sibley Preserve from Grizzly Peak Blvd.

Views from within the Project Area

13 Looking west toward the extinct volcano known as Round Top, a prominent visual feature from within the Project Area

14 Looking south along Quarry Trail

15 View of stone labyrinths in Preserve Sub-area

16 Views from McCosker Valley looking north toward the Western Hills sub-area

17 Views looking north toward mixed shrub habitat on south facing Gudde Ridge

Views from within the Project Area

18 Views from Gudde Ridge looking southwest toward the McCosker sub-area

19 Looking east along the Gudde Ridge Trail

20 Route of Gudge Ridge Trail in Western Hills sub-area looking West

21 Looking south from proposed Gudge Ridge Trail toward proposed McCosker Recreation Area

22 Views of equipment shed looking north in proposed camping and interpretive area in McCosker sub-area

23 Looking south in proposed camping and interpretive area in McCosker sub-area

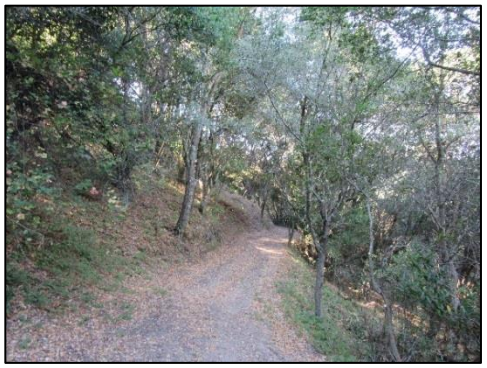
24 Looking northeast in proposed picnic site in McCosker sub-area

25 Route of Domingos Ranch Trail in Western Hills sub-area

Views from within the Project Area

26 Route of proposed Blue-eyed Trail in Preserve sub-area

27 Route of proposed Meadow Barley Trail in McCosker sub-area



28 Route of Arroyo Willow Trail in McCosker sub-area

29 Natural reach of Alder Creek in McCosker sub-area

30 Deteriorated culverted channel in proposed Alder Creek restoration area in McCosker sub-area

31 Deteriorated culverted channel in proposed Alder Creek restoration area in McCosker sub-

32 Filled section of creek channel in proposed Alder Creek restoration area in McCosker sub-area

33 Filled section of creek channel in proposed Alder Creek restoration area in McCosker sub-area

Three primary routes of travel provide access to the Project Area: Skyline Boulevard, Pinehurst Road, and Highway 24. Three of the access points are entered from connector roads, Wilder Road and Fish Ranch Road. Pinehurst Road, the primary access into the McCosker sub-area and the community of Canyon, descends from the ridgeline into a narrow, wooded valley.

Preserve Sub-area

Skyline Boulevard is a two-lane road that winds along ridgelines providing limited views into the Project area. The Main Staging Area along Skyline Boulevard is tucked into a wooded location and only becomes visible from the roadway within approximately 120 feet of the entry.

Old Tunnel Road can be reached from the Fish Ranch Road exit off State Route Highway 24. Due to its location at the toe of a slope and woodland character, the Old Tunnel Road is not visible from either Fish Ranch Road or from State Scenic Highway, Route 24.

State Route Highway 24 (SR-24) is the only state-designated scenic highway in proximity to the Project. The natural appearance provided by the Oak Woodland and grassland environments paralleling this highway corridor provides a pleasing visual element when traveling eastward or westward. The Caldecott Tunnel with historic and modern elements is a dominant feature when traveling westward along Highway 24. While the Preserve sub-area is located above the Caldecott Tunnel, the tunnel cannot be seen from the Project area and only distant, densely vegetated views of the Proposed Project area are visible from Highway 24.

Western Hills Sub-area

Wilder Road is a two-lane, landscaped roadway that extends from Highway 24 to its southern terminus at the boundary of the Western Hills sub-area. This road provides access to the Western Hills sub-area from two parking areas; Wilder Park, managed by the City of Orinda, and the Red-tailed Hawk Staging Area located at the southern terminus of Wilder Road. Views from the roadway include in the fore and middle ground, sports fields, a new community art and garden center, and single-family residences all currently under construction. Mid-distance views include views of the east facing slopes of the Western Hills sub-area and EBMUD lands to the west and open space to the east. Distant views include, to the east, the open space lands and glimpses of Mount Diablo.

McCosker Sub-area

Pinehurst Road is a two-lane road that winds from the ridgelines down into wooded canyons providing limited views into the Project area. This road, and the riparian corridor that defines San Leandro Creek, are the dominant features in a densely wooded environment. The Wilcox Staging Area located along Pinehurst Road is tucked into a canyon in a wooded location and only becomes visible from the roadway within approximately 80 feet of this access point.

Views from Adjacent and Nearby Properties into the Project Area

Preserve Sub-area

North and east of the Preserve sub-area are protected open space lands. Huckleberry Regional Preserve forms the southern boundary to the Preserve-sub-area. Private single-family residences are located along the western perimeter ridgelines of the Project area. Steep terrain and densely

wooded vegetation along the west, east and south boundaries of this sub-area limit views into the Preserve sub-area. Views into the Preserve sub-area from the Wilder residential development would be limited to the vegetated ridgeline, PG&E 115kV high voltage transmission lines and towers and metal communication towers that extend upward from inholdings within the Preserve sub-area.

Western Hills Sub-area

North of the Western Hills sub-area are protected open space lands. Views from the private residences in Wilder subdivision are similar to those traveling along Wilder Road, although the duration of the experience would be more sustained. Given the steep terrain and wooded nature of much of the site, views into the Project area from Wilder private residences would include views primarily of the east facing slopes of the Western Hills sub-area. These would include views of open space dominated by a mosaic of woodlands mixed with grassland and scrub communities. The PG&E 115kV high voltage transmission lines and towers would also be visible from many vantage points. The Red-tailed Hawk Staging Area located at the terminus of Wilder Road is tucked behind a hill and would not be visible from most vantage points within the subdivision.

McCosker Sub-area

The McCosker sub-area is bounded to the north, south and west by the open space lands of Huckleberry Regional Preserve and the Western Hills sub-area. To the southeast and south are a few private rural residential properties within the canyon floor along with some private ranch lands to the east. Steep terrain along the perimeter of the narrow valley floor, along with densely wooded vegetation on boundaries greatly limits views into the McCosker sub-area from the canyon floor. Private single-family residences located primarily along the perimeter ridgelines of the McCosker sub-area would have views that would include views of open space dominated by the mosaic of Oak Woodlands immersed with California annual grassland and scrub communities, as well as Riparian Woodlands intermixed with the Oak Woodlands along most of the major and minor drainages. The PG&E 115kV high voltage transmission lines and towers may also be visible from some vantage points. These would be distant, panoramic views encompassing different vistas depending on the viewer's vantage point. Steep terrain and dense vegetation would block views into the valley floor from most vantage points.

Ephemeral Conditions

Ephemeral conditions are those sensory experiences that are transitory in nature, happening either occasionally and /or for limited periods of time that may affect the Project site in ways that influence the visitor's experience. Within the Project area, these include summer fog June-August, which can greatly reduce views to the immediate foreground primarily along the west facing slopes of the Preserve sub-area and extending down into the canyon area of the McCosker sub-area. Sunrise and sunset views, combined with the panoramic views can afford the observer a pleasing ephemeral visual experience from the ridgeland trails.

3.1.3 Research Methodologies

In accordance with CEQA, this visual resource analysis included a review of: historical information relating to existing site conditions, site-specific information determined through site

reconnaissance visits, and a review of conceptual design information. Sensitive receptors would include park visitors, travelers along the access roads, and those with views into the Project area. Wildlife may be considered a sensitive receptor to night lighting.

3.1.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G, Section I, a project would have a significant impact on aesthetics if it would result in the following:

a) Have a substantial adverse effect on a scenic vista?

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be physical alterations to the landscape in all three sub-areas that would have the potential to affect the visual characteristics of the site. Therefore, each of the criteria is described in the impact analysis.

3.1.5 Impact Analysis

a) Impact AES-1: The Project would not have a substantial adverse effect on a scenic vista (Less than Significant).

Preserve Sub-area

Parking area and repaving improvements occurring in the Preserve sub-area would be located within previously disturbed areas in sites with limited visibility due to steep terrain and heavy woodland vegetation.

Thus, adverse impacts from the proposed improvements in the Preserve sub-area on scenic vistas would be *less than significant*.

McCosker Sub-area

Improvements in the McCosker sub-area would include creek restoration and public access and recreation improvements.

Creek restoration and enhancement would involve 3,061 linear feet of riparian habitat including daylighting two culverted drainages that are in poor condition, collapsing and partially blocked with sediments, referred to as Alder and Leatherwood Creeks. These culverted sections make up approximately 2,900 linear feet out of the 3,061 linear feet of riparian habitat in the previously

developed area out of total of approximately 12,965 linear feet of drainage channels comprising the Alder Creek watershed that flows to San Leandro Creek.

Recreation facility development for this area would occur in two main areas: Fiddleneck Field, and Fern View Terrace, and would include: a combined group camp/interpretive destination site, restrooms, interpretive and picnic facilities, parking and operations facilities. Development of the Fiddleneck Field combined group camp and interpretive program facility would be contained within a previously graded and filled terrace site. The Fern View Terrace picnic site would also be located on a previously graded and filled terrace site.

Due to the steep terrain and dense vegetation of the Project area, the proposed improvement areas would not be visible from most vantage points, thus the proposed improvements would not have an adverse effect on a scenic vista. The proposed creek restoration and recreation development areas would replace a degraded creek channel, a deteriorating nursery site, and graded terraces where existing vegetation is generally comprised of ornamental species, non-native grasses and ruderal species. The proposed improvements would enhance foreground and middle views within the McCosker sub-area. The development of this site for recreational uses would include the addition of riparian and oak woodlands, including tree plantings, as well as informal meadows. Landscaping and a grade differential would serve to separate the activity area from the parking area and focus views toward natural features in the surrounding environment. Plantings would emphasize the use of trees that would augment existing habitat located at the perimeter of the site, as well as providing screening, shade, and aesthetic value for park visitors.

Thus, adverse impacts from the proposed improvements in the McCosker sub-area on scenic vistas would be *less than significant*.

Project Area-wide -Trails

The Project would include trail construction activities that would cover approximately four miles of narrow, natural surface trails that would be positioned to minimize impacts on sensitive species throughout the Project area and closure and restoration of 0.6 miles of former trail and realignment of that section of trail in the Preserve sub-area and Huckleberry Preserve.

New trails in the developed Recreation/Staging Unit would largely be constructed as part of the development of the creek restoration activities and the Fiddleneck Field recreation area. Likewise, revegetation adjacent to these trails would occur concurrent with other plantings.

New narrow trails in the upland areas would be constructed using a combination of small, mechanized equipment and hand tools. Some brushing of shrubland habitat and disruption of grassland habitat would be involved in the trail construction work. Trails through woodland or riparian habitat would be aligned such that it would not require tree removal or substantial pruning. Disturbance to understory vegetation along the proposed, new, narrow trail alignments would be limited to an approximately eight-foot wide area covering approximately 11,911 linear feet (2.2 acres) in the undeveloped, upland areas. Within the area of large groupings of eucalyptus, there are a significant number of downed trees that would be affected. In this location,

downed or smaller diameter standing trees in the trail alignment would be cut to accommodate an approximately six-foot wide by ten-foot tall trail corridor.

As permanent disturbance to vegetation in these upland areas would be limited to an approximately one-acre area spread over the breath of the 1,381 Project area in a mix of vegetation types, these trails would not be highly visible from mid and distance vantage points and would not result in an adverse effect on scenic vistas.

These improvements would afford park visitors access to new environments expanding the areas available for recreation, including additional intimate and panoramic view opportunities. Due to steep terrain, the wooded environment, and limitation of proposed creek restoration, public access and recreation facility improvements to Recreation/Staging Units in previously developed sites in the Preserve and McCosker sub-area, potential impacts to scenic vistas from these improvements looking into or within the Project area would be *less than significant*. Moreover, trail development project-wide would be limited to narrow, natural trails, typically approximately four feet wide, that would be built by hand or small equipment, tree removal would be limited to eucalyptus trees in a fuel treatment management area, and trail adjacency areas disturbed during construction would be revegetated, thus, potential impacts to scenic vistas looking into or within the Project area from trail development would be *less than significant*. Thus, no mitigation is required.

Mitigation: None required.

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b) Impact AES-2: The Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (Less than Significant).

No development or change in dominant features is proposed in the Project area that would cause damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway or result in altered the views from State Route Highway 24. Additionally, while the Project extends over the Caldecott Tunnel along the ridgelines, no direct views of the tunnel or the highway are afforded from the Project area and no views of the Project improvements are afforded from the State Scenic Highway. As no development or change in dominant features are proposed in the Project area that would result in altered the views from State Route Highway 24, the natural appearance provided by the Oak Woodland and grassland environments within the Project area that provides a pleasing visual element would be retained. As a result, there would be *no impact* related to a state scenic highway and no mitigation would be required.

Mitigation: None required.

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c) Impact AES-3: Project improvements could substantially alter the existing visual character or quality of the site and its surroundings (Less than Significant with Mitigation).

Preserve Sub-area

The Project would include expansion of the existing parking capacity from 38 spaces to approximately 73 spaces at the Sibley Main Staging Area. Expansion of the Main Staging Area would involve minor grading at the existing parking to modify the existing parking layout and approximately 11,031 square feet of grading in a currently vegetated site and some tree removal. Soil materials would largely be balanced on site. While these improvements would not be visible beyond the immediate area of the Sibley Main Staging Area and are consistent with the District designation of a Recreation Staging Unit, this activity would have a short-term impact on site scenic resources resulting from the vegetation removal and grading activities, *requiring mitigation*.

Improvements to the Old Tunnel Road site would involve repairing, repaving and restriping the existing site to improve the existing road conditions and increase parking capacity from 13 to approximately 33 vehicles. This activity would involve grinding the existing paving and retaining the material in the roadbed to minimize the off-site disposal of materials and then installing overlay asphalt paving and restriping the parking area to incorporate an angle parking layout. In addition, eight new parallel parking spaces would be added by relocating the Quarry Road gate southward and striping a section of the existing roadway. The road and parking improvements would not expand the roadway length or width and would not involve a change in the existing character of the site.

Installation of the vault toilet at this site would involve grading and clearing vegetation immediately adjacent to the existing Old Tunnel Road access and excavation of soil to accommodate the toilet and prepare the site for maintenance and ADA-compliant access. While these improvements would not be visible beyond the immediate area of the Old Tunnel Road Staging Area and are consistent with the District designation of a Recreation Staging Unit, this activity would have a short-term impact on site scenic resources resulting from the vegetation removal and grading activities, *requiring mitigation*.

McCosker Sub-area

Project improvements in the McCosker sub-area would substantially alter the existing visual character of the valley floor through grading activities, site facility development, and creek restoration work, requiring consideration of mitigations. Each of these elements is described below.

Public Access and Recreation Facility Development

Improvements to the existing ranch roads would include improvements to the existing roadway circulation within the general footprint of existing roadways. Circulation improvements would also include three crossings of Alder Creek: Ninebark Public Vehicle Bridge, Fern View Terrace Maintenance Vehicle Bridge, and Alder Creek Maintenance Vehicle Bridge. The three structures would be designed as arched bridges with natural creek bottoms. These features would add to the

overall infrastructure at the site permanently altering the visual character of the valley floor of this sub-area, *requiring mitigation*.

Utility infrastructure improvements would involve digging trenches approximately 16 inches wide to a depth of up four feet. This Project element would occur in conjunction with the development of the recreation project elements when the area would be closed to the public to protect visitor safety. Long-term, installation of underground utilities within the McCosker sub-area would enhance the visual character and safety of site through removal of deteriorating poles and above-ground utility lines with new utilities that meet current standards consistent with District Master Plan policy PRPT28.

Recreation Facility Development in the McCosker Sub-area

Recreation facility development for this area would occur in two main areas: the 2.8-acre Fiddleneck Field, and 0.3-acre Fern View Terrace and would include: a combined group camp/interpretive destination site with a pavilion shelter, cooking preparation area, campfire area, restrooms, interpretive and picnic facilities, parking, operations facilities, landscaping, and trails that would provide connections between the developed recreation area and the Alder Creek Nature Trail.

Recreation facility development activities in Fiddleneck Field would involve placing fill material from the creek excavation work on existing terraces in areas of existing fill where the vegetation is generally comprised of remnant, declining ornamental trees from a former nursery operation, non-native grasses and ruderal species. Prior to initiating fill placement, the site would be cleared and grubbed of surface and subsurface deleterious matter, including vegetation, aggregate road-base material, concrete and abandoned utilities. While fill placement would provide an opportunity to create defined use areas and align views to surrounding natural features to enhance the visitor experience, grading and construction of the recreation features would result in the alteration of the existing visual character of the site, requiring the consideration of mitigation measures.

Recreation facilities proposed for the Fern View Terrace would include: graded pads with picnic tables for individual visitor use and for use during interpretive programs and interpretive features. Ornamental trees that serve to define the prior uses of this space would be retained.

The development of these terrace sites for recreational uses would modify the visual character of the site by raising and contouring the existing terraces, removing stored materials, and creating new landscape features, including a meadow area and adding riparian and oak woodlands. Tree plantings would augment existing riparian habitat located at the perimeter of these sites, as well as providing screening, shade, and aesthetic value for park visitors.

These features would permanently alter the visual character of the valley floor of the existing filled terraces, *requiring mitigation*.

Creek Restoration and Enhancement

Creek restoration activities would involve excavating fill material, daylighting the creek channel, removing the existing culverts and drainage structures, constructing in-stream and near-stream enhancements, removing approximately 34 trees and planting wetland and riparian vegetation along the daylighted creek channel. Existing in-channel structures would be removed and the site would be cleared and grubbed of surface and sub-surface deleterious mater including vegetation, aggregate road base material, concrete and abandoned utilities.

The Alder Creek restoration work would involve approximately 2,291 linear feet, including daylighting approximately 2,130 linear feet of buried culverts. Approximately 770 linear feet of the culverted portion of a south branch tributary to Alder Creek, known as Leatherwood Creek, would also be daylighted and restored. Construction of the restored creek channels are anticipated to require removal of fill, most of which would be transferred to the existing terraced area that would be developed into the Fiddleneck Field recreation area.

Long term, restoration of the deteriorated creek channel, while altering the existing visual character of the site, would serve to enhance the overall disturbed area in this sub-area benefiting the overall habitat and park visitor experience. Short-term impacts are not expected to affect the park visitor since the restoration and recreation development areas would be closed to protect visitor safety. Visual impacts to adjoining properties and travelers along Pinehurst Road would be limited due to the steep terrain and wooded character of the site area.

Project Area-wide Trails

Trail construction activities would cover approximately four miles of narrow, natural surface trails and closure and restoration of 0.6 miles of former trail. New trails would traverse a mix of California annual grassland, coyote brush scrub, oak woodland, riparian woodland, tree plantations, and developed/ruderal habitat, and would include a section adjacent to seasonal wetlands. Trails would be developed to contour alongside slopes (not the fall line of a slope) to minimize site impacts and sediment transport caused by fall line trails.

In general, trail construction work would consist of a four-foot wide trail footprint (permanent impact area) plus two feet on each side of the trail for a temporary work area. Low water crossings would be installed to provide stability and minimize channel bed erosion of the drainage crossings. The trails would be constructed using a combination of small, mechanized equipment and hand tools. Some brushing of shrubland habitat and disruption of grassland habitat would be involved in the trail construction work, but no trees would be removed along trail routes in woodland or riparian habitat and disturbance to understory vegetation would be limited to an average of four feet of temporary disturbance beyond the area of the trail bed during construction resulting in approximately 1.88 acres (82,098 square feet) of temporary impacts. Within the area of large groupings of eucalyptus, there are a significant number of downed trees. In this location, downed or smaller diameter standing trees in the trail alignment would be cut to accommodate a six-foot wide by ten-foot tall trail corridor.

As permanent disturbance to vegetation in these upland areas would be limited to an approximately one-acre area spread over the breath of the 1,381 Project area in a mix of

vegetation types, these trails would not be highly visible from mid and distance vantage points and would not result in an adverse effect on the visual character of the Project area. Moreover, specific to trail construction and modification, *Appendix B, Trail Construction and Trail Modification Best Management Practices* describes in detail the Best Management Practices that would be implemented to minimize adverse impacts to the parkland environment during trail construction, modification, and restoration activities. These measures would be effective in minimizing the potential visual impacts associated with trail development. Thus, with adherence to the required BMPs during construction project impacts would be *less than significant* and no mitigation is required for trail development.

Mitigation Measure AES-3-1: Recreation/Staging Area Units - Grading Plans

Prior to completion of final plans and specifications for improvements in the Recreation/Staging Units, the District shall review the grading plans to ensure that the new grades will minimize impacts on the surrounding environment. During construction grading techniques shall be employed to create natural appearing landforms and avoid excessive contrast between graded areas and existing surroundings. Completion of this measure shall be monitored and enforced by the District.

Significance after Mitigation: *Less than Significant.*

Mitigation Measure AES-3-2: McCosker Sub-area - Site Structure Design

The District shall require that new structures in the McCosker sub-area be finished in unobtrusive colors and materials that fit with the natural character of the surrounding area, as a means of minimizing potential effects to the visual characteristics of the site. Prior to completion of final plans and specifications, the District shall review these documents to ensure that new structures are designed to blend in with their surroundings to the extent practicable. Completion of this measure shall be monitored and enforced by the District.

Significance after Mitigation: *Less than Significant.*

Mitigation Measure AES-3-3: McCosker Sub-area - Construction Staging

The District shall require construction contractors to stage construction vehicles and equipment in designated staging areas outside the view area of the Pinehurst Road when not in use. Vehicles shall be kept clean and free of mud and dust before leaving the Project site (Refer to *Mitigation Measure AIR-2-1: Basic Construction Mitigation Measures*). Completion of this measure shall be monitored and enforced by the District.

Significance after Mitigation: *Less than Significant.*

Also refer to: **Mitigation Measure BIO2b: Project-wide - Habitat Mitigation to Mitigate for Temporary Impacts to Riparian Habitat**

d) Impact AES 4: The Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area (Less than Significant).

Because the nature of the Project area is contained within a District parkland preserve, the proposed improvements would not include new night lighting in the parking areas or along the trails. Materials used for fencing and structures for the Project would be designed to fit into the natural surrounding and would be non-reflective. New light sources could come from headlights from vehicles entering the campground parking area after dark. These uses would be intermittent and short term and limited to the vehicles with reservations entering the campsite area. Other sources of light could include campfires and flashlights associated with camping activities. These lighting sources would be confined to a small, 2.8-acre bowl in the McCosker sub-area that would not result in new sources of light extending into the surrounding area.

New sources of glare could result from the addition of new vehicle parking in the McCosker and Preserve sub-areas. The effects of glare from these vehicles would be limited to the immediate parking areas where this use is consistent with the District Master Plan designation of a Recreation/Staging Unit. The steep terrain and heavy woodland vegetation at these parking sites would prevent the effects of glare from vehicles to extending into the Natural Units or surrounding properties.

As a result, potential impacts related to night pollution and glare associated with the Project would be *less than significant* and no mitigation is required.

Mitigation: None required.

3.1.6 Cumulative Effects

Geographic Extent/Context

The geographic scope for the analysis of cumulative aesthetic impacts includes the local and regional roadways and highways, surrounding viewsheds that would have an effect on the visual character of the Project area, and viewpoints into the Project area that could be affected by the Project improvements. The site is bordered to the north by lands subject to the jurisdiction of EBMUD and Caltrans, to the east by the City of Orinda, to the south by unincorporated Contra Costa County, and to the west by the City of Oakland. The Project does not include elements that would have a significant adverse effect on a scenic vista or a scenic resource on any of these lands or the neighboring private properties. Moreover, lands surrounding the area are largely contiguous protected open space, so views from within the Project area should be remain intact and intimate views in the McCosker sub-area would be enhanced through the restoration and grading activities that would recontour sites previously used for a construction business to be better suited to recreation and interpretive activities.

Past, Present, and Reasonably Foreseeable Projects

Present and reasonably foreseeable projects identified in *Section 3.10, Land Use and Planning* are not anticipated to have an adverse effect on the Project. Likewise, the implementation of the Project is not anticipated to have a cumulative adverse impact on scenic resources on other projects in the area. The protection of 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve as open space containing a mix of woodland, shrub and grassland communities would contribute beneficially to the overall viewshed of the Bay Area and the Lafayette-Moraga-Orinda (LaMorinda) area. Therefore, cumulative impacts from the Project would be *less than significant*.

3.1.7 References

City of Orinda, 1987. Environmental Resources Element of the General Plan: City of Orinda.

Contra Costa County, 2005. Contra Costa County General Plan 2005-2020.

East Bay Regional Park District, 2016. *Ordinance 38 Rules and Regulations*. Revised April 2016.

East Bay Regional Park District, 2013. Master Plan 2013.

California Department of Transportation (Caltrans). c2017. Scenic Highways. Accessed March 2018. [http://www.dot.ca.gov/design/lap/livability/scenic-highways/]

3.2 Agriculture and Forestry Resources

This section describes laws, regulations, plans, and policies related to agriculture and forestry that may be relevant to the Project. Changes to woodland areas in the Project Area, including an unnamed perennial tributary, herein referred to as Alder Creek in this report, which joins San Leandro Creek and an upstream tributary, herein referred to as Leatherwood Creek, along with impacts and mitigations associated with the biological resources resulting from the Project construction activities are discussed in *Section 3.4, Biological Resources*.

3.2.1 Regulatory Framework

The following text summarizes federal, state, and regional and local regulations pertinent to the evaluation of the Project's impacts on agriculture and forestry resources.

Federal

There are no federal laws or regulations regarding agriculture and forestry resources that are applicable to the Project area.

State

The California Environmental Quality Act (CEQA); California Land Conservation Act of 1965 (Williamson Act); and portions of the California Public Resources Code (PRC) are the primary State mechanisms for defining agriculture and forestry resources in the Project area. Each is summarized below.

California Environmental Quality Act

CEQA requires that a determination be made as to whether impacts to agricultural or forest resources are significant environmental effects. Forest land (as defined in Public Resources Code § 12220(g)), timberland (as defined by Public Resources Code § 4526), and timberland zoned Timberland Production (as defined by Government Code § 51104(g)) are evaluated as forest resources.

California Farmland and Monitoring Program

The California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP) and classifies land into one of eight categories based on the land's suitability for agricultural production: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Lands, Water, and Other Lands.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, commonly known as the Williamson Act, allows for private landowners to be under contract with local governments to restrict specific parcels of land to agricultural or related open space use, and in turn receive lower property tax assessments.

Applicable Policies and Regulations of Agencies with Jurisdiction over the Project

City and county ordinances and general plan policies provide guidance on District parklands from planning through project implementation. Relevant city and county ordinances and general plan policies pertaining to agriculture and forestry resources in the Project area are described in *Table 3.2-1, City and County General Plan Agriculture and Forestry Goals and Policies.*

TABLE 3.2-1
CITY AND COUNTY GENERAL PLAN AGRICULTURE AND FORESTRY GOALS AND POLICIES

City of Oakland General Plan	Project Consistency
The 1996 Open Space, Conservation and Recreation (OSCAR) Element of the City of Oakland's General Plan details the early fruit orchards, farms, forests, and grazing lands of Oakland between the 1840s and 1880s. According to the OSCAR Element, virtually all the orchards and fields in the city were developed with housing, commerce, and industry between 1860 and 1945. As a response to the decline in plant and animal life, objectives and policies in the OSCAR Element aim to curb urban encroachment and protect native plant communities. Policies pertinent to agriculture and forestry resources include the following: **Policy CO-7.3:** Forested Character – Make every effort to maintain the wooded or forested character of tree-covered lots when development occurs on such lots. **Policy CO-7.4:** Tree Removal – Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons. **Policy CO-7.5:** Non-Native Plant Removal – Do not remove non-native plants within park and open space areas solely because they are non-natives. Plant removal should be related to other valid management policies, including fire prevention. **Policy CO-7.6:** Rehabilitation of damaged or dead vegetation – Encourage programs which rehabilitate, enhance, or replace damaged or dead vegetation as appropriate. **Objective CO-10:** Vegetation Management – To manage vegetation so that the risk of catastrophic wildfire is minimized.	A portion of the Project lies within the North Hills Planning District of the General Plan. Consistent with these policies, the Project area would be retained as parkland, thus urban development would not encroach into the Project area. Moreover, areas of forested cover would be retained and enhanced and vegetation would be managed to minimize wildfire in accordance with the District's *Wildfire Hazard Reduction and Resource Management Plan*.
Contra Costa County General Plan	**Project Consistency**
The Contra Costa County General Plan's Conservation Element (2005-2020) consists of goals and policies for the conservation of open space and agricultural resources. Range and pasture lands that provide grazing for large farm animals and dry farming of grains for feed have historically accounted for a large portion of total agricultural acreage in Contra Costa County. Due to the risk of subdivision of prime productive agricultural land into urban uses, Contra Costa County incorporated an Urban Limit Line (ULL) in 1990 and expanded it in 2006 to limit urban development to no more than 35 percent of the land in the County and requires that at least 65 percent be preserved for agriculture, open space, wetlands, parks, and other non-urban uses.	The Project area is not identified as important agricultural land in the Conservation Element. Portions of the Project area are identified as open space located outside of the ULL and a large portion of the Western Hills sub-area is within the ULL. The entire Project area would be retained as parkland consistent with the Contra Costa General Plan.

City of Orinda General Plan	Project Consistency
The 1987 General Plan for the City of Orinda contains guiding and implementing policies for agricultural and forestry resources within its Conservation Element in order to protect the semi-rural character of the city, which includes undeveloped ridgelines and hillsides, heavy tree cover and other natural vegetation, limited grading and disturbance of existing topography, unchanneled creeks and their associated plant and animal communities, and visible vacant land within and surrounding residential areas. Pertinent guiding and implementing policies include the following: 4.1.1 D – Preserve oak woodlands and other native trees, and encourage planning and reforestation of oaks and other natives in hillside areas.	Through pre-determined actions set forth in District Resolution No: 2006-1-14, District and Property Owner, OGLLC, 2008 First Amendment to Donation Agreement by and between the East Bay Regional Park District and Property Owner, OGLLC, the 2004 Second Supplemental EIR for the Montanera Project, and City of Orinda Resolution 13-05 this Project would be consistent with this policy.

East Bay Regional Park District

2013 District Master Plan

The 2013 District Master Plan defines the long-term vision for lands managed by the District. The Master Plan provides a decision-making framework, and identifies policies for achieving District-wide objectives. Development objectives, land use classifications, and planning and management guidelines are established by the Master Plan. The Master Plan includes policies for addressing agriculture and forestry resources as described in *Table 3.2-2, 2013 District Master Plan Agriculture and Forestry Goals and Policies* below.

TABLE 3.2-2
2013 DISTRICT MASTER PLAN AGRICULTURE AND FORESTRY GOALS AND POLICIES

Goals and Policies	Project Consistency
NRM6: The District will evaluate exotic eucalyptus, Monterey pine and cypress plantations, shrubland or woodland areas occurring along the wildland/urban interface on a case-by-case basis for thinning, removal and /or conversion to a les fire-prone condition, following the methods laid out in the Fuels Management Plan. The District will minimize the widespread encroachment of exotic and/or invasive species such as coyote brush, poison oak, and broom, etc. on parkland and work to preserve native plants where feasible.	Ongoing land management actions throughout the Project area that would continue into the future are directed at retaining woodland environments in their natural state to maintain water quality, biotic diversity, aesthetic values, and recreational opportunities. Management practices for oak and riparian woodland communities consist of conserving woodland areas for plant diversity. Exotic eucalyptus, Monterey pine and cypress plantations, shrubland or woodland areas occurring along the wildland/urban interface in the Project area would continue to be managed in accordance with the District's *Wildfire Hazard Reduction and Resource Management Plan* with the goal of reducing wildfire risk consistent with policy NRM6.
NRM7: The District will manage agricultural sites and cultivated areas in accordance with appropriate agricultural or landscaping practices and Integrated Pest management (IPM) methods to control noxious weed infestations, broom, and other invasive, non-native shrubs and to eventually replace these invasive plants with desirable native species.	Noxious weed infestations, broom, and other invasive, non-native shrubs in the Project area would continue to be managed in accordance with established Integrated Pest Management (IPM) methods.

2001 District Wildland Management Policies and Guidelines

The *2001 Wildland Management Policies and Guidelines* were developed to provide general guidance pertaining to the administration and stewardship of District parklands to ensure the proper use and enhancement of wildland resources. The policies and guidelines apply modern management practices to biological resources based on scientific principles supported by available research as summarized below:

- The District minimizes the widespread encroachment of coyote brush, poison oak, and broom on open grasslands through grazing, mechanical methods, prescribed burning, and/or chemical treatments, based on the specific needs of the park.
- The District implements site-specific grazing management practices under various circumstances, including the need to control or reduce agricultural pests.

Ordinance 38

The District's Ordinance 38, revised in April 2016, lists specific rules for the use and protection of District parklands. The ordinance regulates general use of the parks for the health and safety of the public. There are no rules or regulations within Ordinance 38 regarding agriculture and forestry resources that are applicable to the Project area.

Wildfire Hazard Reduction and Resource Management Plan

The *Wildfire Hazard Reduction and Resource Management Plan* guides the District's fuels management approach to reducing fire hazards on District-owned lands to an acceptable risk, maintaining and enhancing ecological values for plant and wildlife habitat, preserving aesthetic landscape values, and providing a vegetation management plan on a continuous basis. The following guidelines are relevant to agriculture and forestry resources:

- 1.2 – Evaluate and treat, as necessary, trees and shrubs on ridgetops along the wildland-urban interface (WUI) for fuel conditions and surrounding topography to reduce the potential for wildfire reaching the crowns of trees ("crowning") leading to burning materials and embers being carried long distances under high wind conditions and igniting additional fires well ahead of the main flame front.
- 1.5 – New treatment areas should focus on the location of vegetation types, particularly Eucalyptus and Monterey pine, associated with threats from torching and crown fires that cause ember flight. Strategies to further reduce the risk of wildfire hazards from eucalyptus trees include establishing 30 feet of sheltered reduction zone on either side of the road for strategic areas where highly flammable brush are adjacent to the road, removing any ladder fuels beneath the eucalyptus trees, such as loose bark and low hanging branches, to approximately 14 feet, and removing trees to thin dense stands of eucalyptus along roads to achieve a long-term goal of phased elimination.

3.2.2 Existing Conditions

The following text summarizes the existing physical setting of the Project area pertinent to the evaluation of the Project's impacts on agriculture and forestry resources.

California Annual Grassland Community

Existing grassland communities are maintained and improved by protecting and promoting growth of native grassland species with the goal of improving species diversity, wildlife richness, and habitat quality. Vegetation management grazing regimes are directed toward: 1) control of invasive weed species; 2) reduction of highly flammable fuel loads to reduce wildfire hazard; and 3) management for a heterogenous landscape.

Fire prevention and suppression activities are employed to protect public safety and to protect conservation values. To maximize benefits to this resource, fuel loads (grasses, weeds, and other vegetation) are maintained through a range of integrated pest management practices, including mowing, grazing, hand clearing, or a combination thereof.

Grazing leases issued by the District to manage grasslands address a number of factors including: range infrastructure (e.g., fences and water sources); kind and class of livestock; livestock carrying capacity and stocking rate; grass height and residual dry matter (RDM) per acre related to slope, season of use; special management practices and limitations, including restrictions on grazing in developed recreation areas, and feed and seasonal use restrictions to reduce re-introduction of non-native invasive plant species.

Existing grazing practices within the Project area incorporate a seasonal cow/calf grazing program that takes place between late November to mid-December and April/May (5-6 months) depending on range readiness, residual dry matter (RDM) factor, and developing climate factors. The overall vegetation goal of the grazing plan is to encourage native perennial grasses and native annual and perennial forbs while reducing/ controlling the cover of exotic weeds such as yellow star thistle and weedy, unpalatable annual grasses such as annual foxtail, medusahead, and ripgut brome. To manage non-native annual grasslands, the average fall RDM goal is 1,000 pounds/acre over 90 percent or greater of the field.

Where seeding for native grassland restoration efforts are involved, management tools can include grazing, fire, mechanical (mowing), chemical (application of herbicides), and biological methods that may incorporate the use of native herbivores. Grazing and recreational use may be deferred during seeding to promote plant establishment.

Oak and Riparian Woodlands

Woodland environments are retained in their natural state, whenever possible, to maintain water quality, biotic diversity, aesthetic values, and recreational opportunities. Management practices for Oak and Riparian Woodland communities consist of conserving woodland areas for plant diversity.

Riparian vegetation management actions to maintain native dominance and manage around infrastructure and recreational opportunities can include a variety of tools, as appropriate to the site conditions: prescribed fire, mechanical treatments, firebreaks, and active management to encourage oak regeneration. Oak regeneration methods include: releasing seedlings from competing vegetation, or planting acorns and seedlings from local genetic stock. A variety of

hand tools and motorized, mechanical tools may be used for cutting, grubbing, and mowing dependent on vegetation type. Motorized mechanical vegetation controls are employed from top of bank of creek channels and drainages to minimize riparian impacts. Select herbicides may be used to control particularly difficult noxious and invasive weeds, under the supervision of the Integrated Pest Management Department. Volunteers may be used under the supervision of park staff to control invasive plants by hand pulling, grubbing and cutting.

Grazing within Oak and Riparian Woodlands is managed through a seasonal cow/calf plan designed specifically to maintain habitats for special status species such as California red-legged frogs (CRLFs) that are known to use coastal oak woodlands as upland refugia. Seasonal (winter spring) grazing reduces annual grass competition for young oaks and removes the potential herbivory on the oaks in the summer and fall. The minimum average fall RDM goal is 800 pounds/acre on flat areas, and higher on slopes to equate to an average of 1,000 pounds/acre.

Preserve Sub-area - Plantations of Pine and Eucalyptus Trees

Red gum (*Eucalyptus camaldulensis*) and blue gum (*Eucalyptus globulus*) eucalyptus originally planted in early 1900s are present as maverick trees and in large groupings or "plantations." Eucalyptus plantations occur in both Thornhill Canyon and the main unit of the Preserve Sub-area. Large blocks of these trees stand along the east boundary below Round Top, on the top of the knoll west of the water tank, on the western slopes and at the bottom of the drainage below the park entry. The rapid growth to a height of 80 to 140 feet and high rate of reproduction of these eucalyptus trees have resulted in their complete dominance in large portions of the Preserve Sub-area, especially near Round Top. Monterey pine (*Pinus radiata*), were also planted in early 1900s and presently occur as mature groves of varying densities throughout the Preserve Sub-area and on Skyline Road northwest of the main entrance along with cypress trees (*Cupressaceae spp*.).

McCosker Sub-area - Kitchen Orchard and Plant Nursery

Remnants of a small "kitchen orchard" remain at the base of the slope leading up to Fiddleneck Field, the site of the proposed camping and day-use facilities. This orchard includes fig, peach, apple, and citrus trees.

Remnants of a former nursery operation are found in the lower terrace of proposed recreation area. The remaining vegetation generally consists of remnant, declining ornamental trees and ruderal grasslands.

3.2.3 Research Methodologies

Analysis of the potential impacts associated with the Project on agriculture and forestry resources was based on the review of state guidelines and local general plan policies pertinent to agriculture and forestry resources, an evaluation of current and proposed uses of the Project area, and the Project area's farmland classifications per the FMMP.

To determine whether Project activities would have a significant adverse environmental impact on agricultural resources, the California Agricultural Land Evaluation and Site Assessment Model

(1997) prepared by the California Department of Conservation was referenced as a model in assessing impacts on agriculture and farmland.

To determine whether Project activities would have a significant adverse environmental impact on forest resources, including timberland, the following assessment tools were uses as the basis of analysis: 1) information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and 2) forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

3.2.4 Significance Thresholds

The Project would have a significant environmental impact on agricultural or forestry resources under CEQA if it would meet any of the following applicable thresholds that are based on Appendix G, Section II of the CEQA guidelines:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

d) Result in the loss of forest land or conversion of forest land to non-forest use.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Based on the FMMP, no portion of the Project area is designated as prime farmland, unique farmland, or farmland of statewide importance. The Project area consists of either Grazing Land on which existing vegetation is suited to the grazing of livestock, or Other Land not included in any other mapping category. This typically includes low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded by urban development and greater than 40 acres is also considered Other Land. Based on the Farmland Mapping and Monitoring Program, Project implementation would not convert any farmland to non-agricultural use. As no portion of the Project area is designated as prime farmland, unique farmland, or farmland of statewide importance, the Project would have no impact on important farmland and this criterion is not discussed further in this EIR.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract. Based on a review of the Williamson Act map depicting lands under Williamson Act contracts for Contra Costa and Alameda Counties, the Project area is not under any Williamson Act contracts, and Project implementation would not conflict with any Williamson Act contract. Thus, implementation of the Project would not interact with, or conflict with, existing agricultural zoning or a Williamson Act contract. Thus, this criterion is not discussed further in this EIR.

c) Conflict with existing zoning for, or cause rezoning of, forest land) or timberland. In accordance with the timberland guidelines compiled by the California Department of Forestry and Fire Protection the California Air Resources Board, the Project area is not zoned as forest land or timberland, and there are no forests in the Project area. As such, no impact on forest land or timberland would occur with implementation of the Project and this criterion is not discussed further in this EIR.

d) Loss of forest land or conversion of forest land. As stated above, the Project area is not zoned as forest land and there are no forests on the Project area. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest uses and this criterion is not discussed further in this EIR.

e) Conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. The Project area does not contain farmland and there are no aspects of the Project that would affect any identified agricultural land off-site. Moreover, the Project site does not contain state designated forest land and there are no aspects of the Project that would affect any identified forest land off-site. Thus, implementation of the Project would not result in conversion of farmland, on-site or off-site, to a non-agricultural use, nor would it result in conversion of forest land to non-forest use. Thus, this criterion is not discussed further in this EIR.

3.2.5 Impact Analysis

Significant Impacts

Based on the FMMP, no portion of the Project area is designated as prime farmland, unique farmland, or farmland of statewide importance, nor is the Project area under any Williamson Act contracts and there are no aspects of the Project that would affect any identified agricultural land off-site. The Project area is not zoned as forest land or timberland. In addition, the Project site does not contain state designated forest land and there are no aspects of the Project that would affect any identified forest land off-site. Moreover, a long-term benefit is anticipated through the restoration, establishment, and enhancement of approximately four acres of riparian woodland habitat in the McCosker sub-area. Therefore, the Project would not have a significant environmental impact on agricultural or forestry resources under any of the applicable thresholds in *Appendix G* of the CEQA guidelines. As a result, there is *no potential for adverse impacts related to agriculture and forestry resources* and no mitigation would be required.

Mitigation: None required.

3.2.6 Cumulative Effects

Geographic Extent/Context

The Project area is not identified as important agricultural or forestry lands, though it does include grassland and woodland habitats that would continue to be managed as open space lands to benefit covered species, natural communities, biological diversity, and ecosystem function, including: 1) enhancing grassland to promote native biological diversity and habitat through continuation of ongoing grazing and integrated pest management programs; and 2) retaining woodland environments in their natural state, whenever possible, to maintain water quality, biotic diversity, aesthetic values, and recreational opportunities consistent with values identified in adjacent jurisdictions' general plan policies. Additionally, Project elements in the McCosker sub-area would re-establish riparian habitat lost during construction activities in the 1950s and 1960s resulting in a long-term increase in woodland habitat in the East Bay Hills. Thus, the Project would have *no adverse impacts* on the agricultural or forestry lands in the geographic region.

Past, Present, and Reasonably Foreseeable Projects

Present and reasonably foreseeable projects identified in *Section 3.10, Land Use and Planning* are not anticipated to have an adverse effect on the Project. Likewise, the implementation of the Project is not anticipated to have a cumulative adverse impact on agricultural or forestry lands on other projects in the area. The protection of 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve as open space containing a mix of woodland, shrub and grassland communities would contribute beneficially to the overall open space values in the region. Thus, the Project would have *no adverse cumulative impacts* on agricultural and forestry resources.

3.2.7 References

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3.3 Air Quality

This section has been prepared using the methodologies and assumptions contained in the Bay Area Air Quality Management District's (BAAQMD) CEQA Air Quality Guidelines.[1] In keeping with these guidelines, this section describes existing air quality and the regulatory framework for air quality. The section also describes the potential effects of the Project on air quality, including the effects of construction and operational traffic associated with the Project on regional pollutant levels and health risks. Mitigation measures to reduce potentially significant air quality impacts are identified, where appropriate.

3.3.1 Regulatory Framework

The following discussion provides an overview of existing air quality conditions in the region and in the County of Contra Costa City of Orinda, and City of Oakland. Ambient air quality standards and the regulatory framework are summarized and climate, air quality conditions, and typical air pollutant types and sources are also described.

Air Pollutants and Health Effects

Both State and federal governments have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O_3 and NO_2, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and Pb are considered local pollutants that tend to accumulate in the air locally.

The primary pollutants of concern in the Project area are O_3, CO, and PM. Significance thresholds established by an air district are used to manage total regional and local emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual development projects that would contribute to regional and local emissions and could adversely affect or delay the air basin's projected attainment target goals for nonattainment criteria pollutants.

Because of the conservative nature of the significance thresholds, and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and reactive organic gases (ROG).

[1] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

Air pollutants and their health effects, and other air pollution-related considerations are summarized in *Table 3.3.1, Sources and Health Effects of Air Pollutants* and are described in more detail below.

TABLE 3.3-1
SOURCES AND HEALTH EFFECTS OF AIR POLLUTANTS

Pollutants	Sources	Primary Effects
Ozone (O_3)	• Precursor sources[a]: motor vehicles, industrial emissions, and consumer products.	• Respiratory symptoms. • Worsening of lung disease leading to premature death. • Damage to lung tissue. • Crop, forest, and ecosystem damage. • Damage to a variety of materials, including rubber, plastics, fabrics, paints, and metals.
Particulate Matter Less than 2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death. • Hospitalization for worsening of cardiovascular disease. • Hospitalization for respiratory disease. • Asthma-related emergency room visits. • Increased symptoms, increased inhaler usage.
Particulate Matter Less than 10 Microns in Aerodynamic Diameter (PM_{10})	• Cars and trucks (especially diesels). • Fireplaces, woodstoves. • Windblown dust from roadways, agriculture, and construction.	• Premature death and hospitalization, primarily for worsening of respiratory disease. • Reduced visibility and material soiling.
Nitrogen Oxides (NO_x)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Lung irritation. • Enhanced allergic responses.
Carbon Monoxide (CO)	• Any source that burns fuels such as cars, trucks, construction and farming equipment, and residential heaters and stoves.	• Chest pain in patients with heart disease. • Headache. • Light-headedness. • Reduced mental alertness.
Sulfur Oxides (SO_x)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits.
Lead (Pb)	• Contaminated soil.	• Impaired mental functioning in children. • Learning disabilities in children. • Brain and kidney damage.
Toxic Air Contaminants	• Cars and trucks (especially diesels). • Industrial sources, such as chrome platers. • Neighborhood businesses, such as dry cleaners and service stations. • Building materials and products.	• Cancer. • Reproductive and developmental effects. • Neurological effects.

SOURCE: California Air Resources Board (CARB), 2018.
[a] Ozone is not generated directly by these sources. Rather, chemicals emitted by these precursor sources react with sunlight to form ozone in the atmosphere.

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_x. The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Carbon Monoxide

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. CO transport is limited - it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

Particulate Matter

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM_{10} for particles less than 10 microns in diameter and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the Bay Area, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad, tire wear, and entrained road dust. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (CARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children. The CARB also reports that Statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for

cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.[2]

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide

SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U. S. Environmental Protection Agency (USEPA) established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPAs regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Odors

Odors are also an important element of local air quality conditions. Specific activities can raise concerns related to odors on the part of nearby neighbors. Major sources of odors include restaurants and manufacturing plants. Other odor producers include the industrial facilities within the region. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally-produced odors often exceeds regulatory thresholds.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. Some examples of TACs include: benzene, butadiene,

[2] California Air Resources Board, 2009. *Air Pollution – Particulate Matter Brochures*. Website: www.arb.ca.gov/html/brochure/pm10.htm (accessed April 20, 2018). October.

formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the USEPA and CARB. In 1998, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. CARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines.[3] High volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

The BAAQMD regulates TACs using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.[4] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventories of TACs help the BAAQMD determine health risk to Bay Area residents.

Ambient monitoring concentrations of TACs indicate that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over 50 percent of the average calculated cancer risk from ambient air in the Bay Area.[5] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has been reduced to 143 in 1,000,000; however, this risk does not include the risk resulting from exposure to diesel particulate matter or other compounds not monitored.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources – primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as trucks and buses traveling on freeways and local roadways. Agricultural and

3 California Air Resources Board, 2000. *Fact Sheet – California's Plan to Reduce Diesel Particulate Matter Emissions.* Available online at: www.arb.ca.gov/diesel/factsheets/rrpfactsheet.pdf (accessed April 20, 2018). October.

4 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

5 Bay Area Air Quality Management District, 2015. *Toxic Air Contaminant Control Program Annual Report, Volume 1.* Website: www.baaqmd.gov/research-and-data/air-toxics/annual-report (accessed April 20, 2018). May.

mining equipment is not commonly used in urban parts of the Bay Area, while construction equipment typically operates for a limited time at various locations. As a result, the readily identifiable locations where diesel particulate matter is emitted in the Bay Area include high-traffic roadways and other areas with substantial truck traffic.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[6] CARB's Diesel Risk Reduction Plan is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines. The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. CARB anticipates that by 2020 average Statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the Diesel Risk Reduction Plan, meaning that the Statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000. It is likely that the Bay Area cancer risk from diesel particulate matter will decrease by a similar factor by 2020.

High Volume Roadways

Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics.

Federal

United States Environmental Protection Agency

At the federal level, the USEPA has been charged with implementing national air quality programs. USEPA’s air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required USEPA to establish primary and secondary NAAQS and required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically

6 Ibid.

modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. USEPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the USEPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The USEPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the USEPA on suspected hazardous pollutants prior to regulatory development.

State

California Air Resources Board

CARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

CARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. CARB combines this data and submits the completed SIP to USEPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. CARB's Diesel Risk Reduction Plan[7] is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.

Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the CARB also created guidance for avoiding air quality conflicts in land

[7] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. Prepared by the Stationary Source Division and Mobile Source Control Division. Available online at: www.arb.ca.gov/diesel/documents/rrpFinal.pdf (accessed April 20, 2018). October.

use planning in its Air Quality and Land Use Handbook: A Community Health Perspective.[8] In its guidance, CARB advises that new sensitive uses (e.g., residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

CARB guidance suggests that the use of these guidelines be customized for individual land use decisions, and take into account the context of development projects. The Air Quality and Land Use Handbook specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

National and State Ambient Air Quality Standards

Pursuant to the FCAA of 1970, the USEPA established NAAQS. The NAAQS were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Both the USEPA and the CARB have established ambient air quality standards for the following common pollutants: CO, O_3, NO_2, SO_2, Pb, and PM. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants that avoid specific adverse health effects associated with each pollutant.

Federal standards include both primary and secondary standards. Primary standards establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings.[9] State and federal standards for the criteria air pollutants are listed in *Table 3.3-2, Federal and State Ambient Air Quality Standards.*

8 California Environmental Protection Agency and California Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* Available online at: www.arb.ca.gov/ch/handbook.pdf (accessed April 20, 2018). April.

9 U.S. Environmental Protection Agency, 2017. Website: www.epa.gov/criteria-air-pollutants (accessed April 20, 2018). October.

TABLE 3.3-2
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[f]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	-		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9.0 ppm (10 mg/m^3)	-	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		20 ppm (23 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		-	-	
Nitrogen Dioxide (NO_2)[i]	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m^3)	Same as Primary Standard	High-Volume Sampler and Atomic Absorption
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	-	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m^3	Atomic Absorption	-	-	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m^3 (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average	-		0.15 µg/m^3		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	-	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline method)
	3-Hour	-		-	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	-	
	Annual Arithmetic Mean	-		0.030 ppm (for certain areas)[k]	-	
Visibility-Reducing Particles[l]	8-Hour	See footnote n	Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards		

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[f]
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Choride[j]	24-Hour	0.01 ppm 0.02 (26 µg/m^3)	Gas Chromatography			

NOTES:
[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.
[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[g] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.
[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm
[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
[j] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
[k] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
[l] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
[n] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
CARB = California Air Resources Board
USEPA = United States Environmental Protection Agency
ppb = parts per billion
ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

SOURCE: California Air Resources Board, 2016. https://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Local Ordinances and Policies

Bay Area Air Quality Management District

The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

BAAQMD Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds.[10] This regulation limits the "discharge of any odorous substance which causes the ambient air at or beyond the property line…to be odorous and to remain odorous after dilution with four parts of odor-free air." The BAAQMD must receive odor complaints from ten or more complainants within a 90-day period in order for the limitations of this regulation to go into effect. If this criterion has been met, an odor violation can be issued by the BAAQMD if a test panel of people can detect an odor in samples collected periodically from the source.

Clean Air Plan

The Clean Air Plan[11] guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., ROG and NO_x), particulate matter and greenhouse gas emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD's plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve greenhouse gas (GHG) reduction targets; and
- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super-GHGs" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

10 Bay Area Air Quality Management District, 1982. *Rules and Regulations, Regulation 7: Odorous Substances.* March.

11 Bay Area Air Quality Management District, 2017. *Final 2017 Clean Air Plan.* Available online at: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed April 20, 2018). April 19.

BAAQMD CARE Program

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that include an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TACs, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area.

For commercial and industrial sources, the BAAQMD regulates TACs using a risk-based approach that determines the sources and pollutants to control as well as the degree of control. A health risk assessment (HRA) is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, to provide a quantitative estimate of health risks.[12] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. The BAAQMD has identified seven impacted communities; portions of Contra Costa County have been identified as an affected community.

BAAQMD CEQA Air Quality Guidelines

The BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions.

In June 2010, BAAQMD adopted updated draft CEQA Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The 2017 CEQA Guidelines include thresholds to evaluate project impacts to protectively evaluate the

[12] In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the project.

City and County General Plan Policies

City and county general plan policies provide guidance on District parklands from the planning phases through project implementation. The City of Oakland includes policies related to air quality in the Open Space Conservation and Recreation element of the City's General Plan. Contra Costa County addresses air quality in the Conservation Element of the General Plan. Goals, policies, and implementation measures are listed in the Conservation Element are designed to achieve desired improvements to air quality through proper planning for land use and transportation. The City of Orinda addresses air quality in the Conservation Element of the General Plan. The Conservation Element identifies locally high levels of carbon monoxide due to congestion on Highway 24 as the primary air quality concern. The Conservation Element determined that growth under the General Plan is likely to contribute only a very small proportion of the addition trips on Highway 24 and therefore General Plan policies can do little to influence air quality in the area. Relevant city and county general plan policies pertaining to air quality in the Project area are described in *Table 3.1-3, City and County Air Quality Goals and Policies*.

TABLE 3.3-3
CITY AND COUNTY GENERAL PLAN AIR QUALITY GOALS AND POLICIES

City of Oakland General Plan	Project Consistency
Improve the environment: Improve air quality and reduce exposure to traffic noise	The Project promotes energy conservation programs, including solar and added bike parking and add electric recharging stations to encourage a reduction in petroleum emissions and vehicle traffic noise when accessing the Project area
Encourage Alternative Means of travel	The expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities for pedestrian, as well as equestrians and bicyclists to encourage alternate modes of travel to the Project area
Policy T3.5: The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible.	The Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities, including multi-day treks through the East Bay Hills and considers access to transit
Contra Costa General Plan	**Project Consistency**
Goal 8-AA: To meet Federal Air Quality Standards for all air pollutants.	The Project would be consistent with or not conflict with Federal Air Quality Standards
Goal 8-AB: To continue to support Federal, State and regional efforts to reduce air pollution in order to protect human and environmental health.	While the Project may generate a minimal amount of energy source emissions, it would not exceed pollutant thresholds established by the BAAQMD
Goal 8-AD: To reduce the percentage of Average Daily Traffic (ADT) trips occurring at peak hours.	Peak Project trips would generally occur during weekends and non-peak work hours. Additionally, the Project would add access points convenient to local neighborhoods and would incorporate secured bicycle storage facilities to facilitate bike use when combined with connections to regional bike routes and trails to encourage alternate modes of travel to the Project area

Policy 8-98: Development and roadway improvements shall be phased to avoid congestion.	The Project does not include roadway improvements. Construction related traffic impacts in the McCosker would take into account peak traffic associated with the Canyon School
Policy 8-101: A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.	The Project area would offer opportunities to connect to popular on-street bicycle routes identified in city and county bike planning documents, as well as regional trails depicted in the District Master Plan.
Contra Costa General Plan (continued)	**Project Consistency**
Policy 8-102: A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.	The expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities for pedestrian, as well as equestrians and bicyclists
Policy 8-103: When there is a finding that a proposed project might significantly affect air quality, appropriate mitigation measures shall be imposed.	The Air Quality analysis includes mitigations for short term emissions associated with construction of the project improvements
Policy 8-104: Proposed projects shall be reviewed for their potential to generate hazardous air pollutants.	The Air Quality analysis considers the Project's potential to generate hazardous air pollutants and provides mitigations as appropriate
Policy 8-105: Land uses which are sensitive to air pollution shall be separated from sources of air pollution.	The Project Area is located in an open space area away from any major sources of pollutant emissions.
Implementation Measure 8-dp: Review proposed development to encourage maximum use of bicycle, pedestrian and transit modes of transportation.	The Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities, including multi-day treks through the East Bay Hills and considers access to transit
City of Orinda	**Project Consistency**
Guiding Policy N: Promote energy conservation programs and practices.	The Project promotes energy conservation programs, including solar and added bike parking and add electric recharging stations to encourage a reduction in petroleum emissions when accessing the Project area
Implementing Policy J: Encourage the conservation of energy through the promotion of solar design, and recycling of newspaper, aluminum and bottles. Provisions should be made to allow for a conveniently located and screened recycling area in the downtown.	The Project promotes energy conservation programs, including solar and added bike parking and add electric recharging stations to encourage a reduction in petroleum emissions when accessing the Project area. In addition, the District has adopted a sustainably policy to encourage recycling and reduce solid waste ending up in landfills

East Bay Regional Parks

District Master Plan Policies

The EBRPD's 2013 Master Plan contains policies for achieving the highest standards of service in resource conservation, management, interpretation, public access, and recreation. The goal of the Master Plan is to maintain a careful balance between the need to protect and conserve resources and the need to provide opportunities for recreational use of the parklands. The Master Plan also contains the following policies relating to providing parking and trailheads at convenient locations, which are applicable to the Project. In addition, the Master Plan contains policies that support the ability of visitors to use alternative modes of transportation. The Master Plan does not have specific policies related to air quality.

3.3.2 Existing Conditions

The following provides a discussion of the local and regional air quality and climate in the Project area.

Attainment Status

The CARB is required to designate areas of the State as attainment, nonattainment or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A *nonattainment* designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data does not support either an attainment or nonattainment status. The California Clean Air Act divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA also designates areas as attainment, nonattainment, or classified. *Table 3.3-4, San Francisco Bay Area Basin Attainment Status* provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

TABLE 3.3-4
SAN FRANCISCO BAY AREA BASIN ATTAINMENT STATUS

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Concentration	Attainment Status	Concentration[c]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (17 µg/m^3)	Nonattainment[h]	0.075 ppm	Nonattainment[d]
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	Not Applicable[e]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 µg/m^3)	Attainment	9 ppm (10 µg/m^3)	Attainment[f]
	1-Hour	20 ppm (23 µg/m^3)	Attainment	35 pm (40 µg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.1 ppm 0.2 (339 µg/m^3)	Attainment	0.100 ppm	Unclassified
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Not Applicable	0.053 ppm (100 µg/m^3)	Attainment
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	Attainment
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m^3)	Attainment[i]

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Concentration	Attainment Status	Concentration[c]	Attainment Status
Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Nonattainment[g]	Not Applicable	Not Applicable
	24-Hour	12 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Nonattainment[g]	15 µg/m^3	Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3[i]	Nonattainment

NOTES:

a California standards for ozone, carbon monoxide (except in the Lake Tahoe air basin), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter – PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, 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 PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on average. The Lake Tahoe CO standard is 6.0 ppm, a level one-third the national standard and two-thirds the State standard.

b National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a 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 1. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/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 PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially-designed clusters of sites falls below the standard.

c National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety.

d In June 2004, the Bay Area was designated as a marginal nonattainment area for the national 8-hour ozone standard. USEPA lowered the national 8-hour ozone standard from 0.80 to 0.75 PPM (i.e., 75 ppb), effective May 27, 2008.

e The national 1-hour ozone standard was revoked by USEPA on June 15, 2005.

f In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

g In June 2002, CARB established new annual standards for PM2.5 and PM10.

h The 8-hour California ozone standard was approved by the CARB on April 28, 2005 and became effective on May 17, 2006.

i On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This USEPA rule suspends key SIP requirement 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 $PM_{2.5}$ standard until such time as the Air District submits a redesignation request and a maintenance plan to USEPA and USEPA approves the proposed redesignation.

j On June 2, 2010, the USEPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS, however, must be used until one year following USEPA initial designations of the new 1-hour SO_2 NAAQS.

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.
ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

SOURCE: Bay Area Air Quality Management District

Existing Climate and Air Quality

Contra Costa County lies east of the San Pablo Bay, bounded by Alameda County to the south, San Joaquin County to the east, and Solano and Sacramento counties to the north.

Temperatures in and around the San Ramon and Diablo Valleys are warm in the summer and cool in the winter, largely because of their distance from the moderating effect of water bodies and because the California Coast Range blocks marine air flow into the valleys. The Carquinez Strait region remains temperate due to its proximity to water and oceanic air flows. In winter, average daily temperatures are mild, with tule fog common at night. Average summer temperatures are typically mild overnight and warm during the day, with cooler temperatures and stronger winds

more common along the western coast. Wind speeds are generally low throughout the region and winds typically blow from northwest to southwest. However, strong afternoon gusts are common in the northern portion of the county around the Carquinez Strait. Annual rainfall averages between 18 and 23 inches across the county.[13]

Ozone and fine particle pollution, or $PM_{2.5}$, are the major regional air pollutants of concern in the San Francisco Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter. Ozone and $PM_{2.5}$ infrequently exceed health standards in the portion of Contra Costa County west of the East Bay hills. The San Francisco Bay keeps air temperatures above freezing in winter and well below 100 degrees on even the warmest summer days.[14]

In eastern Contra Costa County, summer afternoon temperatures frequently approach triple digits, spurring ozone levels to exceed health standards. In winter, $PM_{2.5}$ can be transported westward through the Carquinez Strait from the Central Valley where it adds to wood smoke, causing health standards to be exceeded.[15]

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the Bay Area still exceeds the State standard for 1-hour ozone as well as the State and federal 8-hour standards. Levels of PM_{10} have exceeded State standards two of the last three years, and the area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM_{10} standard.

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

Air Quality Monitoring Results

Air quality monitoring stations are located throughout the nation and maintained by the local air pollution control district and state air quality regulating agencies. Ambient air data collected at

[13] BAAQMD, 2016. *Contra Costa County Climate*. April 25.
[14] Ibid.
[15] Ibid.

permanent monitoring stations are used by the USEPA to identify regions as attainment or nonattainment depending on whether the regions met the requirements stated in the primary NAAQS. Attainment areas are required to maintain their status through moderate, yet effective air quality maintenance plans. Nonattainment areas are imposed with additional restrictions as required by the USEPA. In addition, different classifications of attainment such as marginal, moderate, serious, severe, and extreme are used to classify each air basin in the state on a pollutant-by-pollutant basis. Different classifications have different mandated attainment dates and are used as guidelines to create air quality management strategies to improve air quality and comply with the NAAQS by the attainment date. A region is determined to be unclassified when the data collected from the air quality monitoring stations do not support a designation of attainment or nonattainment, due to lack of information, or a conclusion cannot be made with the available data.

Pollutant monitoring results for the years 2014 to 2016 at the Concord – 2975 Treat Boulevard ambient air quality monitoring station, shown in *Table 3.3-5, Ambient Air Quality at the Concord -2975 Treat Boulevard Monitoring Station*, indicate that air quality in Contra Costa County has generally been good. As indicated in the monitoring results, one violation of the 1-hour State ozone standard was recorded in 2014 and 2016. The State 8-hour ozone standard was exceeded twice in 2014, four times in 2015, and twice in 2016. In addition, the federal 8-hour ozone standard was exceeded twice in 2014, 2015, and 2016. The CO, PM_{10}, $PM_{2.5}$, NO_2, and SO_2 standards were not exceeded in this area during the 3-year period.

TABLE 3.3-5
AMBIENT AIR QUALITY AT THE CONCORD – 2975 TREAT BOULEVARD MONITORING STATION

Pollutant	Standard	2014	2015	2016
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		1.4	.4	1.2
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.1	1.3	1.0
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.095	0.088	0.095
Number of days exceeded:	State: > 0.09 ppm	1	0	1
Maximum 8-hour concentration (ppm)		0.081	0.074	0.075
Number of days exceeded:	State: > 0.07 ppm	2	4	2
	Federal: > 0.08 ppm	2	2	2
Coarse Particulates (PM_{10})				
Maximum 24-hour concentration (µg/m^3)		42.5	24.0	19.0
Number of days exceeded:	State: > 50 µg/m^3	0	0	0
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		14.1	13.1	11.5

Pollutant	Standard	2014	2015	2016
Exceeded for the year:	State: > 20 µg/m^3	No	No	No
	Federal: > 50 µg/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m^3)		30.6	31.0	20.7
Number of days exceeded:	Federal: > 3 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		6.7	8.8	6.1
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 12 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.048	0.033	0.033
Number of days exceeded:	State: > 0.0250 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.008	0.007	0.006
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration (ppm)		0.0029	0.00067	0.0011
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3-hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.50 ppm	ND	ND	ND
Maximum 24-hour concentration (ppm)		0.00045	0.0002	0.00024
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.00045	0.000052	0.000077
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

NOTES:
ppm = parts per million
µg/m3 = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.

SOURCE: USEPA, 2017

3.3.3 Research Methodologies

Numerous air quality modeling tools are available to assess air quality impacts of projects; however, certain air districts such as the BAAQMD have created guidelines and requirements to conduct air quality analysis. The analysis of air quality impacts for the Project followed the BAAQMD *CEQA Air Quality Guidelines*.[16]

In June 2010, BAAQMD adopted updated draft California Environmental Quality Act (CEQA) Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The 2017 CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the project.

Operational Emissions

The air quality analysis includes estimating emissions associated with long-term operation of the proposed Robert Sibley Volcanic Preserve Land Use Plan Amendment (LUPA) project within the East Bay Regional Park District (EBRPD or Park District). Criteria pollutants with regional impacts would be emitted by mobile (indirect) sources associated with the Project. In addition, localized air quality impacts (i.e., higher carbon monoxide concentrations or "hot spots") near intersections or roadway segments in the project vicinity would potentially occur due to project generated vehicle trips.

Consistent with BAAQMD guidance for estimating emissions associated with land use development projects, the California Emission Estimator Model (CalEEMod v.2016.3.2) was used to calculate the long-term operational emissions associated with the project.

Construction Emissions

Construction activities can generate a substantial amount of air pollution. In some cases, the emissions from construction represent the largest air quality impact associated with a project. Construction activities are considered temporary; however, short term impacts can contribute to exceedances of air quality standards. Construction activities include site preparation, earthmoving and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel and gasoline powered equipment, portable auxiliary equipment, and worker commute trips. CalEEMod was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site.

16 Bay Area Air Quality Management District, 2017, op. cit.

3.3.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G Section XVI, a project would have a significant adverse air quality impact if project-generated pollutant emissions would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under applicable federal or state ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

The BAAQMD has further defined these criteria of significance to indicate the project would result in a significant air quality impact if it would:

- Violate the BAAQMD's air quality standards or contribute substantially to an existing or projected air quality violation by:
  - Generating average daily criteria air pollutant emissions of ROG, NO_x or $PM_{2.5}$ exhaust emissions in excess of 54 pounds per day or PM_{10} exhaust emissions of 82 pounds per day during project construction;
  - For project operations, generating average daily criteria air pollutant emissions of ROG, NO_x, or $PM_{2.5}$ in excess of 54 pounds per day, or maximum annual emissions of 10 tons per year. For emissions of PM_{10}, generating average daily emissions of 82 pounds per day or 15 tons per year; or
  - Contributing to CO concentrations exceeding the State ambient air quality standards of 9 ppm averaged over 8 hours and 20 ppm for 1-hour for project operations.
- Expose sensitive receptors including residential areas or the general public to toxic air contaminants in excess of the following thresholds:
  - An excess cancer risk level of more than 10 in one million, or non-cancer (i.e., chronic or acute) risk greater than 1.0 hazard index from a single source;
  - An incremental increase of greater than 0.3 $\mu g/m^3$ annual average $PM_{2.5}$ from a single source;
  - An excess cancer risk level of more than 100 in one million, or non-cancer risk greater than 100 in one million from all sources; or
  - An incremental increase of greater than 0.8 $\mu g/m^3$ annual average $PM_{2.5}$ from all sources.

It should be noted that the emission thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of

safety, these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

3.3.5 Impact Analysis

a) Impact AIR-1: The Project would not conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant)

The applicable air quality plan is the BAAQMD's 2017 Clean Air Plan, which was adopted on April 19, 2017. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. Consistency with the Clean Air Plan can be determined if the project does the following: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

Stationary Source Control Measures. The stationary source measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD's Permit and Inspection programs. Since implementation of the Project would not include any stationary sources, the Stationary Source Measures of the Clean Air Plan are not applicable.

Transportation and Mobile Source Control Measures. The BAAQMD identifies control measures as part of the Clean Air Plan to reduce ozone precursor emissions from stationary, area, mobile, and transportation sources. The Transportation Control Measures are designed to reduce emissions from motor vehicles by reducing vehicle trips and vehicle miles traveled (VMT) in addition to vehicle idling and traffic congestion. Implementation of the Project would add 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer day use spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The project would also include approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles. Therefore, the Project would support the ability of visitors to use alternative modes of transportation. In addition, portions of the project site are located within walking or cycling distance from the surrounding residential area. Therefore, this Project would not conflict with the identified Transportation and Mobile Source Control Measures of the Clean Air Plan.

Energy Control Measures. The Clean Air Plan also includes Energy and Climate Control Measures, which are designed to reduce ambient concentrations of criteria pollutants and reduce emissions of CO_2. These measures are intended to promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the "urban heat island" effect by increasing reflectivity of roofs and parking lots, and promote the planting of (low-volatile organic compound (VOC)-emitting) trees to reduce biogenic emissions, lower air temperatures, provide shade, and absorb air pollutants. The measures include voluntary approaches to reduce the heat island effect by increasing shading in urban and suburban areas

through the planting of trees. As discussed above, the Project would include approximately 22.1 miles of new trails. The Project would also include 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer day use spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The Project would not substantially increase ambient concentrations of criteria pollutants or emissions of CO_2. Therefore, the project would not conflict with the Energy and Climate Control Measures.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The Project would expand an existing preserve and would not conflict with the Building Control Measures.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the Project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to ordinances that promote urban-tree plantings. As discussed above, implementation of the Project would include improvements that include conservation measures, habitat restoration, and public access and recreation and interpretation improvements, such as creek restoration and trail system expansion. Therefore, the Project would not conflict with any of the Natural and Working Lands Control Measures of the Clean Air Plan would not be applicable.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The Project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the Project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies, the Water Control Measures are not applicable to the Project.

Super GHG Control Measures. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. In addition, as discussed in Section 3.7, Greenhouse Gas Emissions, the Project would be consistent with Contra Costa County's Climate Action Plan. Therefore, the Project would not conflict with the Super-GHG Control Measures.

Mitigation: None required.

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b) Impact AIR-2: Construction of the Project would generate air pollutant emissions that could violate air quality standards. (Less than Significant with Mitigation)

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter.

Site preparation and project construction would involve grading, paving, and some building activities. Construction-related effects on air quality from the Project would be greatest during the grading phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures and Additional Construction Best Management Practices, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROG and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

The proposed project would not include any new sidewalks and the only building pads would be for the water tank/water treatment system, the Americans with Disabilities Act (ADA) parking, the area around the toilet vaults, and potentially rebuilding the foundation for the pavilion and equipment shed. In addition, asphalt paving would only occur where there is already asphalt and the new parking areas would be compacted gravel.

New narrow trails in these areas would be constructed using a combination of small, mechanized equipment and hand tools, which would only result in minimal amounts of pollutants. Construction emissions for the staging areas and parking lots were estimated using CalEEMod,

consistent with BAAQMD recommendations. Construction of the staging areas and parking lots would include approximately 2,660 yards of imported fill, which was included as an input to the CalEEMod analysis. Other specific construction details are not yet known; therefore, default assumptions (e.g., construction duration and fleet activities) from CalEEMod were used. Construction of the creek restoration and public access and recreation facility project elements in the McCosker sub-area is anticipated to occur over two -three work seasons between 2019 and 2021. Trail construction of Alder Creek Nature Trail, Kitchen Orchard Terrace Trail, and Leatherwood Creek Trail would occur concurrent with the McCosker sub-area creek restoration and recreation improvements. Construction activities would be phased over a two-year period and would occur over a three to five-month summer period extending to October 31st. Construction would not occur during the winter, but would pick up again the following summer. Hours of work would generally be between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. The construction duration for the other sub-areas improvements was assumed to occur for approximately 6 months although actual implementation of improvements may occur periodically based on funding availability.

TABLE 3.3-6
PROJECT CONSTRUCTION EMISSIONS IN POUNDS PER DAY

Project Construction	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Average Daily Emissions	1.7	13.9	0.8	0.7
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**

SOURCE: LSA. May 2018.

As shown in *Table 3.3-6, Project Construction Emissions in Pounds per Day*, construction emissions associated with the project would be less than significant for ROG, NO_x and $PM_{2.5}$ and PM_{10} exhaust emissions. The BAAQMD requires the implementation of Basic Construction Mitigation Measures to reduce construction dust impacts to a less-than-significant level as follows:

Mitigation Measure AIR-2-1: Project-wide - Basic Construction Mitigation Measures

The EBRPD and project contractor shall implement the Basic Construction Mitigation Measures during construction activities as follows:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt tracked-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.

- All vehicle speeds on unpaved roads shall be limited to 15 mph.

- All roadways and driveways 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.

- 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 airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- 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.

- Post a publicly visible sign with the telephone number and person to contact at the EBRPD regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Significance after Mitigation: *Less than Significant.*

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b) Impact AIR-3: Operation of the Project would generate air pollutant emissions that could violate air quality standards. (Less than Significant)

Long-term air emission impacts are those associated with area sources and mobile sources involving any change related to the Project. In addition to the short-term construction emissions, the project would also generate long-term air emissions, such as those associated with changes in permanent use of the Project site. These long-term emissions are primarily mobile source emissions that would result from vehicle trips associated with the Project. Area sources, such as maintenance equipment and campfires, would also result in pollutant emissions.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Since much of the project traffic fleet would be made up of light-duty gasoline-powered vehicles, a majority of the PM_{10} emissions would result from entrainment of roadway dust from vehicle travel.

Typically, energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and

plug-in electronics, such as refrigerators or cooking equipment. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources. The Project would not include any new electric lighting and therefore would not generate energy source emissions.

Area source emissions associated with the Project would include emissions from the use of maintenance equipment and campfires.

The Project would add 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer day use spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The Project would also include approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

The total acreage devoted to recreation/staging area units would be approximately 12.4 acres (including approximately five acres of public access and recreation features in the McCosker subarea) or approximately one percent of the total Project acreage. This would represent an increase of 5.5 developed acres to the current developed area of 6.9 acres.

Emission estimates for the Project were calculated using CalEEMod. Model results are shown in *Table 3.3-7, Project Operational Emissions*. Trip generation rates for the Project were based on the Section 3.14, Transportation and Traffic, which estimates the Project would generate a maximum of 1,664 net new average daily trips on Saturdays from all staging areas combined.

The daily emissions associated with Project operational trip generation, energy and area sources are identified in *Table 3.3-7, Project Operational Emissions* for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The primary emissions associated with the Project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the Project; emissions are released in other areas of the air basin. Because the resulting emissions are dispersed rapidly and contribute only a small fraction of the region's air pollution, air quality in the immediate vicinity of the Project would not substantially change compared to existing conditions or the air quality monitoring data reported in *Table 3.3-5, Ambient Air Quality at the Concord – 2975 Treat Boulevard Monitoring Station*. Model results are shown in *Appendix F, Air Quality Construction Analysis.*

The results shown in *Table 3.3-7, Project Operational Emissions* indicate the Project would not exceed the significance criteria for daily ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions; therefore, Project operational impacts would be *less than significant*, and no mitigation is required.

Mitigation: None required.

TABLE 3.3-7
PROJECT OPERATIONAL EMISSIONS

	ROG	NO_x	PM_{10}	$PM_{2.5}$
Emissions in Pounds Per Day				
Area Source Emissions	1.3	0.0	0.3	0.3
Energy Source Emissions	0.0	0.0	0.0	0.0
Mobile Source Emissions	2.1	8.4	7.4	2.0
Total Emissions	**3.4**	**8.4**	**7.7**	**2.3**
BAAQMD Threshold	**54.0**	**54.0**	**82.0**	**54.0**
Exceed?	**No**	**No**	**No**	**No**
Emissions in Tons Per Year				
Area Source Emissions	0.1	0.0	0.0	0.0
Energy Source Emissions	0.0	0.0	0.0	0.0
Mobile Source Emissions	0.1	0.5	0.4	0.1
Total Emissions	**0.2**	**0.5**	**0.4**	**0.1**
BAAQMD Threshold	**10.0**	**10.0**	**15.0**	**10.0**
Exceed?	**No**	**No**	**No**	**No**

SOURCE: LSA May 2018.

b) Impact AIR-4: Operation of the project would generate localized CO emissions that could violate air quality standards. (Less than Significant)

The BAAQMD has established a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's *CEQA Guidelines*, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.

- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the Project would not conflict with the Contra Costa County Countywide Transportation Plan for designated roads or highways, a regional transportation plan, or other agency plans. According to *Section 3.14, Transportation and Traffic*, the Project would generate a maximum of 1,664 net new average daily trips from all staging areas combined. This is conservative because the maximum daily trips would primarily occur during the peak season on

weekend days. Therefore, the Project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, or increase traffic volumes at affected intersections to more than 24,000 vehicles per hour. Therefore, the Project would not result in localized CO concentrations that exceed State or federal standards and impacts would be *less than significant* and no mitigation is required.

Mitigation: None required.

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c) Impact AIR-5: Construction and operation of the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project is nonattainment under applicable federal or state ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors). (Less than Significant)

CEQA defines a cumulative impact as two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. According to the BAAQMD, air pollution is largely a cumulative impact. No single Project is sufficient in size to, by itself; result in nonattainment of ambient air quality standards. Instead, a Project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Therefore, if daily average or annual emissions of operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the Project would result in a cumulatively significant impact.

As discussed above, implementation of the Project would generate less-than-significant operational emissions. As shown in the Project-specific air quality impacts discussion above, the Project would not result in individually significant impacts and therefore, would also not make a cumulatively considerable contribution to regional air quality impacts and no mitigation is required.

Mitigation: None required.

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d) Impact AIR-6: Construction and operation of the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks. The closest sensitive receptor includes the single-family residence along Skyline Boulevard, which is located approximately 55 feet south of the proposed parking lot at the main Sibley staging area in the Preserve Sub-area. Sensitive receptors are also located near the

McCosker Sub-area, including one residence across the street and private residences immediately east. In addition, single-family residences would be located approximately 530 feet from proposed trails.

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). A significant cumulative impact would occur if the Project in combination with other projects located within a 1,000-foot radius of the Project site would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis.

As described above, construction of the Project may expose surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, construction contractors would be required to implement Mitigation Measure 3.3-1 described above. With implementation of this mitigation measure, Project construction emissions would be well below the BAAQMD significance thresholds and, once the Project is constructed, the Project would not be a source of substantial emissions. In addition, individuals using the trails would not be impacted by existing roadway emissions due to the short-term use of the trails for recreation. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during Project construction or operation, and potential impacts would be considered *less than significant* and no mitigation is required.

Mitigation: None required.

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e) Impact AIR-7: Construction and operation of the Project would not create objectionable odors affecting a substantial number of people. (Less than Significant)

During Project construction, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. The Project would include a new camping area at the McCosker Sub-area, including a large group barbecue and campfires, which would have the potential to generate odors. However, the camping area would be located over 1,000 feet from the nearest residences and the campfire area would be contained within a concrete surface area. Emissions from these sources would rapidly disperse with distance, particularly beyond 500 feet. Therefore, odor impacts at nearby residences would be minimal. The Project would not include any other activities or operations that would generate objectionable odors. Therefore, the Project would not create objectionable odors affecting a substantial number of people, and this impact would be *less than significant* and no mitigation is required.

Mitigation: None required.

3.3.6 Cumulative Effects

According to the BAAQMD, regional air pollution is largely a cumulative impact. No single project is sufficient in size to independently create regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Therefore, if the Project's daily average or annual emissions of construction- or operational-related criteria air pollutants exceed any applicable threshold established by the BAAQMD, the Project would result in a considerable contribution to a cumulatively significant impact. As shown in *Table 3.3-7, Project Operational Emissions*, implementation of the Project would not generate significant operational emissions. As shown in the project-specific air quality impacts discussion above, the Project would not result in individually significant impacts and therefore the Project would not result in a cumulatively considerable contribution to regional air quality impacts. Cumulative impacts would be considered *less than significant*.

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3.4 Biological Resources

This section provides an overview of the potential presence of biological resources in the Project area, including identification of habitat types, suitability of habitat types for special-status species, and likelihood for special-status species to occur. The Project area is shown on *Figure 2-1, Project Area* in Chapter 2, *Project Description*. The analysis of biological resources includes a description of the regulatory framework that guides the decision-making process, existing conditions in the Project area, criteria for determining if the proposed Project would result in significant impacts, anticipated impacts, mitigation measures, and the level of significance after mitigation.

3.4.1 Regulatory Framework

In California, the process of reviewing projects and decisions that might impact biological resources is conducted under federal, state, and local laws. For the purposes of the CEQA, biological resources are defined to include the following:

- Any species identified as a federal candidate for listing, a sensitive species, or as having special status in local or regional plans, policies or regulations, by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)
- Habitat designated as State Sensitive Habitats by the California Department of Fish and Wildlife Natural Heritage Program
- Wetlands or other "waters of the United States" afforded protection pursuant to Section 404 of the Clean Water Act
- Riparian or wetland habitats afforded protection pursuant to Section 1600 of the State Fish and Wildlife Code
- Native resident or migratory wildlife corridors
- Native wildlife nursery sites
- Occupied nesting habitat for birds afforded protection pursuant to the Migratory Bird Treaty Act
- Plants not protected by specific federal and state statutes that are afforded protection under CEQA Guidelines, Section 15380(b)
- Plants afforded protection under the California Native Plant Society's list of plants of special concern with List 1 and List 2 plant species considered to meet the requirements of the Section 1901, Chapter 10 (Native Plant Protection Act or Section 2062 and 2067 (California Endangered Species Act) of the California Fish and Wildlife Code
- Plant and wildlife habitats afforded protection pursuant to Habitat Conservation Plans and Natural Community Conservation Plans.

Federal

The Endangered Species Act, Migratory Bird Treaty Act, National Environmental Policy Act, and Section 404 of the Clean Water Act are the primary federal planning, treatment, and review mechanisms for biological resources in the Project area. Each is summarized below.

Endangered Species Act

The USFWS and the National Marine Fisheries Service (NMFS) are the designated federal agencies responsible for administering the Endangered Species Act (ESA). The ESA defines species as "endangered" and "threatened" and provides regulatory protection for any species thus designated. Section 9 of the Federal ESA prohibits the "take" of species listed by the USFWS as threatened or endangered. As defined in the Federal ESA, taking means "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." Recognizing that take cannot always be avoided, Section 10(a) of the Federal ESA includes provisions for takings that are incidental to, but not the purpose of, otherwise lawful activities. Specifically, under Section 10(a)(1)(A) authorized take permits may be issued for scientific purposes (e.g., universities). Under Section 10(a)(1)(B) incidental take permits may be issued if taking is incidental and does not lead to jeopardy of the species.

Section 7(a)(2) of the Federal ESA requires all federal agencies, including the USFWS, to evaluate the Project with respect to any species proposed for listing or already listed as endangered or threatened and their critical habitat, if any is proposed or designated. Federal agencies must undertake programs for the conservation of endangered and threatened species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its "critical habitat."

As defined in the Federal ESA, "individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding."

Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§703-711)

The MBTA is the domestic law that affirms and implements a commitment by the U.S. to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. Unless and except as permitted by regulations, the MBTA makes it unlawful at any time, by any means, or in any manner to intentionally pursue, hunt, take, capture, or kill migratory birds anywhere in the United States. The law also applies to the intentional disturbance and removal of nests occupied by migratory birds or their eggs during the breeding season. On December 22, 2017, U.S. Department of the Interior redefined "incidental take" under the MBTA such that, "the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control."[1] Thus, the federal MBTA definition of "take" does not prohibit or penalize the incidental take of migratory

[1] U.S. Department of the Interior, 2017. "The Migratory Bird Treaty Act Does Not Prohibit Incidental Take." Office of the Solicitor, Memorandum (M-37050) to Secretary, Deputy Secretary, Assistant Secretary for Land and Minerals Management, and Assistant Secretary for Fish and Wildlife and Parks Department, December 22, 2017.

birds that results from actions that are performed without motivation to harm birds. This interpretation differs from the prior federal interpretation of "take", which prohibited all incidental take of migratory birds, whether intentional or incidental.

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act, which is administered by the USACE, regulates the discharge of dredged and fill material into "waters of the United States." The USACE has established a series of nationwide permits that authorize certain activities in "waters of the United States," provided that the proposed activity can demonstrate compliance with standard conditions. Normally, the USACE requires an individual permit for an activity that would affect an area in excess of 0.3 acre of "waters of the United States." Projects that result in impacts to less than 0.3 acre of "waters of the United States" can normally be conducted pursuant to one of the nationwide permits, if consistent with the standard permit conditions. Use of any nationwide permit is contingent on no impacts to endangered species.

State

The California Environmental Quality Act (CEQA); the California Endangered Species Act (CESA); the Native Plant Protection Act; and Sections 1600-1603 of the State Fish and Wildlife Code are the primary State planning, treatment, and review mechanisms for biological resources in the Project area. Each is summarized below.

California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) closely parallels the conditions of the Federal ESA; however, it is administered by the California Department of Fish and Wildlife (CDFW). The CDFW is authorized to enter into memoranda of understanding with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess listed species for scientific, educational, or management purposes. CESA establishes a petitioning process for the listing of threatened or endangered species. The California Fish and Wildlife Commission is required to adopt regulations for this process and establish criteria for determining whether a species is endangered or threatened. CESA prohibits the "taking" of listed species except as otherwise provided in state law. Unlike the Federal ESA, CESA applies the take prohibitions to species petitioned for listing (state candidates). State-lead agencies are required to consult with CDFW to ensure that any actions are not likely to jeopardize the continued existence of any state-listed species or result in destruction or degradation of required habitat. The CDFW is required to coordinate with the USFWS for actions that involve both federally- and state-listed species.

California State Fish and Game Code §§ 3503, 3503.5, and 3513

Under these sections of the California Fish and Game Code, the project operator is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey; the taking or possessing of any migratory nongame bird; the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or nongame birds; or the taking of any nongame bird

pursuant to California Fish and Game Code Section 3800. Fish and Game Code §3513 adopts the federal Department of the Interior take provisions under the MBTA.[2]

The Native Plant Protection Act

The Native Plant Protection Act (NPPA) enacted in 1977 includes measures to preserve, protect, and enhance rare and endangered native plants. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations. Individual land owners are required to notify the CDFW at least ten days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

Sections 1600-1603 of the State Fish and Wildlife Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports fish or wildlife resources are subject to the regulatory authority of the CDFW pursuant to Sections 1600 through 1603 of the State Fish and Game Code. Under state code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Included are watercourses with surface or subsurface flows that support or have supported riparian vegetation. Specifically, Section 1603 of the Code governs private-party individuals, and Section 1601 of the Code governs public projects.

CDFW jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. The CDFW must be contacted by the public or private party for a Streambed Alteration Agreement for any project that might impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding potential impact and has required replacement of lost habitats on at least an acre-for-acre basis.

Section 2081 of the State Fish and Wildlife Code

Under Section 2081 of the Code, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any endangered, threatened, or candidate species in the State of California. These acts that are otherwise prohibited may be authorized through permits or memoranda of understanding if: (1) the take is incidental to an otherwise lawful activity; (2) impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species; and (4) the applicant ensures adequate funding to implement the measures required by CDFW. The Department makes this determination based on the best scientific and other information that is reasonably available and includes consideration of the species' capability to survive and reproduce.

[2] State Assembly Bill 2627, introduced in February 2018, would amend Section 3513 of Fish and Game Code relating to migratory birds. The bill would amend California law to clarify that the State of California may issue orders, rules, or regulations that are more protective of migratory nongame birds than the rules or policies set forth by the Department of the Interior. AB 2627 would not, in itself, restore incidental take protection to migratory nongame birds in California.

Local Resource Protection Ordinances and Policies

City and county ordinances and General Plan policies, East Bay Regional Park District (District) 2013 Master Plan policies, and District Ordinance 38 are the primary local planning, treatment, and review mechanisms for biological resources in the Project area. Other local planning policy documents are also considered where applicable. Each is summarized below.

City and County General Plan Policies

City and county ordinances and general plan policies provide guidance on District parklands from the planning through project implementation. Relevant city and county general plan policies pertaining to biological resources in the Project area are described in *Table 3.4-1, City and County General Plan Biological Resources Goals and Policies*.

TABLE 3.4-1
CITY AND COUNTY GENERAL PLAN BIOLOGICAL RESOURCES GOALS AND POLICIES

Goals and Policies	Project Consistency - Comments
Contra Costa County	
Conservation Element Goals and Policies. The Contra Costa County General Plan's Conservation Element includes goals and policies for the protection of vegetation and wildlife, such as the following: 8-D. To protect ecologically significant lands, wetlands, plant and wildlife habitats. 8-6. Significant trees, natural vegetation, and wildlife populations generally shall be preserved. 8-13. The critical ecological and scenic characteristics of rangelands, woodlands, and wildlands shall be recognized and protected. 8-15. Existing vegetation, both native and non-native, and wildlife habitat areas shall be retained in the major open space areas sufficient for the maintenance of a healthy balance of wildlife populations. 8-21. The planting of native trees and shrubs shall be encouraged in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are sustained in urban areas. 8-28. Efforts shall be made to identify and protect the County's mature native oak, bay, and buckeye trees.	Consistent with the Conservation Element goals and policies of Contra Costa County General Plan's Conservation Element, the Project would "protect and support natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages" as set forth in supporting strategies for Objective 1, and would "improve creek functions in the McCosker sub-area" as set forth in strategies supporting Objective 2: Creek restoration.
City of Orinda	
Biological Resource Requirements *Western Hills Open Space Conservation Easement*. The Western Hills Open Space Conservation Easement was established as mitigation pursuant to the USFWS Biological Opinion and Incidental Take Permit for the Wilder (Montanera) residential development project. Species covered under the easement include: California red-legged frog and Alameda whipsnake. Covered habitat includes: seasonal and seep wetlands, creeks and adjacent riparian habitat, coyote scrub, California oaks, and non-native grassland. *Long Term Management Plan (LTMP)*. The LTMP for the Western Hills Open Space will serve as the controlling management plan for the conservation easement. The LTMP, developed in concert with, and approved by, the resource regulatory agencies, addresses the long-term	In accordance with District Resolution No: 2006-1-14, District and OGLLC, Property Owner, 2008 First Amendment to Donation Agreement by and between the District and OGLLC, the 2004 Second Supplemental EIR for the Montanera Project, and City of Orinda Resolution 13-05, and resource agency permits, the following actions are anticipated for the Western Hills sub-area: 1) conveyance in fee of a 389-acre conservation easement with multi-use trails; and 2) management of an approximately one-half acre easement containing the Red-tailed Hawk Staging Area. In addition, park visitors will have access to ten parking spaces within Wilder City Park to access the Western Hills sub-area trails.

Goals and Policies	Project Consistency - Comments
ownership, land management, and funding mechanisms for the Western Hills Open Space Area as authorized by the Resource Agency Permits.	
Conservation Element Policies. The policies within the City of Orinda General Plan's Conservation Element seek to maintain the wide variety of wildlife in Orinda by preserving habitats. Policies include the following: 4.1.1-B. Preserve rare and endangered species. 4.1.1-C. Preserve valuable wildlife habitats, particularly riparian habitats. 4.1.1-D. Preserve oak woodlands and other native trees, and encourage planting and reforestation of oaks and other natives in hillside areas. 4.1.2-D. When possible, maintain connecting open-space areas so that wildlife can have free movement though the area, bypass urban areas, and have access to adjacent regional parks and open space.	Consistent with the Conservation Element goals and policies of City of Orinda General Plan's Conservation Element, the Project would "protect and support natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages" as set forth in supporting strategies for Objective 1.
City of Oakland	
Conservation Element Policies. The policies and objectives within the City of Oakland General Plan's Conservation Element aim to address the conservation, development, and utilization of natural resources so that they are "conserved and prudently used to sustain life, support urban activities, protect public health and safety, and provide a source of beauty". Policies and objectives include the following: Objective CO-7: Protection of Native Plant Communities. To minimize the loss of native plant communities and restore these communities where they have been damaged or lost, and to preserve Oakland's trees unless there are compelling safety, ecological, public safety, or aesthetic reasons for their removal. Policy CO-7.1: Protection of Native Plant Communities. Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from the potential adverse impacts of development. Policy CO-7.2: Native Plant Restoration. Encourage efforts to restore native plant communities in areas where they have been compromised by development or invasive species, provided that such efforts do not increase an area's susceptibility to wildfire. Policy CO-7.5: Non-Native Plant Removal. Do not remove non-native plants within park and open space areas solely because they are non-natives. Plant removal should be related to other valid management policies, including fire prevention. Objective CO-9: Rare, Endangered, and Threatened Species. To protect rare, endangered, and threatened species from the impacts of urbanization. Policy CO-9.1: Habitat Protection. Protect rare, endangered, and threatened species by conserving and enhancing their habitat and requiring mitigation of potential adverse impacts when development occurs within habitat areas.	Consistent with the Conservation Element policies and objectives of City of Orinda General Plan's Conservation Element, the Project would "protect and support natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages" as set forth in supporting strategies for Objective 1. Protect and Support Natural Plant Communities and Wildlife Habitat. Vegetation management practices, including non-native plant removal, would be done in adherence to the District's *Wildland Management Policies and Guidelines* described below and the District's Fuel management and Integrated Pest Management (IPM) programs would continue with implementation of the Project. Mitigation measures BIO-1a-I, BIO-2a-b, and BIO-3a would reduce impacts to rare and endangered species to below the threshold of significance. The Project would include enhancement of 149 linear feet (0.08 acres) of riparian woodland, restoration of 2,142 linear feet (3.27 acres) of riparian woodland, and development of 2,912 linear feet (0.58 acres) of aquatic (i.e., stream) habitat.
Policy CO-7.6: Rehabilitation of Damaged or Dead Vegetation. Encourage programs which rehabilitate, enhance, or replace damaged or dead vegetation as appropriate. Objective CO-8: Wetlands. To conserve wetlands so that they may continue to provide habitat for fish and wildlife.	Consistent with the Conservation Element policies and objectives of City of Orinda General Plan's Conservation Element, the Project would "Improve creek functions in the McCosker sub-area, including establishing a monitoring and reporting program to observe vegetation establishment success and geomorphic evolution of the Project site, and replanting areas that have not been successful to improve

Goals and Policies	Project Consistency - Comments
Policy CO-8.2: Wetland Park Activities. Limit recreational uses within wetland "parks" to activities that are consistent with the fragile environmental characteristics of the areas. These uses may include wildlife refuge, ecological study areas, and where appropriate, interpretive boardwalks and nature centers	overall ecosystem health" as set forth in supporting strategies for Objective 2: Creek Restoration. Additionally, Project design features would be implemented to limit access to riparian woodland features.
Objective CO-11: Wildlife. To sustain a healthy wildlife population within the City of Oakland. Policy CO-11.1: Protection from Urbanization. Protect wildlife from the hazards of urbanization including loss of habitat and predation by domestic animals. Policy CO-11.2: Migratory Corridors. Protect and enhance migratory corridors for wildlife. Where such corridors are privately owned, require new development to retain native habitat or take other measures which help sustain local wildlife population and migratory patterns.	Consistent with the Conservation Element policies and objectives of City of Orinda General Plan's Conservation Element, most of the Project (99%) would be retained as "Natural Units", including retaining open space areas east and south of the Caldecott Wildlife Corridor.

East Bay Regional Parks

2013 District Master Plan

The 2013 District Master Plan defines the long-term vision for lands managed by the District. The Master Plan provides a decision-making framework, and identifies policies that will achieve District-wide objectives. Development objectives, land use classifications, and planning and management guidelines are established by the Master Plan. The Master Plan includes policies for addressing biological resources as described in *Table 3.4-2, 2013 District Master Plan Goals and Policies.*

TABLE 3.4-2
2013 DISTRICT MASTER PLAN GOALS AND POLICIES

Goals and Policies	Project Consistency
NRM1: The District will maintain, manage, conserve, enhance, and restore park wildland resources to protect essential plant and animal habitat within viable, sustainable ecosystems.	Consistent with Policy NRM1, the Project includes Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat, which includes these strategy: "*Protect and support special status species and their habitat through existing management programs and by adhering to regulatory obligations*; and "*Maintain and enhance habitat communities through existing resource and noxious weed management plans, policies, and programs*." The Project will implement this objective through the restoration of four acres of riparian habitat.
NRM2: Plant and animal pest species will be controlled by using IPM procedures and practices adopted by the Board of Directors. The District will employ IPM practices to minimize the impact of undesirable species on natural resources and to reduce pest-related health and safety risks to the public within developed facilities and/or high-use recreational areas.	Consistent with Policy NRM2, the District's IPM programs, including non-native plant removal and management of non-native and feral animals, would continue with implementation of the Project.
NRM3: The District will manage park wildlands using modern resource management practices based on scientific principles supported by available research. New scientific information will be incorporated into the planning and implementation of District wildland management programs as it becomes available. The District will coordinate with other agencies and organizations in a concerted effort to inventory,	Consistent with Policy NRM3, the Project includes several adaptive management strategies for managing park wildlands using modern resource management practices based on scientific principles supported by available research including in Objective 2: Creek Restoration, "*Establish a monitoring and reporting program to observe vegetation establishment success and geomorphic evolution of the Project site, replanting areas that have not been successful to improve overall ecosystem health"* and

Goals and Policies	Project Consistency
evaluate and manage natural resources to maintain and enhance the biodiversity of the region.	Objective 6: Climate Adaptation and Resiliency, "*Maintain, monitor and adapt management programs for natural communities and habitat to address climate change effects"* and *"Maintain and augment grazing infrastructure, as needed, to implement adaptive vegetation management programs directed at protecting and supporting natural communities and habitat in an era of changing climate conditions*."
NRM4: The District will identify, evaluate, conserve, enhance and restore rare, threatened, endangered, or locally important species of plants and animals and their habitats using scientific research, field experience and other proven methodologies. Populations of listed species will be monitored through periodic observations of their condition, size, habitat, reproduction and distribution. Conservation of rare, threatened and endangered species of plants and animals and their supporting habitats will take precedence over other activities, if the District determines that the other uses and activities would have a significant adverse effect on these natural resources.	Consistent with Policy NRM4, the Project includes objectives for addressing and enhancing habitat conditions for rare, threatened, endangered, or locally important species of plants and animals and would adhere to mitigations BIO-1a-i, BIO-2a-b, and BIO-3a, to reduce potential Project impacts to impacts to rare and endangered species would to below the threshold of significance.
NRM5: The District will maintain and manage vegetation to conserve, enhance and restore natural plant communities, to preserve and protect populations of rare, threatened, endangered and sensitive plant species and their habitats; and where possible, to protect biodiversity and to achieve a high representation of native plants and animals.	Refer to discussions for Policies NRM3 and NRM4 for policy consistency.
NRM8: The District will conserve, enhance and restore biological resources to promote naturally functioning ecosystems. Conservation efforts may involve using managed conservation grazing in accordance with the District's Wildland Management Policies and Guidelines, prescribed burning, mechanical treatments, Integrated Pest Management and/or habitat protection and restoration. Restoration activities may involve the removal of invasive plants and animals, or the reintroduction of native or naturalized species, adapted to or representative of a given site.	Consistent with Policy NRM8, vegetation management practices, including managed conservation grazing and other management strategies listed in this policy would continue with implementation of the Project in adherence to the District's *Wildland Management Policies and Guidelines* described below and the District's Fuels Management and IPM programs.
NRM9: The District will conserve and protect native animal species and enhance their habitats to maintain viable wildlife populations within balanced ecosystems. Non-native and feral animals will be managed to minimize conflicts with native wildlife species. The District will cooperate on a regular basis with other public and private land managers, and recognized wildlife management experts to address wildlife management issues on a regional scale.	Consistent with Policy NRM9, the overarching goals for the LUPA state: "*Enhance the natural ecology of the Preserve through conservation easements, and the restoration of Alder Creek, a tributary of San Leandro Creek, including, potentially providing upstream migration access for native rainbow trout (Oncorhynchus mykiss)*. Implementation of the following Project objectives would be consistent with Policy NRM9 Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat, which includes these strategy: "*Protect and support special status species and their habitat through existing management programs and by adhering to regulatory obligations*; and "*Maintain and enhance habitat communities through existing resource and noxious weed management plans, policies, and programs*." Additionally, land management practices, including management of non-native and feral animals, would be done in adherence to the District's IPM programs would continue with implementation of the Project.

Goals and Policies	Project Consistency
NM10: The District will conserve, enhance, and restore native fish and amphibian populations and their habitats; will develop aquatic facilities, where appropriate, to create a wide variety of fisheries; will monitor fisheries resources to determine species composition, size, population and growth rates; and will cooperate with the California Department of Fish and Wildlife to conserve, enhance and manage its fisheries for ecological and recreational benefit.	Consistent with Policy NRM9, the overarching goals for the LUPA state: "*Enhance the natural ecology of the Preserve through conservation easements, and the restoration of Alder Creek, a tributary of San Leandro Creek, including, potentially providing upstream migration access for native rainbow trout (Oncorhynchus mykiss)*." This goal would be implemented by managing riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources contained within the Project area. Native fish and amphibian populations and their habitats would be benefitted through the restoration of 3,061 linear feet of channel and upland riparian habitat.
NRM12: The District will manage riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources and to prevent the destruction, loss, or degradation of habitat. The District will participate in the preservation, restoration and management of riparian and wetland areas of regional significance, and will not initiate any action that could result in a net decrease in park wetlands. The District will encourage public access…, but will control access to riparian and wetland areas, when necessary, to protect natural resources.	Consistent with Master Plan Policy NRM12, the Project includes Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat, which includes these strategy: "*Protect and support special status species and their habitat through existing management programs and by adhering to regulatory obligations*; and "*Maintain and enhance habitat communities through existing resource and noxious weed management plans, policies, and programs*." This objective would be implemented by managing riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources contained within the Project area. The Alder Creek watershed would benefit from the restoration of 2,900 linear feet of channel and upland riparian habitat and BIO-3a would mitigate Project impacts to wetlands such that there would be no net loss of wetlands.
PRPT20: Natural, open space, or wildland areas with lower intensity recreational uses and facilities (primarily trails) will be designated as Natural Units. Natural Units will generally comprise the majority of parkland acreage, except in Regional Recreation Areas. Parklands will be designated as Natural Units to maintain open space and significant features in a cohesive area. A Natural Unit may contain Special Protection Features and Special Management Features.	Consistent with Master Plan Policy PRPT20, the Project would designate 1,295 acres (99 percent) of the Project area as Natural Units to maintain open space and significant features in a cohesive area and proposes the four-acre creek restoration area in the McCosker to be designated as a Special Protection Feature.

District Wildland Management Policies and Guidelines (2001)

The 2001 Wildland Management Policies and Guidelines were developed to provide general guidance pertaining to the administration and stewardship of District parklands to insure the proper use and enhancement of wildland resources. The policies and guidelines, which apply modern management practices to biological resources based on scientific principles and supported by available research as summarized in *Table 3.4-3, 2001 District Wildland Management Policies and Guidelines,* would continue with implementation of the Project concurrent with the District's Fuels Management and IPM programs.

Ordinance 38, Sections

Portions of District Ordinance 38 address the disturbance of biological park features of significance on District lands. Relevant sections are summarized in *Table 3.4-4, Relevant Ordinance 38 Sections* below.

TABLE 3.4-3
2001 DISTRICT WILDLAND MANAGEMENT POLICIES AND GUIDELINES

Goals and Policies
***Vegetation Management Guidelines*.** This guideline states that "Vegetation in grasslands and oak savanna understories will be managed to maintain and enhance biodiversity and achieve a high representation of native plants… recognizing the physiological and ecological needs and requirements of the vegetation. The District will consider the full range of options for managing wildland vegetation…. including grazing, fire, mechanical (mowing), chemical, (application herbicides), and biological methods that may include the use of native herbivores."
Wildland Seeding. This guideline states that "Management of park wildlands will be conducted to maintain and enhance native vegetation… with wildland seeding used primarily to rehabilitate disturbed ground and minimize erosion……Areas proposed for treatment will be appraised individually to determine the appropriate re-seeding methods to be used…. Native annual and perennial species adapted to the conditions of the site will be utilized. Severely disturbed sites with a potential for serious erosion will be stabilized as rapidly as possible by establishing an herbaceous plant cover…seeding will take place in the proper season… to encourage plant germination and survival."
Native Grassland Restoration. This guideline states that "The District will designate appropriate areas for restoring or reclaiming lost or altered natural biotic communities. Areas of significant native perennial grasses … will be managed to maintain and enhance existing natural populations… restoration will involve seeding or planting native vegetation that is adapted to the site using local stock, where possible. Follow-up treatments … may be necessary to maintain desired conditions."
Woodland Vegetation. This guideline states that "Management of plant diversity will consist of primarily conserving woodland areas to allow natural ecological processes to take place. Active management may be used… to influence stand structure and enhance plant diversity.
Oak Regeneration. This guideline states that "The District will manage oak woodland plant communities to maintain a mosaic of age and size classes, provide structural diversity, and sustain production and recruitment of tree species through natural ecological process…"
Shrubland Vegetation. This guideline states that "Shrubland is an important plant community to be managed for their own intrinsic value as naturally functioning ecosystems…. And that, "The District will employ measures to minimize the widespread encroachment of monotypic stands of coyote brush, poison oak, and broom on parkland… including use of grazing, mechanized methods, prescribed burning, and/or chemical treatments as a means of control."
Riparian and Wetland Resources. This guideline states that "Riparian and other wetland environments will be managed to preserve and enhance the natural and beneficial values of these areas and prevent the destruction, loss, or degradation of habitat. Creeks, streams, and other wetlands shall be retained in their natural state... to maintain water quality, biotic diversity, aesthetic values, and recreational opportunities…Site specific unit management plans will prescribe appropriate actions to prevent adverse impacts."
Rare, Threatened, Endangered and Sensitive Plants. This guideline states that "The District will protect and maintain the habitats and populations of rare, threatened, endangered, and sensitive plant species. …management prescriptions based on scientific research will be carried out to maintain, perpetuate, increase, or restore population levels and viability…"
Wildlife. This guideline states that "Appropriate resource management practices will be used to enhance habitat conditions favorable to a wide variety of native wildlife species. … and will develop site-specific wildlife management prescriptions to promote overall species diversity."
Pest Management. This guideline states that "The evaluation and control of pest plant problems shall be performed in accordance with District Pest management Policies and Practices manual and applicable state and county regulations …"

East Bay Regional Park District Standard Technical Specifications and Supplementary Conditions

The District's Standard Technical Specifications and Supplementary Conditions contain provisions that are intended to ensure, among other things, the safety of the construction workers, staff and the public, and the protection of wildlife, site resources, and water quality during construction and operation of site amenities. Relevant sections are provided in *Table 3.4-5, Relevant Technical Specifications* below.

TABLE 3.4-4
RELEVANT ORDINANCE 38 SECTIONS

Section 800. This section states that "No person shall hunt, molest, disturb, injure, trap, take, net, poison, harm, or kill any kind of wild animal whether living or dead, nor remove, destroy or in any manner disturb the natural habitat of any animal…." And further states: "All State Fish and Game laws and regulations, which are applicable, shall apply (rev. 4/16)."
Section 803. This section states that "…No person shall feed ... feral or wild animals at any time on District parklands.
Section 804. This section states that "No person shall damage, injure, collect or remove any plant or tree or portion thereof, whether living or dead, including but not limited to flowers, mushrooms, bushes, vines, grass, turf, cones and dead wood located on District parklands. In addition, any person who willfully or negligently cuts, destroys or mutilates vegetation shall be arrested or issued a citation pursuant to Penal Code Section 384a."
Section 807. This ordinance states that "Special permission may be granted to remove, treat, disturb, or otherwise affect plants or animals or geological, historical, archaeological, or paleontological materials for research, interpretive, educational, or park operational purposes."
Section 810. This ordinance states that "No person shall ride or operate a bicycle or ride a horse within a posted Special Protection Area, except on designated trails. Special Protection Areas are designated by the Board to preserve cultural and/or natural resources (added 4/12)."

TABLE 3.4-5
RELEVANT TECHNICAL SPECIFICATIONS

Project Cleanliness
• The Contractor shall keep the project site and the surrounding areas free from accumulations of waste material and rubbish generated by employees and subcontractors. The Contractor shall remove daily all rubbish, tools, equipment and surplus materials leaving the work "broom clean" at the completion of each day, unless a different nature of cleanup or repair is specified elsewhere in the Contract Documents.
Work Hours
• The hours of work shall be any 8.5-hour block as mutually agreed upon between the Contractor and the District between 7:00 a.m. and 5:00 p.m., Monday through Friday. • No night work shall be permitted.
Environmental Protection Training
• All workers shall complete an approximately one-hour long on-site training session conducted by a District Biologist at the start of construction and the Contractor shall provide a list of workers for on-site training by the District Biologist. • All site supervisors and workers of the contractor and subcontractors shall attend the training. • Workers who do not attend the training at the start of construction shall attend a subsequent training session. The Contractor shall notify the District Inspector one week prior to the anticipated arrival of new workers, to schedule a training session. • Only workers who have completed the training shall be allowed to work on site. At the discretion of the Biological Monitor, untrained workers may perform one-time deliveries and similar minor construction support activities where there is no ground disturbance, provided that they are supervised by a trained member of the Contractor's supervisory staff. • The District Inspector or Biological Monitor may stop construction until untrained workers are either off site or trained. • The Biological Monitor is on site to observe construction activities, so the Contractor may not work on site while the Biological Monitor is training workers. The purpose of the training is to: • Familiarize personnel with rare, threatened and endangered species which may be present at the work site. • Provide an overview of the laws, regulations and violation penalties governing protection of the species. • Provide directions and information on how to avoid and minimize contact with the species, and what to do if they are encountered.

Site Set-up - Execution

- Work on site shall only take place between June 15 and October 31.
- Confine work activities to approved construction work areas, staging areas and access routes.
- Excavations shall not be left open overnight. Where not backfilled, excavations shall be tightly covered. Perimeters of plywood panels or other covers shall be edged with dirt to prevent intrusion of small animals.
- Excavations shall include a ramp with a maximum slope of 1:1 to allow animals to escape the excavation when not covered.
- Storage of equipment and vehicles shall be a minimum of 100 feet from the top of the creek bank.
- Fueling of equipment and vehicles shall take place a minimum of 200 feet from the top of the creek bank.

Erosion Control SWPPP Requirements

- In addition to the requirements of the CASQA or Caltrans standard, the SWPPP shall contain an Erosion Control Plan that includes the following provisions:
  - Fiber rolls and erosion control blankets shall not contain netting that could trap small animals.
  - Photodegradable products are not acceptable.
  - All erosion control products shall be weed and seed free.
  - All temporary erosion control measures shall be immediately removed when no longer needed.
  - All temporary erosion control measures shall be removed and legally disposed of prior to project completion.

Clearing and Grubbing

- All cut and fill areas: Strip topsoil to 2-inches minimum below existing grade where vegetation occurs. Additional depth may be required to remove organic materials.
- Stripped material shall be disposed of off-site and in a legal manner or stockpiled for reuse as directed by the District.
- Upon completion of clearing and grubbing, areas shall be left in a neat, clean condition ready to receive subsequent work.

Excavated Material

- All excavated material shall be piled in a manner which will not endanger the work and which will avoid completely obstructing access. Culverts, swales, and natural drainage patterns shall be kept clear.
- The excavations and support system shall comply in all respects with the requirements of Article 6, of the Construction Safety Orders of the Division of Industrial Safety.
- At no time shall trenches be left open during the Contractor's non-working hours. Trenches shall be backfilled to grade and/or covered with plywood or traffic-rated metal plates and pipe ends securely closed with a tight-fitting plug or cover at the end of each work day.
- All open excavations 5 feet or greater in depth shall be constructed with bracing, sheeting, shoring, or other equivalent method designed for the protection of life and limb in accordance to Section 6705 of the State Labor Code.
- The trench excavations and support system shall comply in all respects with the requirements of Article 6, of the Construction Safety Orders of the Division of Industrial Safety.

Protection of Existing Trees and Shrubs

- Contractor shall protect all trees in work areas, staging areas and along construction access
- No construction vehicle may be parked or driven within the drip line of a tree unless approved by the District Inspector.
- Snow fencing or equal barriers shall be placed around drip line of trees to be protected in place.
- When it is necessary to excavate adjacent to existing trees and shrubs, Contractor shall use all possible care to avoid injury to these plants and their roots. No roots three (3) inches or larger in diameter shall be cut without the prior approval of the District.
- In no case shall any limbs be cut or trees and shrubs removed without first obtaining approval from the District.

Supplementary Conditions
• The California State Water Resources Control Board, San Francisco Bay Region, Oakland, California has jurisdiction over the project storm water discharges within the Project area. Accordingly, the following actions will be required prior to initiating implementation of the Project: 1) the District will submit a Notice of Intent (NOI) and obtain a waste discharger identification number (WDID) from the above agency; 2) a Receipt of NOI will be obtained by the District from SWRCB prior to the start of construction; and 3) the Contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board No. 92-08 DWQ for discharges of storm water runoff associated with construction activity.

Pathogen Controls Best Management Practices

One of the pathogens of greatest concern to the native habitat in the Project area is phytophthora, a soil-borne pathogen that infects trees, and woody plants. Phytophthora is part of a larger group of organisms known as oomycetes (egg-fungi). Commonly called “water molds”, phytophthora species are land dwelling plants that thrive under wet environmental conditions.

Dry soil poses a low risk for spreading Sudden Oak Death because dry soil is less apt to stick to surfaces and the amount of viable *P. ramorum* inoculum on the surface of dry soil is very low. *P. ramorum* can survive, and appears to reproduce, in watercourses that drain Sudden Oak Death-affected watersheds, which can contain spores of *P. ramorum*. More spores are typically present in watercourses during the wet season, but spores may be present in some streams year-round. Moist soil on hiking boots and bicycle tires has also been shown to spread Sudden Oak Death, as have vehicles driven on dirt roads that pass through lands infested with *P. ramorum*, especially when conditions are muddy.

To minimize the spread of this pathogen, the District has adopted the following Phytophthora Best Management Practices.

General

1. *Phytophthora ramorum* is the plant pathogen known to cause the Sudden Oak Death disease. The disease kills oak and other plant species, significantly woody ornamentals, and has had devastating effects on the oak populations in California. Symptoms include bleeding cankers on the tree's trunk and dieback of the foliage, in many cases eventually leading to the death of the tree.

2. Equipment refers to any implement used to perform maintenance activities or travel to and from work sites. These include vehicles, mowers, skip loaders, tractors, weed eaters, shovels, rakes, etc.

3. While absolute sanitation is difficult to attain, Contractors shall make every practicable effort to use the following District Best Management Practices (BMPs) during the project’s installation and Plant Establishment period to aid in preventing possible sudden oak death disease at the Project sites.

District General Construction BMPs Before Entering District Property

The following procedures must be followed before entering any District property, including but not limited to Project Area, to make sure vehicles and gear, tools and boots are free of potentially infected soil, weed propagules, seed or other debris.

1. Worker Training. Before entering the job site, field workers are to receive training that includes information on Phytophthora diseases and how to prevent the spread of these and other soil-borne pathogens by following approved phytosanitary procedures.

2. Clothing and Gear. At the start of work at each new job site, worker clothes should be free of all mud or soil. If clothes are not freshly laundered, workers shall remove all debris and adhered soil with a stiff brush. All gear should be cleaned with brushes, air or water to remove as much visible mud and debris as possible

3. Vehicles and Large Equipment. Vehicles that only travel and park on paved public roads do not require external cleaning.

   Before arrival at construction sites, vehicles must be free of soil and debris including on tires, wheel wells, vehicle undercarriages, and other surfaces. Vehicles may be cleaned at a commercial vehicle or appropriate truck washing facility. The interior of vehicles and equipment (cabs, etc.) must be also be free of mud, soil, gravel and other debris (vacuumed, swept or washed).

District General Construction BMPs Before Leaving the Project Construction Sites

To minimize the potential for *P. ramorum* to spread beyond the Project area, the following procedures must be followed before leaving Project construction sites to make sure vehicles and gear, tools and boots are free of potentially infected soil, weed propagules, seed or other debris.

1. Cleaning Equipment and Gear On-site. Scrub, brush and pick off soil, vegetation or other debris from shoes, saws, vehicles and other equipment at the field or work site (this is 99% effective at removing infectious propagules and weed seeds). Other methods may include: blowing compressed air, followed by water or sanitizing solution, if necessary. When water is used, the Contractor is to ensure that no erosion occurs, or waterways are contaminated.

2. Cleaning Area. Cleaning should be conducted on a surface that is unlikely to allow cleaned materials to become re-contaminated, such as pavement, a plastic tarp, or a continuous layer of gravel.

3. Follow-up Cleaning. If complete on-site sanitation is not possible, decontamination can be completed at a local power wash facility or in an isolated area at an off-site equipment yard.

Preventing Potential Spread of Contamination within Sites

In a partially infested site, the potential for Phytophthora to spread within the site needs to be addressed. As it is not practical to identify every portion of a site that contains or is free of *P. ramorum*. because *P. ramorum* contamination is not visible, work practices should minimize unnecessary movement of soil within locations to prevent potential pathogen spread sign using the following Best Management Practices.

1. Whenever possible, work on *P. ramorum*-infected and -susceptible species during the dry season. When working in wet conditions, keep equipment on paved or dry surfaces and avoid mud.

2. Do not bring more vehicles into work sites than necessary. Within the site, keep vehicles on surfaced or graveled roads whenever possible to minimize soil movement.

3. Travel off roads or on unsurfaced roads should be avoided when such roads are wet enough that soil will stick to vehicle tires and undercarriages. In intermittently wet areas, avoid visits when roads are wet; schedule activities during dry conditions when the risk of moving wet soil is minimal.

4. Vehicles should be cleaned before leaving infested areas and before entering new areas.

5. Sanitize pruning gear and other equipment before working in an area with susceptible plants to avoid transporting the *P. ramorum* pathogen throughout the site, or from an infested location to other non-infested locations.

6. Do not use untreated water from potentially infested streams for irrigation, dust control on roads, or similar purposes. Water can be treated with ultrafiltration, chemicals (chlorine, ozone), or UV radiation to eliminate Phytophthora spores.

7. Conform to all federal and state regulations and inspections to prevent the movement of *P. ramorum*-infested nursery stock.

District BMPs Community Outreach

As moist soil on hiking boots and bicycle tires has been shown to spread Sudden Oak Death, the District is working on implementing an outreach program that includes information on Best Management Practices for minimizing the spread of *P. ramorum.* This information is being incorporated into park brochures, on-site information panels and the District web site.

Information includes, but is not limited to, the following guidance;

1. The East Bay Hills contains environments conducive to *P. ramorum*, the plant pathogen known to cause the Sudden Oak Death disease.

2. To minimize the spread of *P. ramorum*, wherever possible, Park visitors should:

    a. Stay on paved, rocked and well-traveled trails; and avoid cross-country travel, especially under wet conditions.

    b. Avoid wet areas as the risk of spreading pathogens or weeds increases with the amount of mud, soil and organic debris that adheres to shoes, tools, bicycles, pets, etc.

3.4.2 Existing Conditions

Natural Communities

Natural communities, or habitat types, are assemblages of plants and animals found in particular environments that vary based on soils, hydrology, rainfall, humidity, soil and water salinities, wind exposure, and altitude. Natural communities form distinct habitats that are used by an associated suite of plant and animal species.

The Project area supports the following general habitat types: California Annual Grassland, Coyote Brush Scrub, Oak Woodland, Riparian Woodland, Seasonal Wetlands, Tree Plantations, and Developed/Ruderal. These habitat types were determined through field surveys and aerial mapping conducted by District, WRA (WRA, 2006), ESA, and LSA. Each of these habitat types is described below. The distribution of these habitats in the Project area is depicted in *Figure 3.4-1, Natural Communities Habitat Types*.

Special-Status Natural Communities

The CDFW's Natural Heritage Division identifies special-status natural communities as those which are naturally rare and whose extent has been greatly diminished through changes in land use. The CNDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species. Information is maintained on each site for the community's location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of all special-status natural communities, CEQA requires consideration of the potential impacts of a project on biological resources of statewide or regional significance. Several special-status natural communities occur within the regional Project vicinity, including northern maritime chaparral and serpentine bunchgrass; however, neither occurs within the immediate Project area.

Wildlife Study Areas

In 2004 a resource management plan was prepared for the Caldecott Wildlife Corridor by the Alameda-Contra Costa Biodiversity Working Group, a partnership of public and private organizations. The purpose of the plan was to assemble information on resources and resource management, to analyze management options, to identify mutually beneficial approaches which avoid or reduce conflict among interests, and to define specific actions to address and balance resource management needs for the area. The *2004 Caldecott Wildlife Corridor Study* suggests that the Caldecott Wildlife Corridor extending along the Oakland – Berkeley Hills above the Caldecott Tunnel may be important for local wildlife migration, particularly for medium-sized and larger animals (e.g., foxes, deer, coyotes, mountain lions, etc.) with habitat ranges that extend throughout the East Bay Hills (2004 Caldecott Wildlife Corridor Study). The Caldecott Wildlife Corridor may provide a safer crossing between these habitats, allowing animal populations that may be isolated by manmade barriers to mix genes to create healthier individuals, and should be managed to benefit habitat within this corridor for the species most dependent on the Caldecott Corridor for long term survival, including the top terrestrial predators: mountain lion, bobcat, coyote, gray fox and red fox. To monitor activity of these carnivores, the District installed remote camera traps in several locations within the Preserve sub-area in July and November 2016 in various habitat types, including both control and treatment locations within the Wildfire Hazard Reduction Project Area and along the Skyline-Bay Area Ridge Trail. The purpose of the traps was to document carnivore and other wildlife movement in the "Caldecott Wildlife Corridor". Thus far, the remote camera traps have captured several carnivores and other vertebrates utilizing the Caldecott Wildlife Corridor and moving though Sibley Preserve. This is an ongoing study, with data collection continuing into the future. As such, there are no formalized written reports.

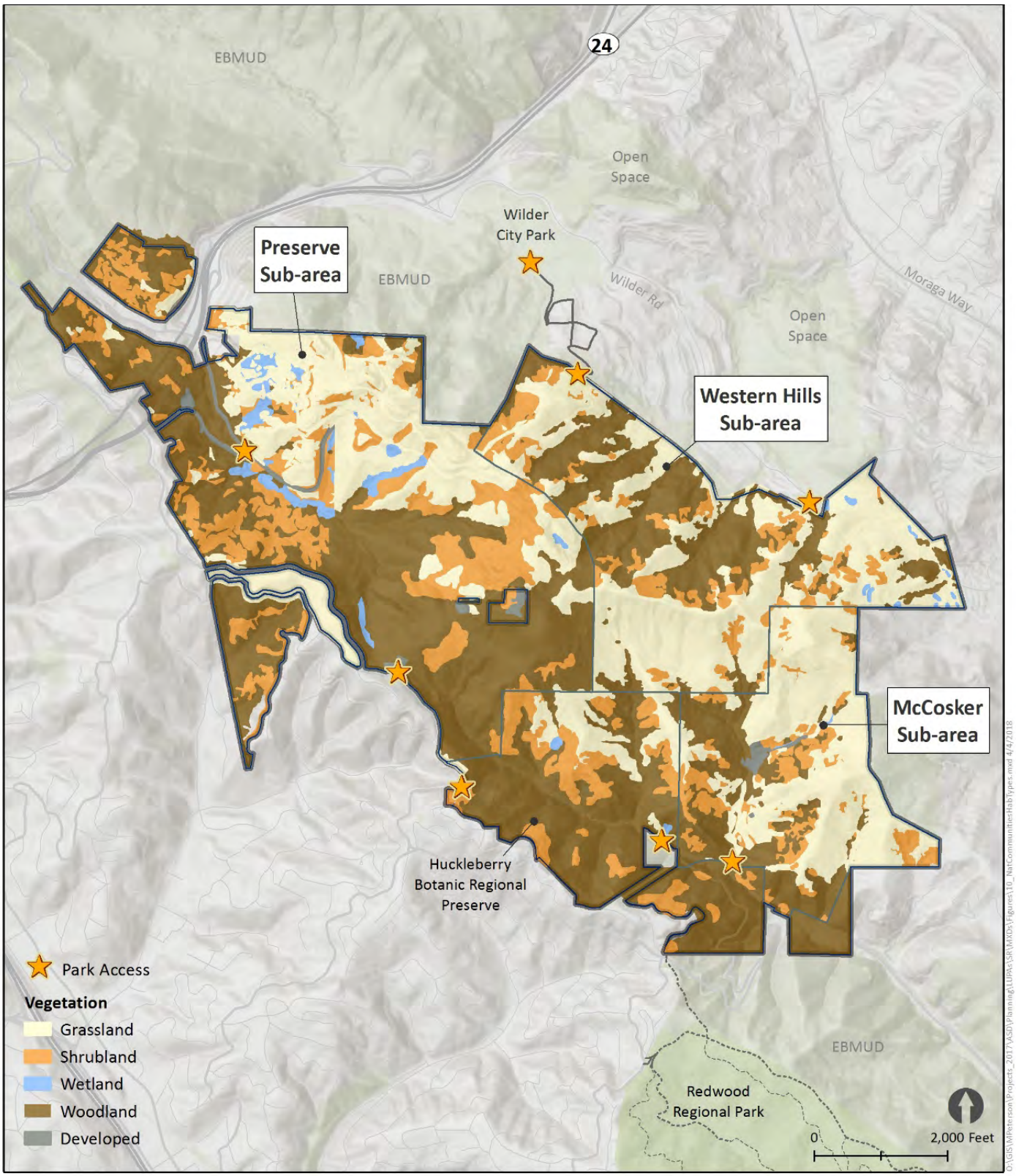

FIGURE 3.4-1: NATURAL COMMUNITIES / HABITAT TYPES

East Bay Regional Park District

LAND USE PLAN AMENDMENT
Robert Sibley Volcanic Regional Preserve

California Annual Grassland

The California annual grassland community, also known as non-native grassland, is typically composed of a dense cover of introduced annual grasses and ruderal (weedy) forbs (broad-leaved plants) adapted to colonizing and persisting in disturbed upland habitats and co-habitating in many instances with stands of California native grasses. The distribution of California annual grassland occurring in the Project area is shown in *Figure 3.4-1, Natural Communities/Habitat Types.*

Native grasses, including purple needlegrass (*Stipa pulchra*), foothill needlegrass (*Stipa lepida*), Meadow Barley (*Hordeum brachyantherum*), and California oat grass (*Danthonia californica*) occur in the Project area intermixed with the non-native species.

Non-native grasses observed in this community include wild and slender oats (*Avena barbata*), barley (*Hordeum vulgare*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), red brome (*Bromus madritensis ssp. rubens*), Medusahead (*Elymus caput-medusae*), and slender wild oat (*Avena barbata*) and an array of associated annual and perennial forbs.

In the Preserve sub-area, grasslands are concentrated primarily in the northern third of the Preserve in and around the quarries, along Gudde Ridge, and on the lower northwest-, north-, and northeast-facing slopes of Round Top. Small patches occur on the south-facing slope of Round Top and in the Sibley Triangle parcel below Skyline Boulevard.

The California annual grassland community dominates the south facing slopes of the Western Hills and McCosker sub-areas and forms part of the mosaic of woodland and scrub communities on the east facing slopes. Here, the non-native grasses are intermixed with nearly pure stands of native purple needlegrass (*Stipa pulchra*) and foothill needlegrass (*Stipa lepida*). Several grassland species found on the California Exotic Pest Plant Council list for exotic pest plants of greatest ecological concern are also intermixed with other native and non-native species. These include yellow star thistle (*Centaurea solstitialis*), Medusahead (*Elymus caput-medusae*), and black mustard (*Brassica nigra*).

Non-native grassland is also located in the McCosker sub-area in a flat, open area proposed as a combined group campsite/interpretive program site, as well as upstream of the juncture between Alder Creek and its smaller tributary, Leatherwood Creek. The grassland in the proposed recreation development area is surrounded by coyote bush (*Baccharis pilularis*), Monterey pines (*Pinus radiata*), and coast live oaks (*Quercus agrifolia*). The grassland near Alder Creek is surrounded by Douglas fir (*Pseudotsuga macrocarpa*), an unknown species of Deodar cedar tree (*Cedrus deodara*), poison hemlock (*Conium maculatum*), black mustard (*Brassica nigra*), wild radish (*Raphanus sp*.), bull thistle (*Cirsium vulgare*) and other ruderal vegetation.

This grassland community can provide cover, foraging, and nesting habitat for a variety of bird species, as well as reptiles and small mammals. Reptiles inhabiting this community may include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Elgaria multicarinata multicarinata*) and Pacific gopher snake (*Pituophis catenifer catenifer*). Birds observed in this

area included wrentit (*Chamaea fasciata*), red-tailed hawk (*Buteo jamaicensis*), barn swallow (*Hirundo rustica*), western scrub jay (*Aphelocoma californica*), common raven (*Corvus corax*) and wild turkey. Mammals common to annual grasslands include California ground squirrel, black-tailed jack rabbit (*Lepus californicus*), and Botta's pocket gopher (*Thomomys bottae*). A coyote and a wild turkey (*Meleagris gallopavo*) were observed foraging in the non-native grassland near the equipment shed during the May 16, 2016 biological survey. Despite the association of non-native grasslands with fossorial mammals, very few mammal burrows were observed at the site; those that were observed were approximately two to three inches in diameter, suitable for use by small reptiles and small rodents.

Coastal Scrub

Two types of coastal scrub vegetation occur in the Project area: coyote brush scrub and California sagebrush scrub. Both are characterized by a low, dense shrub community with scattered grassy openings. Coyote brush scrub is dominated by coyote brush, and California sagebrush scrub is dominated by California sagebrush (*Artemisia californica*). Coastal scrub commonly includes buckwheat (*Eriogonum* spp.), sage (*Salvia* spp.), bush monkeyflower (*Mimulus aurantiacus*) and poison oak. Typical wildlife species found in scrub habitat include common mammalian species such as Botta's pocket gopher, house mouse (*Mus musculus*), California vole, raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). Reptile species common to these areas include California kingsnake, Pacific gopher snake, and western fence lizard (*Sceloporus occidentalis*). These species in turn attract larger predators and scavengers, particularly to scrub edges and nearby grassland clearings. These areas provide habitat for wrentit, California scrub jay (*Aphelocoma californica*), spotted towhee, white-crowned sparrow (*Zonotrichia leucophrys*) and northern mockingbird (*Mimus polyglottos*), and also serve as a food bank of insects and seeds. These scrub communities are not considered sensitive natural communities (Sawyer et al., 2009); however, they provide core habitat for Alameda whipsnake, which is federal and state listed as threatened.

Coyote brush scrub was observed throughout the Project area, often found on west-facing slopes, where it grades into non-native grassland or oak woodland communities. Coyote brush scrub forms as a seral (successional) stage following disturbance from the removal of livestock grazing or management burns in relatively mesic sites, invading grassland and eventually being replaced by oak woodland or forest in the absence of further disturbance. California sagebrush scrub, co-dominated by bush monkeyflower and California sagebrush, was observed in one open section along the trail to be closed and restored between Sibley Preserve and Huckleberry Preserve. California fuchsia (*Epilobium canum*) was also present.

Oak Woodland

Oak Woodlands consist of a mix of trees that reach 30 to 50 feet in height. Where these woodland canopies form a dense canopy, the understory is often restricted to a few poison oak (*Toxicodendron diversilobum*) or fern plants; the total understory cover in such circumstances may drop to less than one percent. The distribution of Oak Woodlands occurring in the Project area is shown in *Figure 3.4-1, Natural Communities/Habitat Types.*

Coast live oak (*Quercus agrifolia*) and California bay laurel (*Umbellularia californica*) are the co-dominant species, with other native trees such as California buckeye (*Aesculus californica*),

big leaf maple (*Acer macrophyllum*), California black oak (*Quercus kelloggii*), and Pacific madrone (*Arbutus menziesii*) also present.

Oak Woodlands occur in the Sibley Triangle and in the canyon south of the park residence in the main unit, but the largest stands of oak woodlands occur in the drainages and canyons on the northwest slopes of Round Top.

This woodland community occurs in the upland hills along intermittent and perennial drainages that form tributaries to Brookside, Moraga and San Leandro Creeks in the Western Hills sub-area.

In the McCosker sub-area this woodland community occurs along lower sections of the access road and in the upland hills along intermittent and perennial drainages that form tributaries to San Leandro Creek.

Oak woodlands provide wildlife habitat to a number of species. Bird species common to oak woodlands include: oak titmouse (*Baeolophus inornatus*), Acorn woodpecker (*Melanerpes formicivorus*), American kestrel (*Falco sparverius*), western screech owl (*Otus kennicottii*) and California quail (*Callipepla californica*). Amphibians such as slender salamander (*Batrachoseps attenuatus*), California newt (*Taricha torosa*) and California red-legged frog (*Rana draytonii*) are known to use coastal oak woodlands as upland refugia. Reptiles that use this habitat include gopher snake (*Pituophis catenifer*), common kingsnake (*Lampropeltis getulus*), and northern alligator lizard (*Gerrhonotus coeruleus*). Mammalian species typical of coastal oak woodlands are pallid bat (*Antrozous pallidus*), California ground squirrel (*Spermophilus beecheyi*), brush rabbit (*Sylvilagus bachmani*), mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

Mixed Woodland

Mixed woodland occurs in the vicinity of the parking lot expansion at Sibley Preserve, and around the backpacker camp where the water tank will be installed, as well as in limited areas along the upper portion of the existing trail from Sibley Preserve to Huckleberry Preserve that is planned for closure and restoration. This woodland includes coast live oak and California bay, as well as coyote brush (*Baccharis pilularis*), eucalyptus, California blackberry (*Rubus ursinus*) and Monterey pine (*Pinus radiata*), but is not dominated by any single species. Wildlife species that could be present in mixed woodland include California scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), chestnut-backed chickadee (*Poecile rufescens*), dark-eyed junco and spotted towhee (*Pipilo maculatus*).

Riparian Woodland

Riparian woodlands occur alongside creeks, defined as a long, narrow body of flowing water that occupies a channel with defined bed and bank and moves to lower elevations under the force of gravity. Creeks in the Project area vary widely in the amount of surface flow depending on the season with winter storms that can result in high flows and flooding. A few of the channels supporting Riparian woodlands sustain perennial flow, many of the drainages may become intermittent during the summer dry season.

A perennial stream or creek is defined as having flowing water year-round during a typical year with groundwater providing the primary source of water for stream flow and runoff from rainfall serving as a supplemental source of water. Brookside Creek, Alder Creek and San Leandro Creek are considered perennial creeks. Intermittent creek drainages are defined as having flowing water during certain times of the year, when groundwater, supplemented by rainfall, provides water for stream flow, but these sources may not provide adequate water to sustain flows during dry periods. An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year with runoff from rainfall providing the primary source of water for stream flow. Several of the upper tributaries in the Western Hills and McCosker sub-areas are considered intermittent or ephemeral creek drainages. The distribution of Riparian Woodland occurring in the Project area is shown in *Figure 3.4-1, Natural Communities/Habitat Types*.

Riparian woodlands contain a mix of shrub and tree species, including Arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus mexicana*) and occasional occurrences of big leaf maple (*Acer macrophyllum)*, California buckeye (*Aesculus californica*), white alder (*Alnus rhombifolia*), and Fremont cottonwood (*Populus fremontii*). Blue elderberry (*Sambucus mexicana*) and Arroyo willow (*Salix lasiolepis*) constitute the largest component of the woodland on the mesic, northeast-facing slopes. This vegetation community also possesses a rich understory of poison oak (*Toxicodendron diversilobum*), blackberries (*Rubus* spp.), hazelnut (*Corylus americana*), and numerous other shrubs. Common herbaceous species include houndstongue (*Cynoglossum officinale*), sword fern (*Polystichum munitum*), wood fern (*Dryopteris* spp.) fairy bells (*Disporum hookeri*), woodland star (*Lithophragma affine*), alumroot (*Heuchera* spp.), and angelica spp.

The riparian areas also contain non-native vegetation listed on the California Exotic Pest Plant Council list for exotic pest plants of greatest ecological concern in California. These include poison hemlock (*Conium maculatum*), firethorn (*Pyracantha angustifolia*), and Himalayan blackberry (*Rubus discolor*).

In the Preserve sub-area, aquatic riparian vegetation is limited to a short strip of willows located in a drainage below the flat quarried pads in the northern half of the Preserve. Within the Western Hills and McCosker sub-areas the riparian woodlands are intermixed with the Oak/Bay woodlands along most of the major and minor drainages including the exposed sections of Alder Creek, which is dominated by a relatively dense overstory of coast live oak (*Quercus agrifolia*) and California bay *(Umbellularia californica*). Additional native tree and shrub species observed include white alder (*Alnus rhombifolia*) and elderberry (*Sambucus* sp.). The understory contains native shrubs and vines such as California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), common snowberry (*Symphoricarpos albus*) and a few patches of rushes (*Juncus* sp.)

The aquatic habitats associated with the Riparian woodlands provide a source of surface water to many terrestrial species, but their primary importance is the habitat they provide to native aquatic species, particularly amphibians and fishes. The rainbow trout inhabiting San Leandro Creek and its tributaries are descendants of steelhead that inhabited this watershed prior to the building of the Lake Chabot and subsequently, the Upper San Leandro Dam. Rainbow trout of various ages

and size classes are abundant in San Leandro Creek below the Alder Creek inlet and throughout the accessible areas of the watershed including San Leandro Creek upstream of Pinehurst Road in Huckleberry Botanic Regional Preserve. Two individual adult rainbow trout have been observed in the pool upstream of the roadway culvert, one in 2013 and one in 2016. No other suitable fish habitat was observed in the Alder Creek tributary in its current culverted state J. Sullivan, unpublished data 2016).

Wildlife species observed in the Riparian woodland around Alder Creek included American robin (*Turdus migratorius*), song sparrow (*Melospiza melodia*), western scrub jay (*Aphelocoma californica*), spotted towhee (*Pipilo maculatus*) and chestnut-backed chickadee (*Poecile rufescens*). Other species common to riparian woodland are black phoebe (*Sayornis nigricans*), cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), warbling vireo (*Vireo gilvus*), Bewick's wren (*Thryomanes bewickii*), Pacific-slope flycatcher (*Empidonax difficilis*), olive-sided flycatcher (*Contopus cooperi*), northern flicker (*Colaptes auratus*) orange-crowned warbler (*Oreothlypis celata*), western screech owl (*Megascops kennicottii*), and northern saw-whet owl (*Aegolius acadicus*). Common and special-status bats may also roost in tree cavities or beneath the bark of the mature trees and terrestrial mammals, such as deer mouse (*Peromyscus* sp.) and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), will forage and create nests in the woodland understory. Amphibians that may use the creek corridor of the Project area include California red-legged frog (*Rana draytonii*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), California newt (*Taricha torosa*) and rough-skinned newt (*Taricha granulosa*).

McCosker Sub-area Perennial Creek (Alder Creek and Tributary)

The tributaries to San Leandro Creek that drain the south-facing slopes of the Western Hills and McCosker sub-areas represent a substantial source of water for San Leandro Creek and will be a resource to native rainbow trout and other riparian species once the main tributary (Alder Creek) that drains these tributaries is restored.

Currently Alder Creek is largely contained in closed concrete and metal pipes. From the northern end of the McCosker sub-area recreation development area, Alder Creek flows alternately above ground and in culverts for approximately 2,900 feet. The northern, or upstream, portion of Alder Creek begins as a narrow, somewhat incised channel with a substrate of cobbles and large rocks with no floodplain. The creek channel soon grows wider and a modest floodplain is present. The channel substrate includes cobbles, large rocks and silt and the banks are populated with ferns, poison oak, rushes, hedge nettle (*Stachys bullata*), forget-me-not (*Myosotis discolor*), and California blackberry (*Rubus ursinus*). At the time of the May 2016 and July 2017 surveys, small- to medium-sized shallow (<12 inches) pools were present along the above-ground sections of the northern section of the creek, especially at culvert openings. Some woody debris was observed at low-flow points, though in-stream vegetation was minimal. These pools can provide habitat for California red-legged frog (*Rana draytonii*), California newt (*Taricha torosa*) and other herpetofauna. Alder Creek flows underground and exits a culvert just upstream of the McCosker park residence, where it is joined by a small tributary. The tributary exits a culvert and flows above ground in a deeply incised and eroded channel for approximately 50 feet before merging with Alder Creek.

After the eastern and western branches of Alder Creek converge near the park residence the creek flows above ground for approximately 63 feet and then continues underground in buried, and partially filled and collapsing culverts for approximately 2,460 feet until it reaches the southern end of the Project area. The underground sections of Alder Creek are below annual grasslands, and ruderal and developed habitats. At the southern terminus of Alder Creek, water flows out of a culvert and into a plunge pool, approximately three feet deep and surrounded by relatively steep rock walls, before flowing under Pinehurst Road through a 116-foot (35.4-meter) long culvert to join San Leandro Creek.

When these pools were surveyed in August 2012, Alder Creek supplied 24 gallons of water per minute to San Leandro Creek. By comparison, San Leandro Creek above the Alder Creek tributary had a surface flow of 16.5 gallons per minute. Water quality parameters (temperature; conductivity; turbidity and dissolved oxygen) for the Alder Creek tributary, as well as the San Leandro Creek water, were all within normal range.

South of the McCosker sub-area, the culvert under Pinehurst Road extending into the Huckleberry Botanic Preserve is 170 feet (51.7 meters) in length. This culvert presents a formidable barrier to upstream migration for most of the adult rainbow trout seeking to spawn in Huckleberry Botanic Preserve during very low or very high flows. However, rainbow trout of all life stages have been observed in this segment of San Leandro Creek upstream of the Pinehurst Road culvert during annual surveys from 2012-2016 (J. Sullivan, unpublished data, 2016).

Wetlands

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes, herbaceous species that grow in perennially or seasonally flooded, ponded, or saturated soil conditions; 2) the substrate is predominantly undrained hydric soil; and 3) the substrate is saturated with water or covered by shallow water at some time during the growing season of each year. Wetlands can include both permanent and seasonal wetland types with permanent wetlands (also referred to as perennial wetlands) characterized by a year-round water source. Seasonal wetlands support ponded or saturated soil conditions during winter and spring and are dry through the summer and fall until the first substantial rainfall. Water sources leading to the creation of seasonal wetlands include precipitation, runoff, and groundwater. Groundwater seepage at the interface of the Siesta and Moraga geologic formations serves as the hydrologic sources for the seep wetlands found in the Western Hills and McCosker sub-areas. Jurisdictional wetlands in the form of seep wetlands and constructed seasonal wetlands occur within the Project area primarily within the Western Hills and the McCosker sub-areas. Constructed seasonal wetlands are limited the Western Hills sub-area and were constructed as mitigation for impacts associated with the Wilder residential development. A ten-year monitoring period has been completed for each of these wetlands and no development is proposed within these constructed wetlands.

The most common native wetland species found in the seasonal seep wetland areas are soft rush (*Juncus effusus*), creeping wild rye (*Leymus triticoides*), monkey flower (*Mimulus guttatus*), watercress (*Nasturtium officinale*), and yellow-eyed grass (*Sisyrinchium californicum*). Other

herbaceous vegetation includes Monterey centaurey (*Zeltnera muehlenbergii*), tall flat sedge (*Cyperus eragrositis*), creeping spikerush (*Eleocharis macrostachya*), hairy willow herb (*Epilobium ciliatum* spp. *watsonii*), toad rush, (*Juncus bufonius*), iris-leaf rush *(J. xiphioides*), California buttercup (*Ranunculus californicus*), cattails (*Typha latifolia*), arroyo willow (*Salix lasiolepis*), and pennyroyal (*Mentha pulegium*). Non-native vegetation includes annual ryegrass (*Festuca perennis*), brisly ox-tongue (*Picris echioides*), spiny-fruited buttercup (*Ranunculus muricatus*), curly dock (*Rumex crispus*), rabbitfoot grass (*Polypogon monspeliensis*), purple loosestrife (*Lythrum salicaria*), brass buttons (*Cotula coronopifolia*) and English plantain (*Plantago lanceolata*). Substantial Santa Barbara sedge (*Carex barbarae*) dominates at least one upper wetland and meadow barley (*Hordeum brachyantherum*) is present in the lower wetland near barn.

Wildlife species observed or having a high potential to occur in and around wetlands include water birds that feed on aquatic vegetation, insects, other invertebrates, and amphibians. Wading and shorebirds that may occur on the site include great blue heron (*Ardea herodias*), greater yellowlegs (*Tringa melanoleuca)*, common snipe (*Gallinago gallinago*) and killdeer (*Charadrius vociferous*). Reptiles and amphibians are also likely to visit these areas; species such as California newt (*Taricha torosa*) and western aquatic garter snake (*Thamnophis couchii*) may inhabit the shoreline (City of Orinda, 1998). However, these species are more likely to occur in larger wetlands than in depressions or seeps along the trail (ESA, 2018). Although no mammals are expected to inhabit these aquatic environments, they may provide water sources and foraging habitat for several species.

Tree Plantations

Alterations to natural communities in the Project area have included the introduction of non-native Monterey pine and a variety of eucalyptus species in the Preserve sub-area. Today large stands or plantations of pine and eucalyptus trees have created mono-cultures primarily in the Preserve sub-area. The distribution of large tree groupings or "plantations" occur in the Project area is shown in *Figure 3.4-1, Natural Communities/Habitat Types*.

Red gum (*Eucalyptus camaldulensis*) and blue gum (*Eucalyptus globulus*) eucalyptus are present as maverick trees and in plantations. Eucalyptus plantations occur in both Thornhill Canyon and the main unit of the Robert Sibley Volcanic Regional Preserve. Large blocks of these trees stand along the east boundary below Round Top, on the top of the knoll west of the water tank, on the western slopes and at the bottom of the drainage below the Sibley Main Staging Area. The rapid growth to a height of 80 to 140 feet and high rate of reproduction of these eucalyptus trees have resulted in their complete dominance in large portions of the Preserve sub-area, especially near Round Top. The understory of closed-canopy mature eucalyptus often supports few, if any, other species of plants. These invasive trees out-compete native species by shading and by producing a dense leaf- and bark-litter on the ground, which contains oils that prevent most other plants from becoming established.

Monterey pine (*Pinus radiata*) were also planted in early 1900s and presently occur as mature groves of varying densities throughout the Preserve sub-area and on Skyline Road northwest of the Main Sibley Staging Area, along with cypress trees. Many of these planted and naturalized stands are now dying due to age and disease.

Developed/Ruderal

Developed areas within the Preserve sub-area include: parking lots, an interpretive pavilion; ten miles of trails for hiking, dog walking, and equestrian use, including a section of the Skyline National Trail (Bay Area Ridge Trail/Anza Trail) and a 1.5-mile self-guided tour of the Round Top Volcano; a backpack camp, two park security residences, and a park office. One park residence is located at the Sibley Main Staging Area. A second structure, serving as a park residence and staff office, is located at the terminus of Old Tunnel Road. Various ornamental trees and shrubs have been planted in the area around the two park residences and park office.

Development in the Western Hills sub-area is primarily limited to ranch roads/trails and grazing infrastructure. No stands of ornamental trees and shrubs are contained within this sub-area.

The McCosker sub-area was held as a family residence and business for several decades. During this time, the family farmed a portion of the land for their own purposes and planted ornamental trees and shrubs in the lower areas of the property. Development during this period included: a residence, now adapted to a District park residence; roads, now incorporated into the park circulation system; and infrastructure relating to a rock crushing and construction business, including a metal equipment shed that has been incorporated into an equipment shed to support District maintenance of this sub-area.

A pullout exists alongside Pinehurst Road at the entrance to the McCosker sub-area, which is also adjacent to a short daylighted section of Alder Creek. A packed gravel road winds through the Project area from the entrance until just past the park residence. This road is adjacent to the proposed daylighted creek. It will be used for site access and forms a part of the trail system. The road also continues to provide access to the park residence. This road crosses underground sections, and parallels above-ground sections, of Alder Creek. A dirt road leads from the end of the gravel loop uphill along the planned route for the daylighted tributary, which is currently underground. A section of gravel road approximately 900 feet from the entrance gate winds its way uphill for approximately 600 hundred feet, terminating at a metal equipment shed currently used by the District for storage.

Ruderal vegetation, including poison hemlock (*Conium maculatum*), black mustard (*Brassica nigra*), wild radish (*Raphanus sativus*), and bull thistle (*Cirsium vulgare*), grows along the edges of the road. The tile roof of the residence could provide roosting habitat for Yuma myotis (*Myotis yumanensis*), a cavity-nesting bat. Some species of birds, such as cliff swallow (*Petrochelidon pyrrhonata*) and black phoebe, also nest under eaves. A long, narrow pile of rocks near the equipment shed could attract small mammals and reptiles. Where the equipment shed's roof meets the exterior walls at each corner, a cavity is present that could attract cavity-nesting birds or roosting bats.

Remnants of a small "kitchen orchard" remain at the base of the slope leading up to the barn site. Near the McCosker park residence, tributaries to San Leandro Creek support cultivated, non-native species, including cedar (*Cedrus spp*.), redwood (*Sequoia sempervirens*), pine (*Pinus spp*.), and Lombardy poplar (*Populus nigra 'Italica'*).

PG&E high voltage transmission line cross all three sub-areas. One PG&E high voltage transmission line crosses the Preserve sub-area north of the park entrance along Grizzly Peak Boulevard. The Western Hills sub-area contains four sets of parallel 115kV power lines that cross the space east-to-west suspended from larger towers. In addition, two sets of similar PG&E high voltage transmission lines and towers traverse the McCosker sub-area from southwest to northwest. Vegetation under the towers is managed by PG&E as part of the maintenance of the towers.

Special-status Species

The phrase "special-status species" is term-of-art used by the scientific community to describe plant and wildlife species that are considered sufficiently rare that they require special consideration and/or protection and should be, or have been, listed as rare, threatened or endangered by the federal and/or State governments. Such species are legally protected under the federal and/or State Endangered Species Acts, or other regulations, or are species that are considered sufficiently rare by the regulatory and scientific community to qualify for protection. The term special-status species includes the following:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [FR] [proposed species]);
- Species that are candidates for possible future listing as threatened or endangered under the federal Endangered Species Act (61 FR 40, February 28, 1996);
- Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Animal species of special concern to CDFW;
- Animals fully protected under Fish and Game Code (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
- Species that meet the definitions of rare and endangered under CEQA. CEQA Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists (State CEQA Guidelines, Section 15380); and
- Plants considered under the CDFW and CNPS to be "rare, threatened or endangered in California" (California Rare Plant Rank [CRPR] 1A, 1B, and 2).
- Marine species managed and regulated under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act or MSA);
- Marine species protected under the Marine Mammals Protection Act (MMPA);

A comprehensive list of special-status species that have the potential to occur within the vicinity of the Project site was compiled from the California Natural Diversity Database (CNDDB) (CDFW, 2018a), the USFWS *Official List of Federal Endangered and Threatened Species that Occur in or may be Affected by the Projects* (USFWS, 2018), and the CNPS Online Inventory of

Rare and Endangered Plants (CNPS) (CNPS, 2018) (see *Appendix C, Plant and Wildlife Species Lists for the Project Area*).

Special-status plants that are documented to occur within three miles of the Project include Marin knotweed (*Polygonum marinense*), fragrant fritillary (*Fritillaria liliacea*), pallid manzanita, Presidio clarkia (*Clarkia franciscana*), San Francisco popcornflower (*Plagiobothrys diffusus*), bent-flowered fiddleneck (*Amsinckia lunaris*) and Oakland star-tulip (*Calochortus umbellatus*) (See *Figure 3.4-2, Plant CNDDB Occurrences)*; however, not all of these species are considered to have high potential to occur on the Project area.

Special-status wildlife documented within three miles of the Project include Alameda whipsnake, California red-legged frog, foothill yellow-legged frog,[3] Bay checkerspot butterfly (*Euphydryas editha bayensis*), golden eagle (*Aquila chrysaetos*), American peregrine falcon (*Falco peregrinus*), Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), hoary bat (*Lasiurus cinereus*), pallid bat, silver-haired bat (*Lasionycteris noctivagans*), Townsend's big-eared bat (*Corynorhinus townsendii*), western pond turtle (*Actinemys marmorata*) and American badger (*Taxidea taxus*) (See *Figure 3.4-3, Wildlife CNDDB Occurrences*). In addition, Alameda whipsnake critical habitat occurs within the Project area.

The potential for the Project area to support special-status plant or wildlife species was assessed using database results, previous studies of biological resources in the regional vicinity, ESA's reconnaissance surveys on May 19, 2016, and July 5, 6, 11, September 25, October 15, 2017 and April 23, 2018; a foothill yellow-legged frog survey conducted by Dr. Sarah Kupferberg, a consulting expert on foothill yellow-legged frog, and Tammy Lim, biologist with the District, on April 20, 2018; and, limited field surveys conducted during the Spring of 2013 and 2017 by District biologists. The District monitors special-status species and maps locations of sightings on a routine basis. Focused, in-season rare plant surveys were not performed as part of this assessment.

The Project study area included the Project area, plus a 50-foot buffer. It was then determined whether there is a low, moderate, or high potential for species occurrence in the study area of the Project site based on previous special-status species record locations, known ranges, and current site conditions. Only species with a moderate or high potential for occurrence are included in *Table 3.4-6, Special-status Species with a Moderate to High Potential to Occur in the Study Area*. The comprehensive Potential to Occur (PTO) table is provided in *Appendix C, Plant and Wildlife Species Lists for the Project Area*.

[3] This CNDDB observation is controversial and District biologists believe it may have been a misidentification. The District conducted a visual and dipnet survey along Alder Creek and Leatherwood Creek on April 20, 2018, and did not observe foothill yellow-legged frog in any life stage.

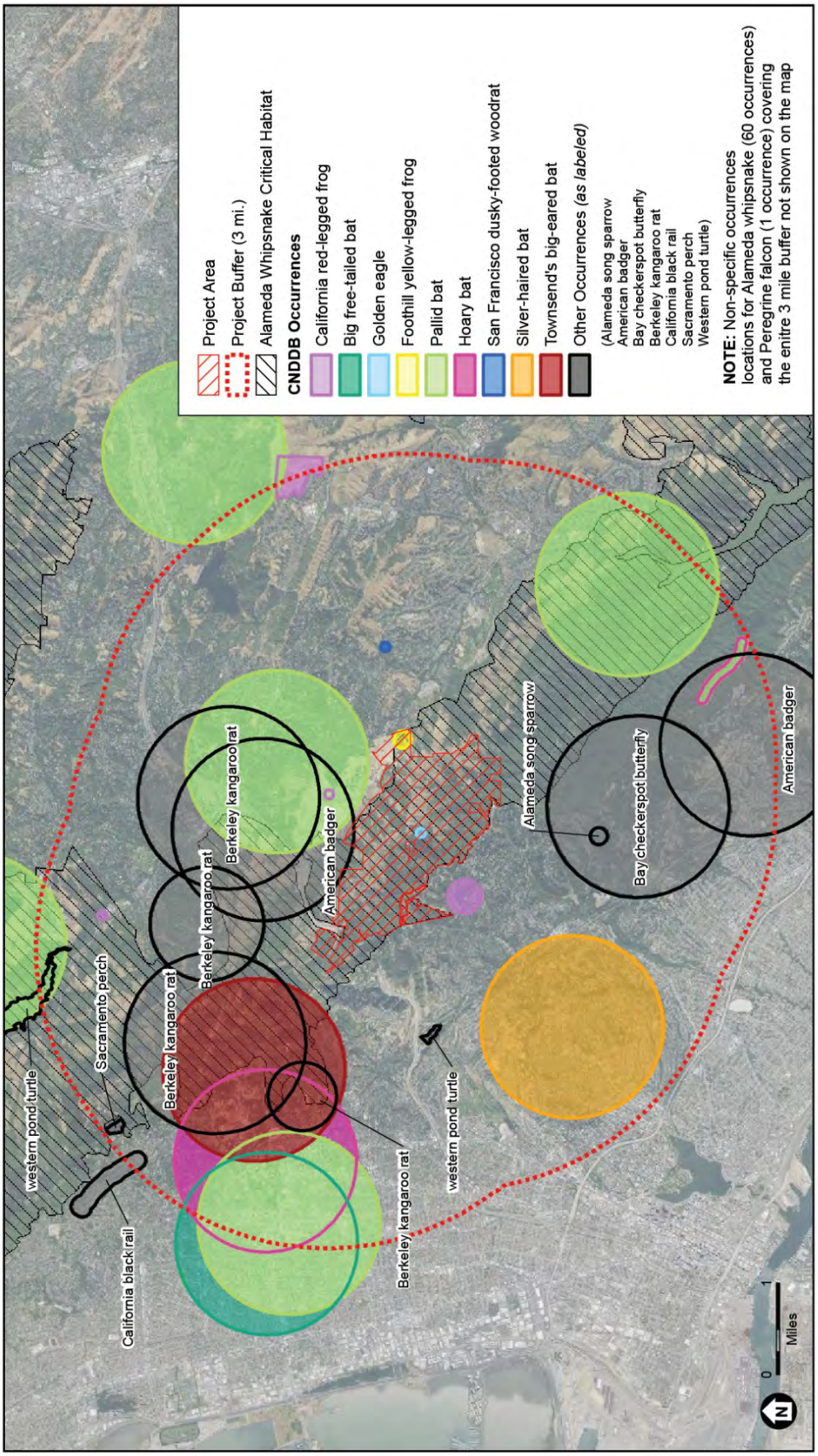

FIGURE 3.4-2: CNDDB OCCURRENCES (WILDLIFE)

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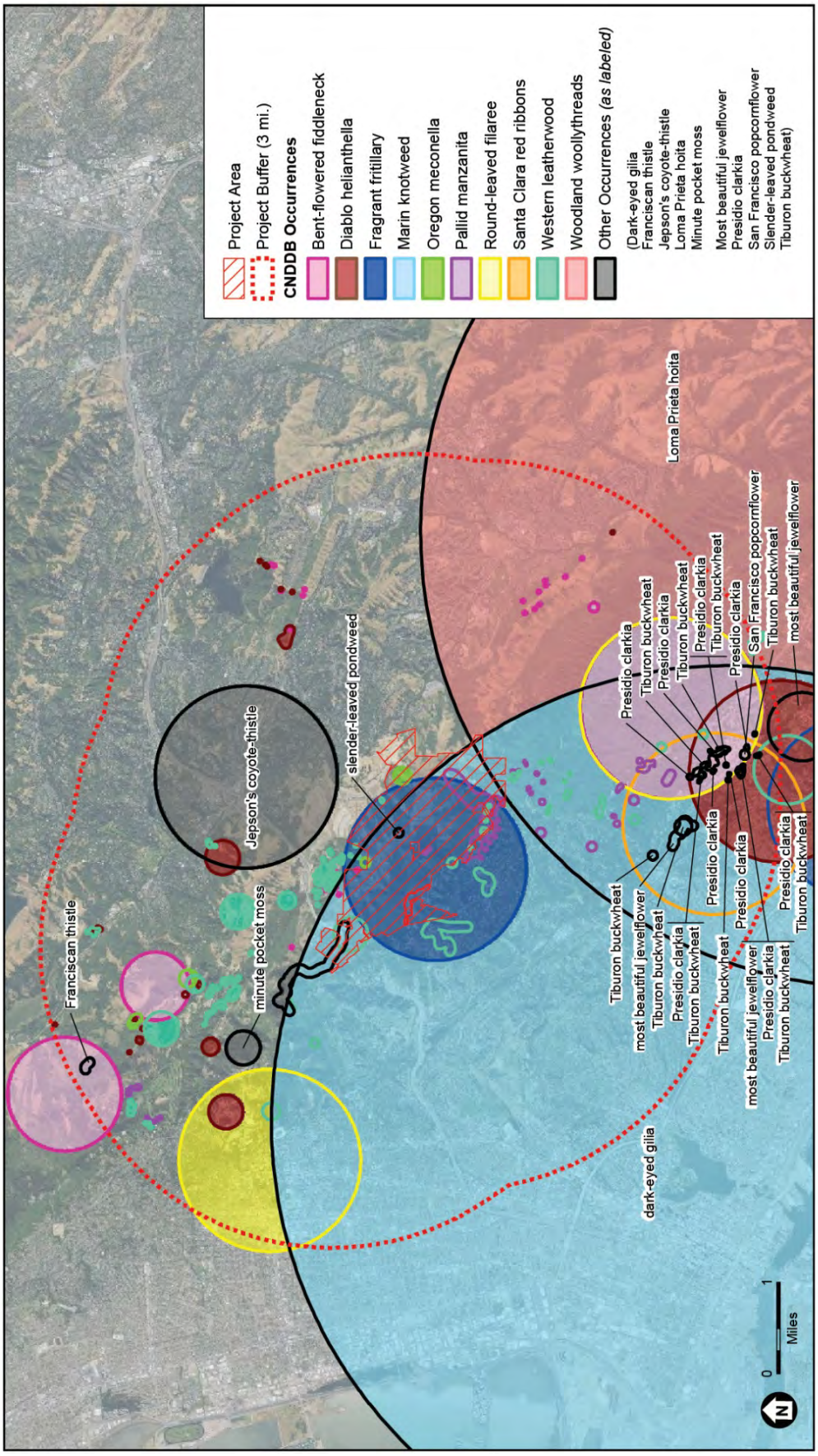

FIGURE 3.4-3: CNDDB OCCURRENCES (PLANTS)

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

East Bay Regional Park District

TABLE 3.4-6
SPECIAL-STATUS SPECIES WITH A MODERATE TO HIGH POTENTIAL TO OCCUR IN THE STUDY AREA

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	Habitat Description / Blooming Period	Potential to Occur in the Study Area
SPECIES LISTED OR PROPOSED FOR LISTING			
Plants			
Pallid manzanita *Arctostaphylos pallida*	FT/CE/1B.1	Broad-leaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub; 185-465 m. Blooms December - March.	**High.** Suitable habitat exists in study area and CNDDB observations have been reported in the vicinity of the study area.
Amphibians			
California red-legged frog *Rana draytonii*	FT/CSC/--	Streams, freshwater pools, and ponds with overhanging vegetation. Also found in woods adjacent to streams. Requires permanent or ephemeral water sources such as reservoirs and slow moving streams and needs pools of >0.5 m depth for breeding.	**Moderate (non-breeding) to Low (breeding).** Presence of pools within Alder Creek with overhanging banks and vegetation, as well as riparian woodland, provide suitable general habitat for this species; breeding habitat is marginal due to a lack of emergent vegetation. One recent (1997) CNDDB record of adult CRLF on the banks of an outlet pool at a culvert in a seasonal tributary.
Reptiles			
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/CT/--	Coastal ranges, in chaparral and riparian habitat and adjacent grasslands.	**High.** Species is known to use grasslands, woodlands, and other non-scrub habitat, which is present in the watershed. The study area is in Critical Habitat designated for this species and non-site-specific observations are recorded in the vicinity of the Project area (exact locations are not provided to protect the species). Many non-specific but recent CNDDB records of AWS within 3 miles of the study area. The District knows this species to occur in the study area.
OTHER SPECIAL-STATUS SPECIES			
Plants			
Bent-flowered fiddleneck *Amsinckia lunaris*	--/--/1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. 30 – 680m. Bloom period March – June.	**High.** Recent Calflora observations on north edge of study area.
Big-scale balsamroot *Balsamorhiza macrolepis*	--/--/1B.2	Cismontane woodland, grassland. 90 – 1740 m. Blooms March – June	**Low to Moderate.** Suitable habitat could be found in relatively undisturbed grasslands; however, no recent observations of this species exist in or near the study area.
Big tarplant *Blepharizonia plumosa*	--/--/1B.1	Valley and foothill grasslands, usually clay. 9 – 470m. Blooms July – October.	**Low to Moderate.** Suitable habitat could be present in relatively undisturbed grasslands; however, nearest occurrence is over 3 miles away and is presumed extirpated.

Common Name ***Scientific Name***	**Listing Status USFWS/ CDFW/Other**	**Habitat Description / Blooming Period**	**Potential to Occur in the Study Area**
Round-leaved filaree *California macrophylla*	--/--/1B.2	Valley grassland and foothill woodland. 15 – 1200m. Blooms March – May	**Moderate.** Suitable habitat could be present in relatively undisturbed grasslands.
Mt. Diablo fairy lantern *Calochortus pulchellus*	--/--/1B.2	Chaparral, valley grassland, foothill woodland. 60 – 780 m. Blooms April – June.	**Low to Moderate.** Suitable habitat could be present in relatively undisturbed grasslands; however, nearest occurrence is over 4 miles away.
Oakland star-tulip *Calochortus umbellatus*	--/--/4.2	Chaparral, valley grassland, yellow pine forest and mixed evergreen forest. Has an affinity to serpentine soils. Blooms March - May	**Low to Moderate.** Suitable habitat may exist in vicinity of study area if serpentine soils present. Observations from the 1980s have been recorded in Calflora in Redwood Regional Park, approximately 2.5 miles from study area.
Santa Clara red-ribbons *Clarkia concinna* ssp. *automixa*	--/--/4.3	Cismontane woodland, chaparral. Found on slopes and near drainages. 90-1500m. Blooms May – June.	**Low to Moderate.** Suitable habitat present; however, no occurrences reported in vicinity of Project area.
Western leatherwood *Dirca occidentalis*	--/--/1B.2	Chaparral, foothill woodland, mixed evergreen forest, broadleaved upland forest, closed-cone pine forest, north coastal coniferous forest, and wetland-riparian areas. Equally likely to occur in wetlands and non-wetlands. 12 – 560m. Blooms January – March.	**High.** Suitable habitat is found in the Project study area. Occurrences documented within the study area. Presumed extant in the area.
Fragrant fritillary *Fritillaria liliacea*	--/--/1B.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; heavy clay soils, often serpentinite. Blooms February – April.	**Low to Moderate.** Observation in CNDDB overlaps with study area; however, date of occurrence and exact location are unknown, and species identification “very questionable”.
Diablo helianthella *Helianthella castanea*	--/--/1B.2	Broad-leafed upland forest, chaparral, cismontaine woodland, coastal scrub, riparian woodland, valley and foothill grassland; 20 – 960 m. Blooms March – June.	**Moderate.** Suitable habitat present.
Oregon meconella *Meconella oregana*	--/--/1B.1	Shaded canyons. Blooms March – May.	**High.** Suitable habit present and several observations in the vicinity of the study area.
Mt. Diablo cottonweed *Micropus amphibolus*	--/--/3.2	Valley grassland, foothill woodlands and mixed evergreen forest. Has an affinity to serpentine soils Blooms March - May	**Low to Moderate.** Suitable habit present; however, no recent observations in the vicinity of the study area.
Woodland woollythreads *Monolopia gracilens*	--/--/1B.2	Mixed evergreen forest, broadleaved upland forest, redwood forest, and chaparral, and valley and foothill grasslands. Affinity to serpentine soil. 60 – 1360m. Blooms March – July	**Low to Moderate.** Suitable habit present; however, no recent observations in the vicinity of the study area.
Oval-leaved viburnum *Viburnum ellipticum*	--/--/2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 100 – 1160m. Blooms May – June.	**Low to Moderate.** Suitable habit present; however, no observations reported within 5 miles of the study area.

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	Habitat Description / Blooming Period	Potential to Occur in the Study Area
Invertebrates			
Monarch butterfly *Danaus plexippus* (wintering sites)	--/*/--	Eucalyptus groves (winter sites). Period of identification: Winter	**Moderate.** Eucalyptus groves that could support overwintering monarchs are present in the Project study area.
Birds			
Cooper's hawk *Accipiter cooperii*	--/WL/--	Nests in riparian areas and oak woodlands, and hunts songbirds at woodland edges.	**High.** Suitable nesting habitat is present in the Project study area.
Sharp-shinned hawk *Accipiter striatus*	--/WL/--	Nests in dense groves of usually midsized conifers, in the tops of live oaks, and sometimes deciduous trees. Usually on hilltops or hillsides, near grasslands or chaparral, but typically not water. Hunts songbirds along edge habitat.	**High.** Suitable nesting habitat is present in the Project study area.
Golden eagle *Aquila chrysaetos*	BCC/FP,WL/--	Nests in cliffs, canyons and large trees in open habitats	**High.** Suitable nesting habitat is present in the Project study area. A golden eagle nest site has been used consistently since 2005 in Sibley Volcanic Regional Preserve, and documented by the District.
Northern harrier *Circus cyaneus*	--/CSC/--	Nests on ground in salt or freshwater wetlands, forages over wetlands, annual grasslands.	**Low (nesting)/ High (foraging).** Suitable nesting habitat not found in the study area. Species may use adjacent grasslands for foraging. Has been observed by District staff in study area.
White-tailed kite *Elanus leucurus*	--/FP/--	Nests in shrubs and trees next to grasslands, forages over grasslands and agricultural lands.	**High.** Suitable nesting habitat present on margins of Project study area. District has observed breeding.
American peregrine falcon *Falco peregrinus anatum*	FD/CD, FP/--	Breeds near water with nearby vertical structure such as niches in steep banks and ledges, bridges or high-rise buildings to serve as nesting sites.	**Unlikely (nesting)/ Moderate (non-breeding).** Suitable habitat not present in the study area; only nest site documented within 3 miles of the study area was in an urban structure.
Mammals			
Pallid bat *Antrozous pallidus*	--/CSC/ WBWG High	Most common in open, dry habitats with rocky areas for roosting. Roosts in buildings, caves, or cracks in rocks. Forages primarily on the ground.	**Moderate.** The District reports that this species is present in the area. Several collections of specimens reported in CNDDB in the 1930s and 1940s, from locations ~1-3 mi from the study area. May enter site to forage. The District knows this species to occur here.
Silver-haired bat *Lasionycteris noctivagans*	--/*/ WBWG Medium	Primarily a coastal and montane forest dweller. Roosts in dense foliage of trees, in hollow trees, beneath exfoliating bark, abandoned woodpecker holes and rarely under rocks. Needs drinking water.	**Moderate**. Suitable roosting habitat present on site. Nearest occurrence reported in CNDDB in 1920 is approximately 2.3 miles from the study area.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/CSC/--	Regional subspecies with range limited to San Francisco Bay Area. Inhabits forests with moderate canopy cover and brushy understory.	**High.** Dusky-footed woodrat nests were observed within the Project study area, and according to the CNDDB this species was observed ~1.5 mi from the study area. This species has been observed by District staff in the study area.

Common Name *Scientific Name*	**Listing Status USFWS/ CDFW/Other**	**Habitat Description / Blooming Period**	**Potential to Occur in the Study Area**

NOTES:

a Potential to Occur Categories:
Unlikely = Study area and/or immediate vicinity do not support suitable habitat for a particular species. Study area is outside of the species known range. Species identified as unlikely to occur are not addressed further in the Habitat Assessment.
Low Potential = The study area and/or immediate vicinity only provide limited habitat. In addition, the species' known range may be outside of the study area.
Moderate Potential = The study area and/or immediate vicinity provide suitable habitat.
High Potential = The study area and/or immediate vicinity provide ideal habitat conditions.

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service)
FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.
BCC = Bird of Conservation Concern
FSC = Federal Species of Concern
FC = Candidate for federal listing
FD= Delisted

STATE:
CT = Listed as Threatened by the State of California
CE= Listed as Endangered by the State of California
CC = California Candidate for Listing
CSC = California Species of Special Concern
FP= California Department of Fish and Wildlife designated "fully protected"
CD – delisted

WL = Watch list
§3503.5 = Protection for nesting species of Falconiformes (hawks) and Strigiformes (owls)
* Special animal-listed on CDFW's Special Animal List

OTHER:

California Native Plant Society (CNPS) California Rare Plant Ranks (CRPR):
1A = Presumed extirpated in California; Rare or extinct in other parts of its range.
1B = Rare, threatened, or endangered throughout range; Most species in this rank are endemic to California.
2A = Extirpated in California, but common in other parts of its range.
2B = Rare, threatened, or endangered in California but common in other parts of its range.
3 = Need more information about species to assign it a ranking.
4 = Limited distribution and therefore warrants monitoring of status.
.1 = Seriously endangered in California
.2 = Fairly endangered in California
LS= Locally Significant Species

WBWG = Western Bat Working Group:
Low = Stable population
Medium = Need more information about the species, possible threats, and protective actions to implement.
High= Imperiled or at high risk of imperilment.

Xerces Society for Invertebrate Conservation (Xerces)
CI = Critically imperiled
IM = Imperiled
VU = Vulnerable
DD = Data Deficit

Special-Status Plants

The following special-status plants were determined to have a **high** potential to occur within or adjacent to the Project area: Pallid manzanita (*Arctostaphylos pallida*), Bent-flowered fiddleneck (*Amsinckia lunaris*), Western leatherwood (*Dirca occidentalis*), and Oregon meconella (*Meconella oregana*).

The following special-status plants were determined to have a **moderate** potential to occur within or adjacent to the Project area: Big-scale balsamroot (*Balsamorhiza macrolepis*), Big tarplant (*Blepharizonia plumosa*), Round-leaved filaree (*California macrophylla*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), Santa Clara red-ribbons (*Clarkia concinna ssp. automixa*), Fragrant fritillary (*Fritillaria liliacea*), Diablo helianthella (*Helianthella castanea*), Mt. Diablo cottonweed (*Micropus amphiboles*), Woodland woollythreads (*Monolopia congdonii*), Oval-leaved viburnum (*Viburnum ellipticum),* and Oakland star tulip (*Calochortus umbellatus*).

A description of the special status plants with a **high** potential to occur within or adjacent to the Project area follows.

Pallid Manzanita

Pallid manzanita is a federal-listed threatened and state-listed endangered plant that also has a CRPR 1B.1. This species is found in maritime chaparral, foothill woodland and mixed evergreen forest at elevations from 525 to 1608 feet. Locally, this species occurs in the East Bay hills from Sobrante Ridge in the north to Redwood Regional Park in the south. Although the historical range has not changed considerably, the extant populations have become smaller, likely due to habitat loss and fragmentation. Two large populations remain, one at Huckleberry Ridge and one at Sobrante Ridge. Small populations occur on East Ridge above Pinehurst Road on land owned by the EBMUD, Chabot Space and Science Center, and Joaquin Miller Park. In 1992, three pallid manzanitas were discovered in the Preserve sub-area (USFWS, 2003). The CNDDB indicates observations of colonies of this species made in 2016 in Huckleberry Botanic Regional Preserve immediately adjacent to the Project area (CDFW, 2018a). Pallid manzanita (*Arctostaphylos pallida*) was observed in the Project area near the southern portion of the Round Top Loop Trail in the Preserve sub-area during 2017 surveys of the Project area. No observations of this species have been made in the Western Hills or McCosker sub-areas during the plant surveys conducted of the Project area. The District is currently engaged in the implementation of a pallid manzanita (*Arctostaphylos pallida*) management plan for all populations of this species, including Huckleberry Botanic Regional Preserve.

Bent-flowered Fiddleneck

Bent-flowered fiddleneck is a CRPR rank 1B.2 annual forb in the forget-me-not family (*Boraginaceae*) that blooms from March to June. It typically occurs in open areas within cismontane woodland, valley and foothill grassland, and coastal bluff scrub habitat often underlain by clay substrate at elevations ranging from 10 to 1625 feet. A group of observations from 2003 are recorded in the CNDDB as occurring on Gudde Ridge, approximately 2.5 miles from the Project area in the Western Hills sub-area (CDFW, 2018a). Bent-flowered fiddleneck is

considered to have a high potential to occur in the Project area's grassland and open woodland habitats that are relatively undisturbed and have known associated species.

Western Leatherwood

Western leatherwood is a CRPR rank 1B.2 shrub in the family Thymelaeaceae that blooms between January and March and is considered to have a high potential to occur within the riparian and Oak/Bay woodlands within the Project area. General habitat for this species includes mesic sites within broadleaf upland forest and brushy slopes. It is mostly found in mixed evergreen and foothill woodland communities at elevations between 39 and 1837 feet. Suitable habitat is found in the Project area. Occurrences are documented in the region, including in the upper Moraga Creek area of the Western Hills sub-area (City of Orinda, 2001), and in the woodland adjacent to the proposed south tributary creek restoration improvement identified as one element of the Project in the McCosker sub-area (CDFW, 2018a; Calflora, 2018, and District observations 2017).

Oregon Meconella

Oregon meconella, also known as white fairy poppy, is a CRPR rank 1B.1 annual herb in the poppy family (*Papaveraceae*) that blooms between March and May. This species inhabits shaded canyons at elevations between 1,116 and 2,133 feet. Suitable habitat is present within the Project study area and several observations are recorded from 0.25 to 0.5-mile of the Project area (CDFW, 2018a; Calflora, 2018) Oregon meconella is considered to have a high potential to occur within the riparian woodland habitat in the Project area.

The following special-status plants were determined to have a low-to-moderate potential to occur within or adjacent to the study area: Big-scale balsamroot (*Balsamorhiza macrolepis*), big tarplant (*Blepharizonia plumosa*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*), Fragrant fritillary (*Fritillaria liliacea*), Mt. Diablo cottonweed (*Micropus amphibolus*), Woodland woolythreads (*Monolopia gracilens*), oval-leaved viburnum (*Viburnum ellipticum*), and Oakland start tulip (*Calochortus umbellatus*). Suitable habitat for each of these species is present within the Project area; however, there are either no observations of the species recorded within two miles of the study area, the observation is over 100 years old, or the species identification is unconfirmed or questionable so are not discussed further.

Special Status Wildlife

Special-status wildlife species with a moderate to high potential to occur in the study area include: Alameda whipsnake (*Masticophis lateralis euryxanthus*), California red-legged frog (*Rana draytonii*), Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), special-status migratory birds, special-status bats, San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) and monarch butterfly (*Danaus plexippus*).

Alameda whipsnake

The Alameda whipsnake (AWS) is a federally and state-listed threatened species. Historically, AWS distribution likely included the coastal scrub and oak woodland communities in the East Bay in Contra Costa, Alameda, and parts of San Joaquin and Santa Clara counties (USFWS,

2005). Currently, this species inhabits the inner coast range in Contra Costa and Alameda counties (Stebbins, 2012). The current distribution of the subspecies has been reduced to five separate areas with little or no interchange due to habitat loss, alteration, and fragmentation; one of these areas is Recovery Unit 2 (65 FR 58933 – 58962, 2000), representing the Oakland-Las Trampas population, which occupies the Oakland Hills, Anthony Chabot area to Las Trampas Ridge, in Contra Costa County.

Exact locations of AWS occurrences are considered sensitive by CDFW. The preferred habitat for AWS is open coastal scrub or chaparral plant community, with a possible preference for south-, southeast- and southwest-facing slopes (Stebbins, 2012). However, telemetry data indicate that, while chaparral is central to their home ranges, which average 11.6 acres, AWS move up to 500 feet into adjacent grassland, oak savannah, and occasionally oak-bay woodland (Stebbins, 2012). The closely related California whipsnake (*Masticophis lateralis lateralis*) has been observed in grassland, oak savanna, and along the edge of riparian vegetation at distances greater than 300 meters (1,000 feet) from scrub habitats, usually in areas where rock outcrops are abundant (USFWS, 2003). Rock outcrops and small mammal burrows provide refuge for AWS (Stebbins 2012) and rock piles support the AWS' primary prey item, lizards, especially the western fence lizard (*Sceloporus occidentalis*) (USFWS, 2005). Other prey items include skinks, frogs, snakes and birds. The primary threats to the Oakland-Las Trampas population is the decline in habitat quality as chaparral/scrub stands become decadent, a high potential for catastrophic wildfire, and the effects of habitat loss and fragmentation as a result of urban development (USFWS, 2003). Numerous documented occurrences in the regional Project vicinity (Oakland East USGS quadrangle) as recently as 2008 presumes this species is extant within their understood range where suitable habitat is present (CDFW, 2018a). The Project area lacks rock outcrops, but includes the core scrub habitat required by AWS populations, as well some small mammal burrows. In addition, AWS could be expected to disperse and forage in grassland, oak woodland, mixed woodland, riparian woodland, and a temporary pile of rocks stored near the equipment shed for dispersal to various District work projects, habitats known to be used by AWS, within 500 feet of chaparral (USFWS, 2003). Prey species could be present in each of these habitats, and AWS may occur in these areas on a transient basis. Consistent with the Biological Opinion for the Proposed Federal Emergency Management Agency (FEMA) Hazardous Fire Risk Reduction Project in the East Bay Hills of Alameda and Contra Costa Counties, California (HMGP 1731-16-34, PDM-PJ-09-CA-2005-003, PDM-PJ-CA-2005-011, and PDM-PJ-09-CA-2006-004), eucalyptus woodland is considered unsuitable habitat for Alameda whipsnake (USFWS, 2013).

California red-legged frog

The California red-legged frog (CRLF) is federally listed as a threatened species throughout its range in California and is a CDFW Species of Special Concern (SSC). This frog historically occurred over much of the state from the Sierra Nevada foothills to the coast and from Mendocino County to the Mexican border. CRLF typically breed in ponds, slow-moving creeks, and streams with deep pools that are lined with dense emergent marsh or shrubby riparian vegetation. However, this species is capable of inhabiting a wide variety of perennial aquatic habitats, including coastal lagoons, marshes, springs, stock ponds and siltation ponds (USFWS, 2005). In summer (non-breeding season), CRLF are likely to be observed near a deep pool in a

creek or a pond, where emergent vegetation, semi-submerged root masses and undercut banks provide protection from predators (USFWS, 2005). CRLF use upland habitat such as open grasslands for foraging and dispersal. Prey items include invertebrates and small vertebrates. Suitable upland habitat includes moist seeps or springs, burrows or moist debris piles for dispersal and aestivation (Stebbins, 2012).

Factors that have contributed to the decline of CRLF include destruction of riparian habitat from development, agriculture, flood control practices, or the introduction of exotic predators such as American bullfrog (*Rana catesbeiana*), crayfish, and a variety of non-native fish. The nearest CRLF observation was made in the 1940s at Thornhill Pond near Berkeley, approximately 1.2 miles west of the Project area on the opposite side of the Oakland Hills. Although, the species is presumed extant in this location, this area has since been developed into a residential neighborhood and the pond may no longer exist. Another observation, made in 1997, was made in an unnamed tributary to Brookside Creek, south of the City of Orinda, near, but outside of, the Western Hills sub-area.

A 2007 report on the status of amphibians in the District indicated that CRLF were not present in Sibley Volcanic Regional Preserve or Huckleberry Botanical Regional Preserve between 1990 and 2006 (EBRPD, 2007). Additionally, no California red-legged frogs were detected during the Spring 2013, 2016, or 2017 field surveys of the McCosker sub-area, nor were any incidental observations made during the April 20, 2018 foothill yellow-legged frog survey. Additionally, CNDDB has no existing records for CRLF in this portion of the Project area (CDFW, 2018a). However, shallow pools with undercut banks, and a deep plunge pool, on Alder Creek within the McCosker sub-area provide potential habitat, though emergent and shrubby riparian vegetation is generally sparse, making the habitat more suitable for non-breeding activity than breeding activity in its current condition.

Fish

No special-status fish species are expected to occur within the Project area. Under existing conditions, central California coastal steelhead (*Oncorhynchus mykiss*), a federally-listed threatened species, which hatch and spawn in freshwater creeks, but live as adults in the Pacific Ocean, cannot reach San Leandro Creek because of Chabot Dam. San Leandro Creek is a perennial creek that provides habitat for native resident rainbow trout. Restoration of Alder Creek, including improving the culvert under Pinehurst Road offers the potential to reestablish fish habitat within the Project area (EBRPD, 2015). Other special-status fish that can occur in the region require estuarine habitat, which is absent from the Project area.

Two individual adult rainbow trout (*Oncorhynchus mykiss*) have been observed in the pool within Alder Creek upstream of the Pinehurst Road culvert, one in 2013 and one in 2016. No other suitable rainbow trout habitat is present in the Alder Creek tributary in its current culverted state (2013; J. Sullivan, unpublished data, 2018). Redwood Creek, which is within the San Leandro Creek watershed, provides primary spawning and rearing habitat for a population of rainbow trout. The trout migrate downstream to Upper San Leandro Reservoir and return to the upper sections of Redwood Creek and San Leandro Creek to spawn in late winter and early spring (Alameda County Flood Control and Water Conservation District 2016). The section of San

Leandro Creek within the project area includes suitable habitat for spawning rainbow trout. Although resident rainbow trout are not identified as candidate, sensitive, or special status in local or regional plans or regulations by the CDFW, USFWS, or NMFS, the population in Alder Creek is unique, being genetically identical to the population originally used to describe the species in 1885.

Special-status Birds

Several special-status birds are likely to nest within the riparian woodland forest or along the fringes of the non-native grassland of the Project area. Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) are considered a "watch list" species by CDFW that could nest and forage within the riparian woodland. White-tailed kite (*Elanus leucurus*) is also considered a "watch list" species by CDFW that could nest in shrubs and trees in the grassland east of the metal equipment. Grasshopper sparrow (*Ammodramus savannarum*) is considered a Species of Special Concern (SSC) by CDFW that could nest in annual grasslands bordering Alder Creek, access roads and staging areas. Olive-sided flycatcher (*Contopus cooperii*) is considered a SSC and a "Bird of Conservation Concern" by the USFWS. Oak titmouse (*Baeolophus inornatus*), Nuttall's woodpecker (*Picoides nuttallii*), and Allen's hummingbird (*Selasphorus sasin*) are each considered a Bird of Conservation Concern and a Special Animal by CDFW. Suitable nesting habitat is present within the Project area and surrounding vicinity for each of these species. The breeding season varies by region, but is typically considered as the period between February 1 and August 31 of each year.

Other Breeding and Migratory Birds

The federal Migratory Bird Treaty Act (MBTA) and California Fish and Wildlife Code protect raptors, most native migratory birds, and breeding birds that would occur in the Project area and/or nest in the surrounding vicinity.

Special-status Bats

Pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western mastiff bat (*Eumops perotis californicus*) are SSC and silver-haired bat (*Lasionycteris noctivagans* and hoary bat (*Lasiurus cinereus*) are CDFW Special Animals (CDFW, 2018b). Pallid bat occurs in most of California in open, dry habitats with cliff fissures, abandoned buildings and bridges for roosting. Townsend's big-eared bat inhabits caves and buildings, but is also found in open, dry areas near coniferous forests throughout most of California. Western mastiff bat occurs mostly in southern California but ranges as far north as Butte County. It roosts in rugged, rocky canyons. These three species of bats have a low potential for roosting in the Project area but may enter the site to forage. Silver-haired bat distribution is primarily coastal and montane in California, roosting commonly in dense foliage of trees, tree hollows, and under loose bark. Hoary bat is generally distributed in wooded areas of California and typically roosts in the shade of foliage near open habitats for foraging. The medium to large trees in the creek corridors and within the Project area provide suitable roost habitat for this species that may forage over the low-flowing water or areas of annual grassland within the Project area. Silver-haired bat and hoary bat could use these trees, and potentially the tiles on the roof of the residence, for roosting, and forage over the stream or open areas within the Project area. Bats and other non-game mammals are protected under the California Fish and Game Code.

San Francisco dusky-footed woodrat

The San Francisco dusky-footed woodrat is a CDFW Special Species of Concern (SSC). Woodrats often occupy habitats with both woodland and scrub components that provide cover and food sources, such as coast live oak (*Quercus agrifolia*), coffeeberry (*Frangula* (=*Rhamnus) californica*), blackberry (*Rubus* spp.), gooseberry (*Ribes* spp.), poison oak (*Toxicodendron diversilobum*), and honeysuckle (*Lonicera spp*.) (Linsdale, 1951). Nests are typically over three feet in diameter and are constructed out of piled sticks, leaves and grasses. These are typically on the ground, but may be built high in trees. Dusky-footed woodrat (*Neotoma fuscipes*) nests were observed, on the ground or approximately 10 to 20 feet high in coast live oaks along the access road, along the access road and the trails through the project area; one nest was located in the crotch of a coast live oak a few feet off the ground. It is not known which, if any, nests are in use by woodrats, or the San Francisco subspecies in particular.

Monarch Butterfly

The monarch butterfly is listed on the CDFW Special Animals list (CDFW, 2018b) and has a conservation status of "vulnerable to imperiled" from the Xerces Society for Invertebrate Conservation (Xerces, 2016a). Over the last several decades, researchers have estimated that the monarch population has declined by 50 percent in coastal California (Xerces, 2016b). Monarch butterflies engage in a fall migration that takes approximately 85 days to complete and requires multiple generations of butterflies to complete the trip. Starting around October, this species flies from central and northern U.S states and parts of Canada to Mexico and the coast of California where the final generation of migrating monarchs aggregate in clusters high in trees. Overwintering sites in coastal California commonly include Eucalyptus, Monterey pine and Monterey cypress (*Hesperocyparis macrocarpa*) (Xerces, 2016b). In February and March, the surviving monarchs breed at the overwintering sites before dispersing.

Sensitive Natural Communities

A sensitive natural community is a natural community that receives regulatory recognition from municipal, county, state, and/or federal entities, such as the CDFW in its California Natural Diversity Database (CNDDB), because the community is unique in its constituents, restricted in distribution, supported by distinctive soil conditions, and/or considered locally rare.

Four sensitive natural communities were identified in the vicinity of the Project area (CDFW, 2018a) - Valley Needlegrass Grassland, Serpentine Bunchgrass, Northern Coastal Salt Marsh, and Northern Maritime Chaparral; however, none of these natural communities records are present in the Project area.

Critical Habitat Designations

The USFWS can designate critical habitat for species that have been listed as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the federal Endangered Species Act as those lands (or waters) within a listed species' current range that contain the physical or biological features that are considered essential to its conservation. The designated habitat should contain elements necessary for the primary biological needs of the species, including breeding, foraging, dispersal, migration, shelter, and growth of juveniles. Critical habitat serves to identify specific areas that are considered essential to the conservation of a listed species through special

management or protection under Section 7 of the ESA, which requires that federal agencies must not fund, carry out, or authorize projects that would destroy or adversely affect critical habitat.

3.4.3 Project Elements

The Project elements contained in this section of the Project description address the recommendations and actions contained in the LUPA that would result in physical changes to the baseline environmental conditions at this regional preserve.

Project-wide Land Management Actions

Land management actions throughout the Project area have been designed to benefit covered species, natural communities, biological diversity, and ecosystem function. Ecosystem functions include: preserving and expanding major habitat linking protected public lands; enhancing grassland to promote native biological diversity and habitat through continuation of ongoing grazing and integrated pest management programs, enhancing habitat for pallid manzanita (*Arctostaphylos pallida*) by adhering to best management practices identified in the pallid manzanita management plan; and restoring creeks and riparian woodlands to enhance instream aquatic habitat for covered species and native fish.

Expansion of the Existing Trail System

New, narrow natural surface trails in the Natural Units (upland areas[4]) would consist of approximately 18,313 linear feet (3.7 miles), and closure and restoration of 2,366 linear feet (0.45 miles) of former trail to provide a more sustainable trail alignment away from known locations of sensitive pallid manzanita. These trails would traverse a mix of California annual grassland, coyote brush scrub, coast live oak/bay laurel woodland, willow/alder riparian woodland, tree plantations, and developed/ruderal habitat, and would include a section adjacent to seasonal wetlands. The new trails have been sited to minimize impacts on sensitive species.

In general, trail construction work would consist of a four-foot wide trail footprint (permanent impact area) plus two feet on each side of the trail for a temporary work area. Low water crossings would be installed to provide stability and minimize channel bed erosion of 11 drainage crossings. Trail-related project components would require ground disturbance to no deeper than four feet (refer to *Figure 2-13, Typical Trail Cross Section* in Chapter 2, *Project Description*). The trails would be constructed using a combination of small, mechanized equipment and hand tools. Some brushing of shrubland habitat and disruption of grassland habitat would be involved in the trail construction work, but no trees would be removed along trail routes in woodland or riparian habitat and disturbance to understory vegetation along the proposed, new, narrow trail alignments would be limited to an approximately eight-foot wide area covering approximately 18,313 linear feet (3.4 acres). Within the area of large groupings of eucalyptus, there are a significant number of downed trees that would be affected. In this location, downed or smaller diameter standing trees in the trail alignment would be cut to accommodate a six-foot wide by ten-foot tall trail corridor.

4 Trails within the McCosker Recreation/Staging Unit are calculated as part of those improvements.

For the purposes of this assessment, a four-foot width has been set as the area of permanent impacts for the approximately 3.7 miles (18,313 linear feet) of new narrow trail construction in the Natural Units or a total of approximately 73,252 square feet (1.7 acres). Additionally, side slopes estimates are based on 1:1 cross slopes throughout the 18,313 linear feet or 3.7 miles (3.4 acres) of new, narrow trail construction. This assumption allows for an average of four feet of temporary disturbance beyond the area of the trail bed during construction resulting in approximately 1.7 acres (73,252 square feet) of temporary impacts. The area of temporary impacts associated with new trail construction would vary according to the adjacent side slope. Revegetation of these disturbed areas would stabilize these sites and mitigate the disturbance from construction.

Vegetation in disturbed areas resulting from the development of the trail system would be reestablished, as appropriate, by either: 1) scarifying, seeding, and mulching using certified weed-free products; 2) planting native vegetation, transplanted from the vicinity, or seeded with native species found in the area; or 3) applying strippings accumulated from grading activities over areas temporarily disturbed by construction activities to encourage recovery of the natural habitat. Where the use of strippings is applicable, the strippings resulting from clearing and grubbing the construction site would be stockpiled at the start of construction and covered or controlled using best management practices (e.g., silt fence, wattles, fiber rolls – absent of plastic netting and certified as free of noxious weeds) for replacement at the end of construction, thereby minimizing the imprint on adjacent areas.

Western Hills Sub-area Property Conveyance

In accordance with District Resolution No: 2006-1-14, District and OG Property Owner LLC 2008 First Amendment to Donation Agreement by and between the District and Property Owner, OG LLC, the 2004 Second Supplemental EIR for the Montanera Project, and City of Orinda Resolution 13-05, the following actions are anticipated for the Western Hills sub-area: 1) conveyance in fee of a 389-acre conservation easement with multi-use trails; and 2) management of an approximately one-half acre easement containing the Red-tailed Hawk Staging Area. In addition, park visitors will have access to ten parking spaces within Wilder City Park to access the Western Hills sub-area trails. Habitat benefits resulting from the addition of the Western Hills sub-area to Robert Sibley Volcanic Regional Preserve would include: seep wetlands, perennial, intermittent and ephemeral tributaries to Brookside Creek, including adjacent riparian habitat, and a mix of coyote scrub, oak and bay forest and non-native grassland habitat. The conservation easement also retains suitable Alameda whipsnake habitat in Recovery Unit 2, representing the Oakland-Las Trampas population. This protected open space retains the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands and retains the integrity of the network of protected lands in the East Bay Hills.

Preserve and McCosker Sub-areas Improvements to Existing Staging Areas and Development of New Parking Areas

Parking area improvements occurring in the Preserve and McCosker sub-areas would be located within previously disturbed areas that have been graded and compacted. In areas where there is vegetation, the vegetation generally comprises a mix of shrubs, primarily coyote brush, poison oak and non-native species and bay and eucalyptus trees (Preserve sub-area) and non-native

grasses and ruderal species (McCosker sub-area). Modifications to the existing Sibley Main Staging Area would expand the existing parking capacity from 38 spaces to approximately 73 spaces in accordance with the recommendations in the 1985 LUDP. The expanded area would result in the addition of approximately 2,946 square feet of compacted gravel surface in an area that is currently vegetated, requiring development of a stormwater treatment feature. Project activities in the Preserve sub-area would include installation of a 1,000-gallon water tank at the existing backpack camp placed on 100 square feet of impervious material to meet the periodic and limited water usage needs for drinking, cooking, dishwashing, and personal grooming activities with the intent of improving the recreation camping experience.

Improvements in the Preserve sub-area would also involve repairing and repaving 1,100 feet linear feet of an existing 20-30-foot service road access off Old Tunnel Road. The paving work would involve grinding up the existing pavement in place, and paving over the top of it. This work would not alter the amount of impervious area at the site. The 272-foot restroom and access pad surrounding the restroom facility would add approximately 675 square feet of impervious areas to the Old Tunnel Road site.

In the Eastport Staging Area (formerly Wilcox Staging Area), minimal grading in a previously disturbed area would add up to five parking spaces and direct drainage to a storm water treatment feature.

Preserve and McCosker Sub-areas Improvements to Existing Roadways and Infrastructure

Roadway and utility infrastructure improvement activities would involve improvements to existing roadways, both paved and natural surface ranch roads, and installation of underground utilities to service a combined future group campsite and interpretive programs area in the McCosker sub-area.

McCosker Sub-area Recreation Facility Development

Recreation facility development activities in the McCosker sub-area would involve placing fill material from the creek excavation work to create a graded pad for future implementation of camping and day-use facilities in areas where the vegetation generally consists of remnant, declining ornamental trees from a former nursery operation, non-native grasses and ruderal species, and two small (total of approximately 0.1 acre) wetlands created from prior construction activities that occurred prior to District ownership of the land.

McCosker Sub-area Creek Restoration and Enhancement

The Project includes restoration and enhancement of approximately 2,291 linear feet of Alder Creek (including the main stem and east and west branches) and 770 linear feet of Leatherwood Creek. Creek restoration activities would involve excavating fill material, daylighting the creek channel, removing the existing culverts and drainage structures, constructing in-stream and near-stream enhancements, removing approximately 34 trees and planting wetland and riparian vegetation along the daylighted creek channel. The Alder Creek restoration work would involve daylighting approximately 1,387 linear feet of the main stem, 227 linear feet of the west branch, and 528 linear feet of the east branch as part of this Project, and revegetating 149 linear feet of existing

daylighted riparian area. Approximately 770 linear feet of the culverted portion of a south branch tributary to Alder Creek, known as Leatherwood Creek, would also be daylighted and restored. Once daylighted, Alder Creek has the potential to provide indigenous fish species with upstream access to constant water flows emanating from springs (EBRPD, 2015). Deep pools like those found on either end of the Pinehurst Road culvert could serve as refugia to rainbow trout, with Alder Creek providing suitable passage and/or spawning habitat for indigenous fish species in average to above-average rain years. Alder Creek, once restored, could also provide excellent habitat for California red-legged frog. The Leatherwood Creek restoration site would provide habitat for a variety of aquatic species, excluding indigenous fish species.

The creek restoration area comprises approximately 4.0 acres, and extends vertically to the maximum depth of Project ground-disturbing activities. For Project creek restoration components ("daylighting" and revegetation), average cut depth is anticipated to be 11 feet below ground surface, but will extend to up to 15 feet below ground surface in places. Project ground-disturbing activities for bridge construction would extend up to 20 feet below ground surface for the deepest component, the pier supports. Utility-related Project components would require ground disturbance of approximately one to four feet. The vertical extent of the Project area has been established as 15 feet below ground surface for stream restoration components, 20 feet below ground surface for bridge/stream crossing components, and 10 feet below ground surface for utility components.

The degraded streams and riparian woodlands within the Alder Creek corridor would be improved to increase overall ecological functions and values (i.e., species richness and diversity, vegetative cover, wildlife habitat function) and to enhance the ability of this habitat to support existing and new populations of native species. These enhancements would include removing invasive nonnative plant species mechanically, by hand, or through application of herbicides; planting appropriate native riparian woodland/scrub vegetation within the restored channel corridor; removing non-vegetative debris such as trash, garbage, or dumped fill material (e.g., concrete, asphalt) from the channel; removing and/or modifying barriers (e.g., culverts, low-flow crossings, diversion structures) to encourage up- and down- steam fish migration; installing instream woody material, boulders, or rock structures to create pools and/or narrow the low-flow channel; and reestablishing the natural disturbance regime (e.g., flooding, sediment deposition and scour) to facilitate natural regeneration of riparian woodland/scrub and promote habitat diversity.

Construction of these Project elements is anticipated to occur over a two-year period with construction activities occurring over a three-month period commencing in the summer with completion by October 31st. Hours of work would generally be between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. Heavy equipment needed to complete the work would likely include: graders, excavators, bull dozers, a cement pumper, and a crane to deliver the concrete mix, and haul trucks.

Access to the construction site would be from Pinehurst Road depending on the location of the site improvements.

A construction staging area would be designated for storing construction equipment and tools a minimum distance of 200 feet from the creek restoration site in an open area approved by the District. This construction staging area will be used to store equipment, supplies and stockpiled materials. Fueling of equipment and vehicles would be required to be completed a minimum of 200 feet from the top of creek bank. Best management practices (BMPs) would be required for the contractor to prevent unwanted pathogen, plant and wildlife contamination, run-off and dust-related problems.

3.4.4 Research Methodologies

Information about Project area biological resources was obtained through field surveys, a review of published and unpublished literature, and consultation with persons knowledgeable about the biology of the area. The California Natural Diversity Data Base (CNDDB) was consulted for information related to federally- and state-listed endangered, threatened, proposed, candidate, and sensitive wildlife, plants, and habitat resources that potentially occur within the Project vicinity. Consultation with environmental regulatory agencies occurred on June 8, 2017 and during a site visit August 3, 2017.

Systematic surveys of biological resources for wildlife were conducted by District biologists from the Spring of 2013 through 2015 with more intermittent field studies conducted between 2015 and 2017. Field surveys methods used by District biologists at the site included visual encounter and dip-net surveys of all waterbodies including spring boxes, limited cover boards and track plates, spot mapping method, point counts, predawn and post-sunset call counts, and bat exit surveys, area searches and some small live mammal trapping.

District botanists conducted field surveys March 9, 2017 of McCosker campground and creek restoration areas for *Dirca occidentalis* and *Fritillaria* spp. On April 20, 2018, District biologists conducted a survey of Alder Creek and Leatherwood Creek for foothill yellow-legged frog.

Erika Walther, Wildlife Biologist with ESA, conducted field reconnaissance surveys on May 19, 2016 and on July 5, 6, and 11, 2017, September 25, 2017 and October 15, 2017. She was accompanied by Chris Rogers, Botanist and Wetland Ecologist, on May 19, 2016.

Prior to the reconnaissance surveys, databases were reviewed for the Project sites and regional vicinity (CDFW, 2018a; CNPS, 2018; USFWS, 2018; i.e., the Oakland East, Briones Valley, Walnut Creek, Las Trampas Ridge, Hayward, San Leandro, Hunters Point, Oakland West, and Richmond U.S. Geographical Survey (USGS) 7.5-minute topographic quadrangles).

The field reconnaissance consisted of pedestrian surveys within the Project area boundary, including: staging areas, and access roads; proposed recreation development areas within the McCosker sub-area, as well as 100 feet upstream and downstream of the Project area; on proposed and existing trails extending through the three sub-areas and into Huckleberry Regional Preserve; and observations of the adjacent environments. The field surveys were focused on identifying habitat for special-status plant and animal species. General habitat conditions were noted and incidental species observations were recorded. The findings of the reconnaissance survey, the literature review, and the database queries were used to compile the list of special-

status species that may occur at the Project area, to define areas of vegetative communities and habitat types present, and to characterize the Project setting, described above. The list of special-status plant and animal species that may occur in the Project area is included in *Table 3.4-5* and *Appendix C, Plant and Wildlife Species Lists for the Project Area.*

3.4.5 Significance Criteria

Based on CEQA Guidelines Appendix G, Section IV, a project would have a significant impact on biological resources if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

3.4.6 Criteria with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below.

e) Any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. As the District is a Special District with the authority to ... *"acquire land...to plan...develop...and operate a system of public parks and to do all other things necessary or convenient to carry out the purposes of the District"* it adheres to its own policies and ordinances pertaining to tree removal. Additionally, the Long Term Management Plan for the Western Hills Open Space serves as the management plan for the Western Hills Open Space Conservation Easement, established as mitigation for the Wilder (Montanera) residential development project in City of Orinda. Moreover, Contra Costa County, City of Oakland, and the City of Orinda each have General Plan Conservation Elements that aim to protect wildlife, habitats and natural resources. The Project is consistent with each of these policies and plans, as shown in Table 3.4-1; thus, the Project would have no impact on local policies or ordinances, and this criterion is not discussed further in this EIR.

f) Provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. The improvements within the Project area would

not conflict with any habitat conservation plan, natural community conservation plan, or other local or regional habitat conservation plans, as the Project area is not included in any current habitat conservation plan or NCCP program in this region. The Western Hills sub-area is designated as a conservation easement, which will serve to expand the overall natural community acreage and protect this area from future development in perpetuity. Thus, the Project would have no impact to habitat conservation plans or natural community conservation plans, and this criterion is not discussed further in this EIR.

3.4.7 Impact Analysis

The following section describes potentially significant impacts to biological resources that could result from implementation of the Project, including several special-status species that were identified to have the potential to occur in the Project area and vicinity, as described above. The analysis is based on the Project actions contained in the LUPA that would result in physical changes to the baseline environmental conditions at this regional preserve. These elements are described below.

Implementation of the Project has the potential to adversely impact biological resources primarily within the McCosker sub-area, including impacts to: natural communities, including wetland and riparian habitat; and listed plant and wildlife species. These impacts are described below. If an impact is significant, CEQA requires feasible measures to minimize the impact. Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the resource. CEQA requires that all feasible mitigation be undertaken, even if it does not reduce impacts to a less than significant level of impact CCR Title 14(3) §15126.4 (a)(1).

Impact BIO-1: The Project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Less than Significant with Mitigation)

Implementation of recreation facility development and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the trail system throughout the Project area would involve grading activities and vegetation disturbance within habitat for several listed and special status wildlife species (see *Figure 3.4-3, Wildlife CNDDB Occurrences*), which would result in temporary and permanent impacts to habitat for these species.

Temporary construction impacts would be minimized through implementation of the District's Best Management Practices (BMPs) as set forth in the District's Standard Technical Specifications as identified in *Table 3.4-5, Relevant Technical Specifications*. These BMPs include: 1) mandatory biological resources awareness training for all construction personnel about special-status species that could occur on site; 2) protection of all trees in work areas, staging areas and along construction access including no driving or parking within the drip line of a tree unless approved by the District Inspector and installation of fencing or equal barriers around drip line of trees; 3) requiring equipment and vehicles to be stored a minimum of 100 feet from the top of the creek bank and requiring fueling of equipment and vehicles a minimum of 200 feet from the top of the creek bank 4) use of silt fences and fiber rolls to prevent loss of habitat

due to erosion; ~~5) prohibition of night work; 6)~~5) covering trenches with plywood or similar materials or providing a ramp to allow animals to escape the excavation when not covered; and ~~7)~~6) erosion control measures that include installation of fiber rolls and erosion control blankets that do not contain netting that could trap small animals and that are weed and seed free. In addition to these District standard BMPs, implementing Mitigation Measures **BIO-1a: General Conservation Measures** and **BIO-1b: Avoidance, Minimization and Compensation for Impacts to Special-status Plants**, would reduce potential impacts on special-status species to a less-than-significant level by delineating the construction area, protecting habitat, avoiding monofilament plastic, implementing preconstruction protocol-level surveys and avoidance measures, relocating extant special-status species plant populations, and compensating for impacts to special-status plants that could not be avoided, if present.

Mitigation Measure BIO-1a - Project-wide: General Conservation Measures to Protect Habitat Quality for All Special-status Species. The District's construction contractor(s) shall implement the following general avoidance and minimization measures to protect federally listed species and their habitats during construction:

- Before starting ground disturbing activities within construction sites and along each part of the proposed trail routes, the District shall clearly delineate the boundaries of the construction area with fencing, stakes, or flags. Contractors shall be required to restrict all construction-related activities to within the fenced, staked, or flagged areas. Contractors shall maintain all fencing, stakes, and flags until the completion of construction-related activities in that area.

- Prior to construction, Lead Biologist shall oversee the delineation of the habitat of the CRLF and AWS within the construction sites with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of CRLF and AWS and pallid manzanita habitat. Sensitive habitat areas, including CRLF and AWS habitat and known populations, and jurisdictional waters, shall be clearly indicated on the Project plans.

- To prevent CRLF and AWS from moving through the construction area, the District or its contractors would install temporary wildlife exclusion fencing in the McCosker sub-area and the Preserve Sub-area (i.e., Sibley parking expansion). Final fence design and location shall be determined in consultation with USFWS and CDFW.

- Where wildlife exclusion fencing is not installed and ground disturbing activity is occurring (e.g., trail construction), the Lead Biologist will clear the area prior to the start of ground disturbing activity.

- A USFWS-approved biological monitor would be on-site during installation of the fencing to relocate (as authorized in the Biological Opinion) any CRLF or AWS outside the construction area. The fencing shall be inspected by the qualified biological monitor on a daily basis during construction activities to ensure fence integrity. Any needed repairs to the fence shall be performed on the day of their discovery. After construction has been completed, the exclusion fencing would be removed within 72 hours.

- Any construction-related disturbance outside of these boundaries, including driving, parking, temporary access, sampling or testing, or storage of materials, shall be prohibited without explicit approval of the Lead Biologist. New access driveways shall not extend beyond the delineated construction work area boundary. Construction vehicles shall pass and turn around only within the delineated construction work area boundary or local road network. Where new access is required outside of existing roads or the construction work area, the route shall be clearly marked (i.e., flagged and/or staked) prior to being used, subject to review and approval of the Lead Biologist.

- Excavated soils shall be stockpiled in disturbed areas lacking native vegetation.

- All detected erosion caused by Project-related impacts (i.e., grading or clearing for new roads) shall be remedied immediately upon discovery.

- The introduction of exotic plant species shall be avoided first through prevention, followed by physical or chemical methods. Construction equipment shall arrive at the Project area free of soil, seed, and vegetative debris to reduce the likelihood of introducing new weed species. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. All earth-moving equipment, gravel, fill, or other materials will be weed-free. Construction operators will ensure that clothing, footwear, and equipment used during construction is free of soil, seeds, vegetative matter or other debris or seed-bearing material before entering the park or from an area with known infestations of invasive plants and noxious weeds. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means approved by California Department of Fish and Wildlife (CDFW) and the United States Fish and Wildlife Service (USFWS).

- Use of herbicides as vegetation control measures shall be used only when mechanical means have been deemed ineffective. All uses of such herbicidal compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and state and federal legislation as well as additional Project-related restrictions deemed necessary by the CDFW and/or USFWS. No rodenticides shall be used.

- The introduction of soil-borne pathogens shall be avoided by following the District's Pathogen Controls Best Management Practices, described in Section 3.4.1 Regulatory Framework.

- If federal listed wildlife species are found on the site during Project construction, construction activities shall cease in the vicinity of the animal until the animal moves on its own outside of the Project area (if possible). The wildlife resource agency(ies) with jurisdiction over the species shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary if the animal does not move on its own. A report shall be prepared by the Lead Biologist to document the activities of the animal within the site; all fence construction, modification, and repair efforts; and movements of the animal once again outside the exclusion fence. This report shall be submitted to the District and pertinent wildlife agencies with jurisdiction over the wildlife species.

- Immediately prior to conducting vegetation removal or grading activities inside fenced exclusion areas, the Lead Biologist or a qualified biologist shall survey within the exclusion area to ensure that no federal or state listed species are present. The Lead Biologist or a qualified biologist shall also monitor vegetation removal or grading activities inside fenced exclusion areas for the presence of federal listed species.

- Before steep-walled holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If listed species are trapped, the USFWS and/or CDFW, as appropriate, shall be contacted to determine the appropriate method for relocation.

- All construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods and with a diameter of 4 inches or more shall be inspected for federal listed species before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a listed species is discovered inside a pipe, that section of pipe shall not be moved until the appropriate resource agency, with jurisdiction over that species, has been consulted to determine the appropriate method for relocation. If necessary, under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity until the animal has escaped.

- All vehicles and equipment shall be in proper working condition to ensure that there is no potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. Contractor equipment shall be checked for leaks prior to operation and repaired when leaks are detected. Fuel containers shall be stored within appropriately-sized secondary containment barriers. The Lead Biologist shall be informed of any hazardous spills within 24 hours of the incident. Hazardous spills shall be immediately cleaned up and the contaminated soil shall be properly disposed of at a licensed facility. If vehicle or equipment maintenance is necessary, it would be performed in the designated staging areas.

- All temporarily disturbed areas shall be returned to pre-project conditions or better.

- Project-related vehicles would observe a 15-mile-per-hour speed limit on unpaved roads within the limits of construction.

Special-Status Plants

Federally and state-listed endangered and special status plants have been recorded in the vicinity of the Project area (see *Figure 3.4-2 Plants CNDDB Occurrences*). These species include the pallid manzanita, bent-flowered fiddleneck, western leatherwood, and Oregon meconella. Pallid manzanita occurs at Sibley Preserve less than a mile from the action area, and CNDDB records indicate its presence near the study area in Huckleberry Botanic Regional Preserve. Bent-flowered fiddleneck, western leatherwood and Oregon meconella also have high potential to occur.

Implementation of recreation facility development, bridge construction, and creek restoration and enhancement activities in the McCosker sub-area and expansion of the existing trail system

throughout the Project area would involve grading activities and vegetation disturbance within habitat for several listed and special status species would result in temporary and permanent modifications to habitat that could have a substantial adverse effect to these special status plant species. If present in the Project area, individual plants could be damaged or killed by construction activities including excavation and grading, requiring mitigation.

Mitigation Measure BIO-1b - Project-wide: Avoidance, Minimization, and Compensation for Impacts to Special-Status Plants. The District will implement measures to avoid and minimize potential adverse effects on special status plants. Prior to conducting work and during work, the following measures will be implemented.

- A complete botanical survey of the action area will be completed using the Service's Guidelines for *Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants* (USFWS, 2000) and CDFW *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG, 2000). Surveys shall maximize the likelihood of locating special-status species, be floristic in nature, include areas of potential indirect impacts, be conducted in the field at the time of year when species are both evident and identifiable, and be replicated and spaced throughout the growing season to accurately determine what plants exist on the site. The purpose of these surveys will be to identify the locations of special-status plants. The extent of mitigation of direct loss of or indirect impacts on special-status plants will be based on these survey results.

- Locations of special-status plants in proposed construction areas will be recorded using a global positioning system (GPS) unit, and flagged in the field. The GPS data will be used to create digital and hardcopy maps for distribution to construction inspectors and contractors to inform them of areas where disturbance is prohibited.

- If initial screening by a Service-approved biologist identifies the potential for special-status plant species to be directly or indirectly affected by a specific project, the biologist will establish an adequate buffer area to exclude activities that would directly remove or alter the habitat of an identified special-status plant population or result in indirect adverse effects on the species.

- Access may be restricted around special-status plant populations through appropriate management plans. This may include signage, buffers, seasonal restrictions, and design or no access, depending on the sensitive species in question.

- The Project proponents will oversee installation of a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4 feet (1.2 meters) tall around any established buffer areas to prevent encroachment by construction vehicles and personnel. A Service-approved biologist will determine the exact location of the fencing. The fencing will be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and will be checked and maintained weekly until all construction is complete. The buffer zone established by the fencing will be marked by signs prohibiting disturbance of special status plants.

- No grading, clearing, storage of equipment or machinery, or other disturbance or construction activity will occur until all temporary construction fencing has been installed by the District, and inspected and approved by the qualified biologist.

- Any special-status species observed during surveys will be reported to the Service and CDFW so observations can be added to the California Natural Diversity Database (CNDDB).

- If avoidance is not feasible, rare plants and their seeds shall be salvaged and relocated, and habitat restoration shall be provided to replace any destroyed special-status plant occurrences at a minimum 1:1 ratio based on area of lost habitat. Compensation for loss of special-status plant populations may include the restoration or enhancement of temporarily impacted areas, and management of restored areas. Restoration or reintroduction may be located on-site (i.e., within the project footprint) or at a nearby suitable off-site area. At a minimum, the restoration areas shall meet the following performance standards by the fifth year:

  - The compensation area shall be at least the same size as the impact area.
  - Native vegetation cover shall comprise at least 70 percent of the vegetation cover in the impact area.
  - Monitoring shall demonstrate the continued presence of rare plants in the restoration area.
  - Invasive species cover shall be less than or equal to the invasive species cover in the impact area.

  Additionally, restored populations shall have greater than the number of individuals of the impacted population, in an area greater than or equal to the size of the impacted population, for at least three (3) consecutive years.

Significance after Mitigation: *Less than Significant*

Special-Status Reptiles and Amphibians

Presence and/or potential habitat of federal and state-listed endangered and special status reptiles and amphibians have been recorded in the vicinity of the Project area, including Alameda whipsnake and California red-legged frog. Implementation of recreation facility development, bridge construction, and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the existing trail system throughout the Project area would result in modifications to habitat that could have a substantial adverse effect to special status plant reptile and amphibian species.

The Project area provides limited California red-legged frog breeding habitat in two deep pools near the confluence of Alder Creek and San Leandro Creek. One pool is in Alder Creek adjacent to Pinehurst Road and the other is in San Leandro Creek adjacent to Pinehurst Road. The Project area provides nonbreeding aquatic and upland dispersal habitat for frogs moving within the channel and wetlands, and upland/dispersal habitat, including in scrub, grassland, oak woodland, mixed woodland, riparian woodland, eucalyptus woodland and ruderal and agricultural/ornamental habitat. Both breeding and dispersal habitat may be affected by Project

construction activities such as removal of instream structures or excavation and restoration of the streambed or banks, or from vehicular use throughout the action area. Direct effects may include permanent loss of aestivation, migration, and dispersal habitat, mortality to frogs dispersing or aestivating in the Project area; and disruption or loss of reproductive processes. Frogs moving away from construction disturbance may be driven into the open where they are more susceptible to predation, or vehicular or foot traffic. Because the site lacks high quality breeding habitat on-site, and upland aestivation habitat is limited in the action area, the noise and ground vibrations expected from the use of heavy equipment during construction are unlikely to harass California red-legged frogs or affect reproductive activity or viability by disrupting breeding behavior.

Alameda whipsnake was not observed during the 2013 or 2017 surveys, but suitable core and foraging/dispersal habitat is present throughout the study area, including in scrub, grassland, oak woodland, mixed woodland, riparian woodland, and ruderal and agricultural/ornamental habitat. The entire Project area is located within Alameda whipsnake critical habitat, Unit 2: Oakland-Las Trampas Unit (65 FR 58933 – 58962, 2000; shown on *Figure 3.4-3, Wildlife CNDDB Occurrences*). If present, Alameda whipsnake could suffer temporary or permanent loss of habitat, mortality to snakes dispersing or foraging in the Project area; and disruption or loss of reproductive processes. Implementation of recreation facility development and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the trail system throughout the Project area, would involve grading activities and vegetation disturbance within whipsnake critical habitat; these impacts are potentially significant.

The Project would also permanently create upland habitat for CRLF and AWS, as well as aquatic non-breeding habitat for CRLF through restoration and enhancement of riparian corridors in the McCosker sub-area. Temporary and permanent impacts, restoration, and net habitat creation for CRLF and AWS are summarized in *Table 3.4-7, California Red-legged Frog and Alameda Whipsnake Habitat Impacts and Creation*, below.

TABLE 3.4-7
CALIFORNIA RED-LEGGED FROG AND ALAMEDA WHIPSNAKE HABITAT IMPACTS AND CREATION

Wildlife Habitat	A Temporary Impact (acres)	B Permanent Impact (acres)	C Habitat Creation through Restoration (acres)	(B – C) Net Creation of Habitat (acres)
AWS Upland Habitat	4.18	2.63	3.59	0.96
CRLF Upland Habitat	4.32	2.78	3.59	0.81
CRLF Aquatic Non-breeding Habitat	0.13	0.03	0.58	0.55
CRLF Aquatic Breeding Habitat	0.03	0.00	0.00	0.00

Note: AWS upland habitat is completely overlapped by CRLF upland habitat. These habitats are exactly the same with the exception that eucalyptus woodland is considered upland habitat for CRLF, but not AWS.

Implementation of **Mitigation Measures BIO-1a: General Conservation Measures to Protect Habitat Quality, BIO-1c: California Red-legged Frog Avoidance and Minimization**

Measures, BIO-1d: Alameda Whipsnake Avoidance and Minimization Measures, and **BIO-1e: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged Frog and Alameda Whipsnake Habitat** to minimize impacts on CRLF and AWS during construction would reduce potential impacts on special status reptiles and amphibians to a less-than-significant level through seasonal avoidance, conducting pre-construction surveys, biological monitoring, preventing entrapment, use of exclusion fencing, avoiding use of monofilament plastic, and restoring temporarily impacted CRLF and AWS habitat. Creation of CRLF and AWS habitat exceeds permanent impacts, and therefore no compensatory mitigation is required for loss of CRLF or AWS habitat.

Mitigation Measure BIO-1c - Project-wide: California Red-legged Frog Avoidance and Minimization Measures. The District will implement measures to avoid and minimize potential adverse effects to California red-legged frog (CRLF) within suitable habitat for this species (scrub, grassland, oak woodland, mixed woodland, riparian woodland, eucalyptus woodland and ruderal and agricultural/ornamental habitat). Prior to conducting work and during work, the following measures will be implemented.

- Instream disturbances shall be performed during the dry season when ~~McCosker Stream~~Alder Creek flows are minimal (e.g., May 15 to October ~~15~~31).

- A qualified biologist shall perform a preconstruction survey of the Project area no more than 2 weeks prior to construction to determine whether CRLF or other special status species are present in work areas. General minimum qualifications for the qualified biologist are a 4-year degree in biological sciences or other appropriate training and/or experience in surveying, identifying, and handling CRLF.

- If special-status wildlife species are known to occur in the Project area, immediately prior to the start of work each day, a qualified biologist will conduct a visual inspection of the construction zone and adjacent areas, as appropriate. If a special-status wildlife species is found on the Project site, work in the vicinity will be delayed until the species moves out of the site on its own, or is relocated by a qualified biologist with permission from the wildlife agencies.

- In construction areas containing CRLF or other special status species habitat, a qualified biological monitor shall perform periodic inspections of the Project site to verify the absence of CRLF and other special status species.

- If a CRLF is located, work shall cease in the immediate area and the U.S. Fish and Wildlife Service shall be notified before work is reinitiated. Additional measures including fulltime or spot check biological monitoring and/or exclusion measures for CRLF may be implemented during the remainder of construction following consultation with the Service.

- The USFWS-approved biologist will remove and destroy from within the Project area any individuals of non-native species, such as bullfrog, crawfish, and cetrarchid fishes, to the maximum extent possible.

Mitigation Measure BIO-1d - Project-Wide: Alameda Whipsnake Avoidance and Minimization Measures. The District will implement measures to avoid and minimize potential adverse effects to Alameda whipsnake (AWS) within suitable habitat for this

species (scrub, grassland, oak woodland, mixed woodland, riparian woodland, and ruderal and agricultural/ornamental habitat). The District will develop and implement an AWS protection and monitoring plan, to be approved by the USFWS during informal consultation under FESA. The following protective measures will be included:

- The District shall provide the names and credentials of a biologist qualified to act as a construction monitor to USFWS for approval at least 15 days prior to commencement of work.

- The USFWS-approved biologist will survey the site two weeks prior to the onset of work activities and immediately prior to commencing work. If AWS is found, work in the vicinity will be delayed until the species moves out of the site on its own, or the approved biologist will contact the USFWS to determine whether relocating the species is appropriate.

- Ground disturbing work shall be performed during the period when AWS are active, April 1 to October 31, to minimize potential impacts to hibernating snakes.

- Exclusion fencing will be placed near the grading limit for the duration of the grading and construction, and removed within 72 hours of completion of work, to prevent AWS from entering the Project site.

- No monofilament plastic will be used for erosion control.

- Sites within AWS habitat will be hand-cleared of vegetation, or a qualified biologist will survey the area immediately prior to equipment clearing

- Upland habitats used by AWS will be restored as feasible, and the lost habitat will be compensated according to a ratio agreed upon with wildlife agencies.

Significance after Mitigation: *Less than Significant*.

Mitigation Measure BIO-1e - Project-Wide: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged Frog and Alameda Whipsnake Habitat.

To restore temporarily impacted habitat for California Red-legged Frog (CRLF) and Alameda Whipsnake (AWS), the District shall prepare and implement a Revegetation Plan (Plan) with detailed specifications for minimizing the introduction of invasive weeds and restoring all temporarily disturbed areas, and shall ensure that the contractor successfully implements the Plan. The Plan shall indicate the best time of year for seeding to occur.

To facilitate preparation of the Plan, the District shall ensure that, prior to construction, a botanist (experienced in identifying sensitive plant species in the Project area) performs additional preconstruction surveys of the areas to collect more detailed baseline vegetation composition data, including species occurrence, vegetation characterization (tree diameter size, etc.), and percent cover of plant species. Photo documentation shall be used to show pre-project conditions.

The HMMP shall outline measures to restore, improve, or re-establish upland habitat for CRLF/AWS on the site, and shall include the following elements:

1. Name and contact information for the property owner of the land on which the mitigation will take place.
2. Identification of the water source for supplemental irrigation, if needed.
3. Identification of depth to groundwater.
4. Topsoil salvage and storage methods for areas that support special-status plants.
5. Site preparation guidelines to prepare for planting, including coarse and fine grading.
6. Plant material procurement, including assessment of risk of introduction of plant pathogens through use of nursery-grown container stock vs. collection and propagation of site-specific plant materials, or use of seeds.
7. Planting plan outlining species selection, planting locations and spacing, for each vegetation type to be restored.
8. Planting methods, including containers, hydroseed or hydromulch, weed barriers and cages, as needed.
9. Soil amendment recommendations, if needed.
10. Irrigation plan, with proposed rates (in gallons per minute), schedule (i.e. recurrence interval), and seasonal guidelines for watering
11. Site protection plan to prevent unauthorized access, accidental damage and vandalism
12. Weeding and other vegetation maintenance tasks and schedule, with specific thresholds for acceptance of invasive species
13. Performance standards by which successful completion of mitigation can be assessed in comparison to a relevant baseline or reference site, and by which remedial actions will be triggered;
14. Success criteria, which at a minimum require the restoration or compensation sites meet the following performance standards by the fifth year following restoration, as outlined in *Table 3.4-8*:
    - Temporarily impacted areas are returned to pre-project conditions or greater
    - Native vegetation cover shall be at least 70 percent of baseline/impact area native vegetation cover
    - No more cover by invasive species than the baseline/impact area
15. Monitoring methods and schedule.
16. Reporting requirements and schedule.
17. Adaptive management and corrective actions to achieve the established success criteria.
18. Educational outreach program to inform operations and maintenance departments of local land management and utility agencies of the mitigation purpose of restored areas to prevent accidental damages.

TABLE 3.4-8
MINIMUM SUCCESS CRITERIA FOR VEGETATION RESTORATION

Parameter	Field Indicator/Measurement
Vegetative Cover	**Non-native Grassland, Coyote Brush Scrub, Riparian Woodland, Mixed Woodland, Ruderal, Agricultural/Ornamental:**[5] 70 percent relative cover (relative cover is cover compared with baseline) of typical native and naturalized species known from the McCosker region by the end of the fifth monitoring year. **Individual Native Trees:** 65 percent survivorship by the fifth monitoring year.
Invasive Species	At the end of the fifth monitoring year, a restoration area shall have no more cover by invasive species than the baseline. Invasive plant species shall be defined as any high-level species on the California Invasive Plant Council Inventory.

Special-Status and Migratory Birds

Special status birds have been recorded in the vicinity of the Project area including golden eagle and other raptors. Migratory birds protected by the MBTA could also be impacted by construction. Implementation of recreation facility development, bridge construction, and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the existing trail system throughout the Project area would result in modifications to habitat that could have a substantial adverse effect to special status and nesting bird species.

The golden eagle (*Aquila chrysaetos*) is protected under the Federal Bald Eagle and Golden Eagle Protection Act and is a Fully Protected species under State law. White-tailed kite is also a Fully Protected species. Golden eagles are widespread in the western United States, and prefer secluded cliffs with overhanging ledges or large trees for nesting and cover. Nest trees include several species of oak (*Quercus* spp.), California bay laurel (*Umbellularia californica*), eucalyptus (*Eucalyptus* spp.), and western sycamore (*Plantanus racemosa*). Preferred territory sites include those that have a favorable nest site, a dependable food supply (medium to large mammals and birds), and broad expanses of open country for foraging. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats. A golden eagle nest is located in Sibley Preserve approximately 0.1 miles from the Project footprint. Disturbance to nesting eagles or other raptors could lead to nest abandonment. In addition, trail construction would result in temporary and permanent impacts to eagle and raptor foraging habitat that could affect prey activity, availability, or accessibility within and around the Project area; the impact is potentially significant.

In the long term, completion of the Project would have a beneficial effect by removing non-native tree species and improving vegetation diversity, leading to increased food for prey animals and improving foraging habitat for eagles and other raptors.

Other migratory birds, including special status birds, are found or have potential to nest within the Project area. During nesting season (February 15 through August 31) these birds could be disturbed by creek restoration, recreation facility development and trail construction activities. The federal Migratory Bird Treaty Act protects migratory birds from nest removal or harassment

[5] Eucalyptus woodland habitat will be restored to pre-project baseline conditions by replacing eucalyptus leaf litter and strippings over temporarily disturbed areas adjacent to the newly constructed trail.

leading to nest abandonment. Disturbance of migratory birds, including special status birds, is a potentially significant impact.

Implementation of **Mitigation Measures BIO-1a General Conservation Measures** and **BIO-1f Avoid and Minimize Impacts to Nesting Migratory Bird Species and Raptors** would reduce impacts to less than significant by identifying and avoiding golden eagle and other migratory bird nests during construction.

> **Mitigation Measure 1f - Project-wide: Avoid and Minimize Impacts to Nesting Migratory Birds and Raptors.** All construction activity associated with restoration and development of recreational infrastructure will avoid take of migratory birds and their eggs and nests, including golden eagles and other raptors, according to the restrictions of the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. Project activities will not remove any trees during nesting season (February 1 through July 31) unless first inspected by a qualified biologist and determined to be lacking active nests. Preconstruction nesting surveys shall be conducted during nesting season within 14 days of the start of construction activities. If pre-construction surveys identify nesting birds, construction activities near these trees will not commence until the young have fledged, as determined by a qualified biologist. A suitable avoidance buffer will be determined in consultation with CDFW, depending on the species of nesting bird. Completion of this measure shall be monitored and enforced by the District.
>
> **Significance after Mitigation:** *Less than Significant.*

Special-Status Mammals and Bats

Federal and state-listed endangered and special status mammals have been recorded in the vicinity of the Project area. These species include San Francisco dusky-footed wood rat and special status bats. Implementation of recreation facility development, bridge construction, and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the existing trail system throughout the Project area would result in modifications to habitat that could have a substantial adverse effect to special status mammal species.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is a CDFW Special Species of Concern (SSC). A number of dusky-footed woodrat nests were observed on the ground and up in coast live oak trees adjacent to the access road, along the existing Meadow Barley Trail, and along proposed trail routes in woodland and shrubland communities throughout the project area. While it is not known whether any of these nests are in current use, implementation of recreation facility development and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the trail system throughout the Project area would involve grading activities and vegetation disturbance, which would result in temporary impacts to dusky-footed woodrat habitat during construction; this impact is potentially significant.

Bats, including special status bats such as pallid bat, are moderately likely to roost in large trees in the Project area, and to forage over the channel. Roosting bats could be disturbed, killed, or injured by tree removal activity if present in construction areas. Disturbance of special status bats would be a potentially significant impact.

Implementation of **Mitigation Measures BIO-1a General Conservation Measures to Protect Habitat Quality** and **BIO-1g Avoid and Minimize Impacts to Dusky-footed Woodrat** to minimize impacts to woodrat nests; and **BIO-1h Avoid and Minimize Impacts to Special-status Bat Species** to avoid impacts to roosting bats would reduce potential impacts on special status mammals to a less than significant level.

Mitigation Measure BIO-1g - Project-Wide: Avoid and Minimize Impacts to Dusky-footed Woodrat. A USFWS-approved biologist will conduct a preconstruction survey for San Francisco dusky-footed woodrats and other species that may be inhabiting woodrat nests no more than 24 hours before construction in suitable habitat and will be onsite during construction activities in potential habitat to ensure that woodrats and their nests encountered during construction are avoided. To the greatest extent practicable, no vegetation should be removed within 5 meters (16.4 feet) of the perimeter of a woodrat den to provide full natural cover in the area directly adjacent to the den. Where it is necessary to remove vegetation within a radius of 5 to 15 meters (woodrat core area territory), clear cutting in this area shall be avoided, but some thinning of vegetation may proceed. Fifty-five percent of the woody understory and a minimum of 60 percent of the woody overstory shall be retained. Completion of this measure shall be monitored and enforced by the District.

Mitigation Measure BIO-1h - McCosker Sub-area: Avoid and Minimize Impacts to Special-status Bat Species.

In advance of tree and structure removal, a preconstruction survey for special-status bats shall be conducted by a qualified biologist to characterize potential bat habitat and identify active roost sites within the Project site. Should potential roosting habitat or active bat roosts be found in trees and/or structures to be removed under the project, the following measures shall be implemented:

- Removal of trees and structures shall occur when bats are active, approximately between the periods of March 1 to April 15 and August 15 to October 15, and outside of bat maternity roosting season (approximately April 16~~5~~ – August 3~~1~~14) and outside of months of winter torpor (approximately October 16~~15~~ – February 28), to the extent feasible.

- If removal of trees and structures during the periods when bats are active is not feasible and active bat roosts being used for maternity or hibernation purposes are found on or in the immediate vicinity of the Project site where tree and structure removal is planned, a no-disturbance buffer of 100 feet shall be established around these roost sites until they are determined to be no longer active by the qualified biologist.

- The qualified biologist shall be present during tree and structure removal if active bat roosts, which are not being used for maternity or hibernation purposes, are present. Trees and structures with active roosts shall be removed only when no rain is occurring or is forecast to occur for three days and when daytime temperatures are at least 50°F.

- Removal of trees with active or potentially active roost sites shall follow a two-step removal process:

1. On the first day of tree removal and under supervision of the qualified biologist, branches and limbs not containing cavities or fissures in which bats could roost, shall be cut only using chainsaws.

2. On the following day and under the supervision of the qualified biologist, the remainder of the tree may be removed, either using chainsaws or other equipment (e.g. excavator or backhoe).

- Removal of structures containing or suspected to contain active bat roosts, which are not being used for maternity or hibernation purposes, shall be dismantled under the supervision of the qualified biologist in the evening and after bats have emerged from the roost to forage. Structures shall be partially dismantled to significantly change the roost conditions, causing bats to abandon and not return to the roost.

Significance after Mitigation: *Less than Significant*

Fish

Although no special status fish occur in the Project area, the resident rainbow trout population in San Leandro Creek is genetically unique, matching the population used to identify the species in the 19th century. Implementation of creek restoration and enhancement activities in San Leandro Creek and the McCosker sub-area would result in modifications to habitat that could have a temporary adverse effect to rainbow trout, though the long-term effect would be beneficial. The temporary adverse effect to rainbow trout is potentially significant.

Implementation of **Mitigation Measures BIO-1a: General Conservation Measures to Protect Habitat Quality**; and **BIO-1i: Avoid and Minimize Impacts to Fish** to protect rainbow trout in the event dewatering would reduce potential impacts on rainbow trout to a less than significant level.

Mitigation Measure BIO-1i - McCosker Sub-area: Avoid and Minimize Impacts to Fish. If worksites require dewatering, fish shall be captured and relocated to avoid injury and mortality and minimize disturbance during the construction season. The following guidelines shall apply:

- The District shall consult with CDFW to provide preservation and avoidance measures commensurate with the CDFW standards.

- Prior to and during the initiation of construction activities, a qualified CDFW-approved biologist and other approved fisheries biologists shall be present during installation and removal of clear-water creek diversions.

- For sites that require flow diversion and exclusion, the work area will be blocked by placing fine-meshed nets or screens above and below the work area to prevent state or federally listed species from re-entering the work area. To minimize entanglement, mesh diameter will not exceed 5 mm. The bottom edge of the net or screen will be secured to the channel bed to prevent fish from passing under the screen and avoid scour by flow. Exclusion screening will be placed in low velocity areas to minimize impingement. Screens will be checked weekly and cleaned of debris to permit free flow of water.

- Before removal and relocation begins, the qualified fisheries biologist will identify the most appropriate release location(s). In general, release locations should have water temperatures similar to (<3.6°F difference) the capture location and offer ample habitat (e.g., depth, velocity, cover, connectivity) for released fish, and should be selected to minimize the likelihood of reentering the work area or becoming impinged on exclusion nets or screens.

- The means of capture will depend on the nature of the work site, and will be selected by a qualified fisheries biologist. Complex stream habitat may require the use of electrofishing equipment (e.g., Smith-root LR-24 backpack electrofisher), whereas in outlet pools, aquatic vertebrates and invertebrates may be captured by pumping down the pool and then seining or dipnetting. Electrofishing will be used only as a last resort.

- When feasible, initial fish relocation efforts will be performed several days prior to the scheduled start of construction. To the extent feasible, flow diversions and species relocation will be performed during morning periods. The fisheries biologist will survey the flow exclosures throughout the diversion effort to verify that no state or federally listed fish or aquatic invertebrates are present. Afternoon pumping activities should generally not occur and pumping should be limited to days when ambient air temperatures are not expected to exceed the limits allowed by NMFS guidelines. Air and water temperatures will be measured periodically, and flow diversion and species relocation activities will be suspended if temperatures exceed the limits allowed by NMFS guidelines.

- Handling of fish and aquatic invertebrates will be minimized. When handling is necessary, personnel will wet hands or nets before touching them.

- Prior to translocation, fish that are collected during surveys will be temporarily held in cool, aerated, shaded water using a five-gallon container with a lid. Overcrowding in containers will be avoided; at least two containers will be used and no more than 25 fish will be kept in each bucket. Aeration will be provided with a battery-powered external bubbler. Fish will be protected from jostling and noise, and will not be removed from the container until the time of release. A thermometer will be placed in each holding container and partial water changes will be conducted as necessary to maintain a stable water temperature. Fish will not be held more than 30 minutes. If water temperature reaches or exceeds NMFS limits, the fish and other aquatic species will be released and relocation operations will cease.

- If mortality during relocation exceeds three percent, relocation will cease and CDFW will be contacted as soon as feasible.

Overwintering Monarchs

Overwintering colonies of monarch butterflies on the construction site and adjacent areas could be affected by construction activities, such as clearing and grubbing, tree removal or tree trimming associated with trail building. Physical alteration of habitat, noise, vibrations, visual disturbance, and increased human activity associated with Project construction could result in colony disturbance to thermoregulation that could cause monarchs to fly in cold or wet conditions, and could interrupt mating and/or result in colony failure. Suitable overwintering

habitat exists in the northwest corner of the study area in a eucalyptus woodland within Sibley Preserve. Colony failure would be a significant impact under CEQA.

Implementation of **Mitigation Measures BIO-1a: General Conservation Measures** and **BIO-1j: Avoidance and Protection of Overwintering Monarch Butterflies** would reduce potential impacts on overwintering monarchs to a less than significant level by conducting pre-construction surveys, and avoiding overwintering monarchs if an overwintering site is identified.

Mitigation Measure BIO-1j - Preserve Sub-area Eucalyptus Woodland: Avoidance and Protection of Overwintering Monarch Butterfly Colonies.

Construction activities in and around potential butterfly overwintering sites shall occur outside of the overwintering season (November 1 to March 31), to the greatest extent feasible, to avoid potential impacts on monarch butterfly overwintering habitat. However, when it is not feasible to avoid the overwintering season and construction activities take place during this time, the following measures shall apply:

- Preconstruction surveys shall be conducted for overwintering monarch butterfly sites within 100 feet of the construction areas.

- Surveys for overwintering aggregations of monarch butterflies shall be conducted over the winter season (November to first week of March) prior to construction activities. A minimum of two surveys shall be conducted: one during Thanksgiving week and the other during the week of January 1. Surveys shall follow survey methods specified by the Xerces Society for Invertebrate Conservation (Xerces, 2004).

- If an active overwintering site is located, work activities shall be delayed within 100 feet of the site location until avoidance measures have been implemented. Appropriate avoidance measures shall include the following measures (which may be modified as a result of consultation with the CDFW to provide equally effective measures):

  – If the qualified wildlife biologist determines that construction activities would not affect an active overwintering site, activities may proceed without restriction.

  – A no-disturbance buffer may be established around the overwintering site to avoid disturbance or destruction until after the overwintering. The extent of the no-disturbance buffers shall be determined by a qualified wildlife biologist in consultation with the CDFW.

  – Throughout the year, the District shall avoid removing or trimming trees utilized by monarch butterflies or trees adjacent to the winter roost to prevent indirect changes to the humidity, wind exposure, and temperature within the immediate vicinity of the roost site. Any routine tree trimming shall be done between April and August to eliminate the risk of disturbance to monarch colonies, and shall be conducted under the guidance of a qualified monarch butterfly specialist if butterflies have been documented in the Project area.

Significance after Mitigation: *Less than Significant.*

Impact BIO-2: The Project could have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service. (Less than Significant with Mitigation)

Riparian habitat occurs in the Project area and would be impacted by the Project: riparian habitat. Construction could have permanent and temporary impacts on this natural community. In the short-term, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat would involve temporary disturbance to 0.18 acres of riparian habitat, as a result of filling, grading, bridge construction, and other stream channel modifications that would occur during stream restoration; trail development across limited riparian habitat; tree trimming for trail construction activities; and, tree removal for recreation facility development and creek restoration improvements. The restoration of 2,142 linear feet of riparian corridor along Alder Creek would result in the removal of approximately 5 trees. Tree removal over the short term has the potential to adversely impact tree-dependent wildlife and bird species and reduce the riparian canopy. In the long-term, this tree removal would be offset by the planting of approximately 629 willows and 122 additional native riparian trees as part of riparian restoration.

The Project would result in the enhancement of 149 linear feet (0.08 acres) of riparian woodland, the restoration of 2,142 linear feet (3.23 acres) of riparian woodland, and the development of 2,912 linear feet (0.58 acres) of aquatic habitat, for a total of 3.89 acres of riparian habitat, or a net creation of 3.82 acres of riparian habitat, a ratio of 56:1 in terms of habitat creation to permanent loss, within the Project area in the long term. Temporary and permanent impacts, restoration, and net habitat creation of riparian habitat are summarized in *Table 3.4-9, Riparian Habitat Impacts and Creation*, below.

TABLE 3.4-9
RIPARIAN HABITAT IMPACTS AND CREATION

Permanent Impacts to Riparian Habitat (acres)	Habitat Creation			Net Creation of Riparian Habitat (acres)
	Enhancement of Riparian Woodland (acres)	Development of Riparian Woodland (acres)	Development of Aquatic Habitat (acres)	
0.07	0.08	3.23	0.58	+3.82

Once restored, this area would be designated as a Special Protection Feature (Refer to *Figure 2-4, Special Protection Features*). Signage, fencing, planting, and other features would be used to discourage users from leaving trails and roads and entering riparian habitats; fencing would be designed to avoid interference with hydrology and wildlife movement.

Implementation of **Mitigation Measures BIO-2a: Minimize Disturbance to Riparian Habitat** and **BIO-2b: Habitat Mitigation and Monitoring to Mitigate for Temporary Impacts to Riparian Habitat** would reduce potential temporary impacts on riparian habitat to a less than significant level by delineating and avoiding riparian habitat, and restoring temporary,

unavoidable impacts to riparian habitat. Creation of habitat exceeds permanent impacts to riparian habitat, and therefore no compensatory mitigation is required.

Measure BIO-2a – Project-wide: Minimize Disturbance to Riparian Habitat

For work occurring adjacent to riparian habitat, riparian areas shall be clearly delineated with flagging by a qualified biologist. Riparian areas shall be separated and protected from the work area through silt fencing, amphibian-friendly fiber rolls (i.e., no monofilament), or other appropriate erosion control material. Material staging, and all other Project-related activity shall be located as far possible from riparian areas. If riparian areas cannot be avoided, any temporarily impacted areas shall be restored to pre-construction conditions or better at the end of construction (see *Mitigation Measure BIO-2b: Habitat Mitigation and Monitoring Plan*).

Mitigation Measure BIO-2b – Project-wide: Habitat Mitigation and Monitoring to Mitigate for Temporary Impacts to Riparian Habitat

If temporary disturbance to riparian habitat within the Project area cannot be avoided, the Revegetation Plan (Plan) discussed in **Mitigation Measure BIO-1e: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged Frog and Alameda Whipsnake Habitat,** shall be implemented at all riparian habitat temporarily impacted by construction activities. The Plan shall outline measures to restore, improve, or re-establish riparian habitat on the site.

Significance After Mitigation: *Less than Significant.*

Impact BIO-3. This Project could have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Less than Significant with Mitigation)

Under CWA Section 404, the U.S. Army Corps of Engineers (USACE) regulates activities that result in the discharge of dredged or fill material into waters of the United States. Waters of the United States include wetlands as well as streams, rivers, lakes, reservoirs, ponds, bays, and oceans (33 CFR 328.3[e]). Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3[b]). Wetlands, streams, reservoirs, sloughs, and ponds are typically under federal jurisdiction under Section 404 of the CWA and state jurisdiction under the Porter-Cologne Water Quality Control Act. Streams and ponds typically fall under state jurisdiction under Section 1602 of the California Fish and Game Code.

Jurisdictional waters on the Project site include wetlands and streams. Impacts to streams are addressed under Impact BIO-2; therefore, only wetland impacts are addressed under Impact BIO-3. Wetland habitat is present along proposed trail routes predominately in the Western Hills and McCosker sub-areas of the Project area. Implementation of recreation facility development,

bridge construction and creek restoration and enhancement activities in the McCosker sub-area, and expansion of the existing trail system throughout the Project area would impact wetlands; this impact is potentially significant. Project activities would result in temporary impacts to 0.03 acres of wetlands and a permanent impact of 0.13 acre of wetlands. This would be a potentially significant impact. Under federal and state regulations, loss of wetlands habitats must be mitigated to achieve no net loss in extent or value of wetland habitats.

Half of the permanent impacts, 0.03 acres, would be offset by the creation of in-stream wetlands associated with the daylighting of 2,900 linear feet of creek channel. In addition, 0.58 acres of aquatic riparian habitat will be created through riparian habitat enhancement and restoration. Under BIO-2, *Table 3.4-9* shows that 3.36 acres of terrestrial riparian woodland offsets permanent riparian impacts of 0.07 acres by a ratio of 48:1, leaving the 0.58 acres of aquatic riparian habitat to offset the permanent loss of 0.10 acres of wetlands in the project area by a ratio of over 5:1. In addition, restoration and enhancement of approximately 2,291 linear feet of channel and 770 linear feet of a side tributary considered waters of the U.S., including the planting of approximately 629 willows and 122 additional native riparian trees would have a long-term benefit to wetlands and waters.

Impacts to riparian waters are addressed under Mitigation Measures **BIO-2a: Minimize Disturbance to Riparian Habitat** and **BIO-2b: Habitat Mitigation and Monitoring Plan to Mitigate for Temporary Impacts to Riparian Habitat**. In addition, implementation of Mitigation Measure **BIO-3a: Avoid and Minimize Disturbance to Wetlands and Waters of the U.S. and of the State, and BIO-3b: Habitat Mitigation and Monitoring Plan to Mitigate for Temporary Impacts to Wetlands and Waters of the U.S. and of the State** would reduce impacts to a less than significant level by conducting a jurisdictional wetland delineation, avoiding impacts to jurisdictional waters, and restoring temporarily impacted jurisdictional waters to pre-construction conditions.

Creation of wetland habitat and jurisdictional waters exceeds permanent impacts to wetland habitat, and therefore no compensatory mitigation is required.

> **Mitigation Measure BIO-3a – Project-wide: Avoid and Minimize Impacts to Wetlands and Waters of the U.S. and of the State**
>
> A jurisdictional wetland delineation shall be conducted to determine the extent of waters of the U.S. and waters of the state within the Project component footprints and anticipated construction disturbance area.
>
> The Project shall be designed to avoid and/or minimize direct impacts on wetlands and/or waters under the jurisdiction of the USACE, RWQCB, and CDFW to the extent feasible.
>
> **Mitigation Measure BIO-3b – Project-wide: Habitat Mitigation and Monitoring to Mitigate for Temporary Impacts to Wetlands and Waters of the U.S. and of the State**
>
> If temporary disturbance to wetland habitat within the Project area cannot be avoided, the Revegetation Plan (Plan) discussed in **Mitigation Measure BIO-1e: Prepare and Implement a Revegetation Plan for Temporary Impacts to California Red-legged**

Frog and Alameda Whipsnake Habitat, shall be implemented at all wetlands or waters of the U.S. or of the State temporarily impacted by construction activities. The Plan shall outline measures to restore, improve, or re-establish wetland habitat on the site.

Significance After Mitigation: *Less than Significant.*

Impact BIO-4: The Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant)

The ridgeline above the Caldecott Tunnel is an important wildlife corridor for large carnivores and other wildlife passing between open space areas north and south of the Route 24 corridor.

In accordance with District Resolution No: 2006-1-14, District and OG Property Owner LLC 2008 First Amendment to Donation Agreement by and between the District and Property Owner, OG LLC, the 2004 Second Supplemental EIR for the Montanera Project, and City of Orinda Resolution 13-05, the following actions are anticipated for the Western Hills sub-area: 1) conveyance in fee of a 389-acre conservation easement with multi-use trails; and 2) management of an approximately one-half acre easement containing the Red-tailed Hawk Staging Area. In addition, park visitors will have access to ten parking spaces within Wilder City Park to access the Western Hills sub-area trails. Habitat benefits resulting from the addition of the Western Hills sub-area to Robert Sibley Volcanic Regional Preserve would include: seep wetlands, perennial, intermittent and ephemeral tributaries to Brookside Creek, including adjacent riparian habitat, and a mix of coyote scrub, oak and bay forest and non-native grassland habitat. The conservation easement also retains suitable Alameda whipsnake habitat in Recovery Unit 2, representing the Oakland-Las Trampas population. This protected open space retains the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands and retains the integrity of the network of protected lands in the East Bay Hills.

In addition, daylighting of Alder Creek would increase the amount of riparian habitat over the long term, allowing for additional cover for wildlife movement and nursery sites. Thus, the long-term impact of the Project on wildlife corridors and nursery sites is beneficial, and no mitigation is required.

Mitigation: None required.

3.4.8 Cumulative Effects

Geographic Extent/Context

The geographic scope for the analysis of cumulative impacts includes the San Leandro Creek watershed, the District open space, including Sibley, Western Hills, and McCosker sub-areas and

Huckleberry Preserve. These contiguous open space areas in the East Bay Hills constitute breeding and foraging habitat and corridors for wildlife and plants, including special status species.

Past, Present, and Reasonably Foreseeable Projects

Prior Planning Efforts

Existing conditions reflect the contributions of past projects to cumulative changes in biological resources. The contribution to open space with recreation and habitat preservation have included in this vicinity: 1) the formation of the District in 1934 through a publicly felt need to preserve the open space of the East Bay Hills and the continued expansion of the Preserve and other District parklands in the East Bay Hills, including the 2010 addition of the 250-acre McCosker parcel, resulting in the expansion of the original 227-acre Preserve area to 928 acres; 2) the initiation of the *2004 Caldecott Wildlife Corridor Study* to assemble information on resources and resource management of the area; and 3) the *2006 Final Resource Management Plan for the Montanera Project*, which established a plan for managing an additional 978 acres of open space between the District and EBMUD, including the 389-acres Western Hills conservation easement, as mitigation compensation for the development of the Wilder residential development. Each of these efforts was undertaken to benefit open space wildlife habitat.

Construction

None of the planned projects listed in *Table 3.10-3, Pending Projects in The Project Vicinity and Figure 3.10-3 Proposed Developments in the Project Vicinity* in *Section 3.10 Land Use and Planning* are contiguous with the Project. All the pending projects, except one church project, are small-scale residential infill projects. As such, while the added parkland area and additional access points may benefit these projects by providing recreation opportunities in close proximity, none of them are expected to alter the status of the Project area as parkland and open space or contribute incrementally to the disturbance of wildlife from other projects in the surrounding area that could be under construction at the same time.

Operation and Maintenance

The Project would have a *less-than-significant* operation and maintenance-related impact associated with the CEQA criteria because they would not increase impacts on biological resources, and may improve conditions by daylighting Alder Creek and re-routing trails away from sensitive resources. Similarly, the environmental analysis documents for the above-listed cumulative projects did not identify any substantial impact to biological resources in the Project area. Therefore, the Project and alternatives would not have a cumulatively considerable contribution to a cumulative impact, and *significant* cumulative impacts are not anticipated to occur as a result of the cumulative projects. The Project's long-term, minor effects on biological resources generally would be beneficial.

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3.5 Cultural Resources and Tribal Cultural Resources

This section examines the potential impacts of the Project on cultural resources, including paleontological, unique geological, and tribal cultural resources. Due to the different methods involved in paleontological and cultural resources analyses, these issue areas are discussed separately. For the purposes of this analysis, the terms *cultural resource*, *paleontological resource*, and *unique geological resource* are defined as follows:

- *Cultural resource* – prehistoric and historic-era sites, structures, districts, and landscapes, or other evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reason. These resources include the following types of CEQA-defined resources: historical resources, archaeological resources, tribal cultural resources, and human remains.

- *Paleontological resource* – fossilized evidence of past life found in the geologic record. Fossils are preserved in sedimentary rocks, which are the most abundant rock type exposed at the surface of the earth. Despite the abundance of these rocks, and the vast numbers of organisms that have lived through time, preservation of plant or animal remains as fossils can be a rare occurrence. In many cases, fossils of animals and plants occur only in limited areas and in small numbers relative to the distribution of the living organisms they represent. In particular, fossils of vertebrates–animals with backbones–are sufficiently rare to be considered nonrenewable resources.

- *Unique geologic feature* – geologic feature (e.g., an ore occurrence, type of igneous rock, particular geologic formation) that: the best example of its kind locally or regionally; embodies the distinctive characteristics of a geologic principle that is exclusive locally or regionally; provides a key piece of geologic information important in geology or geologic history; is a "type locality" of a geologic feature; is a geologic formation regionally or locally exclusive; contains a mineral that is not known to occur elsewhere in the region; or is used repeatedly as a teaching tool.

The analysis of these resources includes: a description of the regulatory framework that guides the decision-making process, existing conditions of the Project area, thresholds for determining if the Project would result in significant impacts, anticipated impacts, mitigation measures, and the level of significance after mitigation.

This section relies upon the information and findings presented in the following technical report prepared for the Project by ESA:

- *McCosker Sub-area Creek Restoration and Recreational Infrastructure Improvements Project Cultural Resources Survey and Inventory Report* (Hoffman et al., 2018)

Additional details on background context, Native American correspondence, and cultural resources identified are presented in the technical report.

3.5.1 Key Terms

Architectural Resource

This resource type includes historic buildings, structures (e.g., bridges, canals, roads, utility lines, railroads), objects (e.g., monuments, boundary markers), and districts. Residences, cabins, barns, lighthouses, military-related features, industrial buildings, and bridges are some examples of architectural resources.

Archaeological Resource

This resource type consists of prehistoric and historic-era archaeological resources. Prehistoric archaeological resources consist of village sites, temporary camps, lithic scatters, roasting pits/ hearths, milling features, petroglyphs, rock features, and burials. Associated artifacts include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs). Historic-era archaeological resources consist of townsites, homesteads, agricultural or ranching features, mining-related features, refuse concentrations, and features or artifacts associated with early military and industrial land uses. Associated artifacts include stone, concrete, or adobe footings and walls; artifact filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If a resource is considered a ruin (e.g., building lacking structural elements, structure lacking historic configuration, etc.), it is classified as an archaeological resource.

Tribal Cultural Resource

This resource type consists of sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, in the California Register of Historical Resources (California Register) or a local register of historical resources.

Paleontological Resource

This type of resource consists of the fossilized evidence of past life found in the geologic record. Fossils include both body fossils, such as bone, teeth, shell, or wood, and trace fossils, such as footprints, skin impressions, body molds or casts, and leaf impressions. Fossils are preserved in sedimentary rocks, which are the most abundant rock type exposed at the surface of the earth. Despite the abundance of these rocks, and the vast numbers of organisms that have lived through time, preservation of plant or animal remains as fossils can be a rare occurrence. In many cases, fossils of animals and plants occur only in limited areas and in small numbers relative to the distribution of the living organisms they represent. In particular, fossils of vertebrates—animals with backbones—are sufficiently rare to be considered nonrenewable resources.

Unique Geologic Feature

As described above, a geologic feature (e.g., an ore occurrence, type of igneous rock, particular geologic formation) is a unique geologic feature if it: is the best example of its kind locally or regionally; embodies the distinctive characteristics of a geologic principle that is exclusive locally

or regionally; provides a key piece of geologic information important in geology or geologic history; is a "type locality" of a geologic feature; is a geologic formation regionally or locally exclusive; contains a mineral that is not known to occur elsewhere in the region; or is used repeatedly as a teaching tool. The "type locality" is the place where a geologic feature was first recognized and described, and from which the feature often takes its name; a type locality is unique and exists at only one location.

Area of Direct Impact

For the purposes of this section, the Area of Direct Impact (ADI) is defined as the both the horizontal and vertical maximum extents of potential direct impacts to cultural and paleontological resources that could result from the Project, and encompasses the footprint of Project actions, including staging and access areas. 1,318 acres, although the ADI consists of 18.6 acres (including 12.4 acres of Recreation/Staging Units, 4.0 acres of creek restoration, and 2.2 acres of new narrow trail development. The ADI extends vertically to the maximum depth of Project-related ground disturbance.

3.5.2 Regulatory Setting

For the purposes of CEQA, cultural resources are defined to include architectural resources, archaeological resources, tribal cultural resources, and paleontological resources. CEQA requires that public agencies consider the effects of their actions on cultural resources eligible for listing in the California Register. In addition, CEQA sets specifications for the evaluation of prehistoric cultural resources and requires a records search for identification of paleontological resources. This subsection describes the laws, policies, and regulations that address these resources in the Project area.

State

California Environmental Quality Act

The State implements provisions in CEQA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, oversees adherence to CEQA regulations. The OHP also maintains the California Historic Resource Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State's jurisdiction. Typically, a resource must be more than 50 years old to be considered as a potential historical resource. The OHP advises recordation of any resource 45 years or older, since there is commonly a five-year lag between resource identification and the date that planning decisions are made.

CEQA (codified at PRC § 21000 *et seq.)* is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a project would have a significant effect on historical resource and unique archaeological resources.

Historical Resources

CEQA Guidelines recognize that a historical resource includes: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC § 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC § 21084.1 and CEQA Guidelines § 15064.5 apply. If an archaeological site does not meet the criteria for a historical resource contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of PRC § 21083, pertaining to unique archaeological resources.

Unique Archaeological Resources

As defined in PRC § 21083.2 a "unique archaeological resource" is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

The CEQA Guidelines note that if an archaeological resource is not a unique archaeological resource or historical resource, the effects of the project on those cultural resources shall not be considered a significant effect on the environment (CEQA Guidelines § 15064.5[c][4]).

Tribal Cultural Resources

Assembly Bill (AB) 52, enacted in September 2014, recognizes that California Native American tribes have expertise with regards to their tribal history and practices. The bill established a new category of cultural resources known as tribal cultural resources to consider tribal cultural values when determining impacts on cultural resources (PRC § 21080.3.1, 21084.2, and 21084.3). PRC § 21074(a) defines a tribal cultural resource as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - included or determined to be eligible for inclusion in the California Register; or
  - included in a local register of historical resources, as defined in PRC § 5020.1(k).

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC § 5024.1. In applying these criteria, the lead agency would consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria of PRC § 21074(a) is also a tribal cultural resource if the landscape is geographically defined in terms of the size and scope. Also, an historical resource as described in PRC § 21084.1, a unique archaeological resource as defined in PRC § 21083.2, or a non-unique archaeological resource as defined in PRC § 21083.2 may also be a tribal cultural resource if it meets the criteria of PRC § 21074(a).

AB 52 requires lead agencies to analyze project impacts on "tribal cultural resources," separately from archaeological resources (PRC § 21074 and 21083.09), in recognition that archaeological resources have cultural values beyond their ability to yield data important to prehistory or history. AB 52 also defines "tribal cultural resources" in a new section of the PRC (§ 21074, see above), and requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC § 21080.3.1, 21080.3.2, and 21082.3). The provisions of AB 52 apply to projects that have a notice of preparation or notice of negative declaration/mitigated negative declaration filed on or after July 1, 2015. As such, AB 52 applies to the Project.

Unique Paleontological Resources

As part of the CEQA process, one of the questions that must be answered by the lead agency relates to paleontological resources: "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (CEQA Guidelines § 15023, Appendix G, Section XIV, Part a). CEQA does not define what constitutes a unique paleontological resource; however, the Society of Vertebrate Paleontology (SVP) has developed professional guidelines for identifying significant paleontological resources (see below).

In general, for project sites that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For project sites that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to a less-than-significant level through the implementation of paleontological mitigation.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC § 5024.1[a]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places (National Register).

To be eligible for the California Register, a cultural resource must be significant at the local, State, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

1. Is associated with the lives of persons important in our past;

2. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

3. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must be of sufficient age, and retain enough of its historic character or appearance (integrity) to convey the reason for its significance. Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in the National Register and those formally Determined Eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historic resources;
- Historic resources contributing to historic districts; and
- Historic resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Public Resources Code Section 5097

California PRC § 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any Native American artifacts or human remains is guilty of a felony, which is punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell or dissect or with malice or wantonness is also guilty of a felony which is punishable by imprisonment. PRC § 5097.5 specifies that any unauthorized removal of paleontological remains is a misdemeanor.

California Public Resources Code Sections 5097.5 and 30244

Other state requirements for paleontological resource management are included in PRC § 5097.5 and 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

California Native American Historic Resource Protection Act

The California Native American Historic Resources Protection Act of 2002 imposes civil penalties, including imprisonment and fines up to $50,000 per violation, for persons who unlawfully and maliciously excavates upon, removes, destroys, injures, or defaces a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register.

California Health and Safety Code Section 7050.5

Section 7050.5 of the California Health and Safety Code (HSC) protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery. PRC § 5097.98 (and reiterated in CEQA Guidelines § 15064.59[e]) also identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

California Penal Code Section 622.5

The California Penal Code § 622.5 sets the penalties for the damage or removal of paleontological resources.

Society for Vertebrate Paleontology

The SVP has established standard guidelines (SVP, 1995; SVP, 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological resource specific Laws, Ordinances, Regulations, and Standards accept and use the professional standards set forth by the SVP.

As defined by the SVP (2010:11), significant nonrenewable paleontological resources are:

> *fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).*

As defined by the SVP (1995:26), significant fossiliferous deposits are:

> *A rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals, e.g., trackways, or nests and middens which provide datable material and climatic information). Paleontologic resources are considered to be older than recorded history and/or older than 5,000 BP.*

Based on the significance definitions of the SVP (1995, 2010), all identifiable vertebrate fossils are considered to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and/or its distribution. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. Identifiable plant and invertebrate fossils are considered significant if found in association with vertebrate fossils or if defined as significant by project paleontologists, specialists, or local government agencies.

A geologic unit known to contain significant fossils is considered to be "sensitive" to adverse impacts if there is a high probability that earth-moving or ground-disturbing activities in that rock unit will either directly or indirectly disturb or destroy fossil remains. Paleontological sites indicate that the containing sedimentary rock unit or formation is fossiliferous. The limits of the entire rock formation, both areal and stratigraphic, therefore define the scope of the paleontological potential in each case (SVP, 1995).

Fossils are contained within surficial sediments or bedrock, and are therefore not observable or detectable unless exposed by erosion or human activity. In summary, paleontologists cannot know either the quality or quantity of fossils prior to natural erosion or human-caused exposure. As a result, even in the absence of surface fossils, it is necessary to assess the sensitivity of rock units based on their known potential to produce significant fossils elsewhere within the same geologic unit (both within and outside of the study area), a similar geologic unit, or based on whether the unit in question was deposited in a type of environment that is known to be favorable for fossil preservation. Monitoring by experienced paleontologists greatly increases the probability that fossils will be discovered during ground-disturbing activities and that, if these remains are significant, successful mitigation and salvage efforts may be undertaken to prevent adverse impacts to these resources.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the SVP (2010:1-2) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e.g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.).

- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule (e.g., basalt flows or Recent colluvium). Rock units with low potential typically will not require impact mitigation measures to protect fossils.

- **Undetermined Potential.** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

- **No Potential.** Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontological potential of the rock units present within the study area.

Local

County and City General Plans and ordinances, the District Master Plan, portions of District Ordinance 38, and District guidelines are the primary local planning, treatment, and review mechanisms for cultural and paleontological resources in the Project area. Each is summarized below and in *Tables 3.5-1, Relevant Contra Costa County General Plan Goals and Policies* and *Table 3.5-2, Relevant District Master Plan Goals and Policies.*

TABLE 3.5-1
RELEVANT CITY AND COUNTY GENERAL PLAN (2005-2020) GOALS AND POLICIES

Goals and Policies	Project Consistency - Comments
Goal 9-31: To identify and preserve important archaeological and historic resources within the County.	**Objective 4**: Recreation Facility and Program Elements of the LUPA states, "Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan". This is supported by the following Supporting Strategy: Develop interpretive programs and/or self-guided walks that interpret the creek ecology and incorporate existing features that document historic uses of the site.
Policy 9-32: Areas which have identifiable and important archaeological or historic significance shall be preserved for such uses, preferably in public ownership.	The Project area is wholly contained with District parklands in public ownership.
Policy 9-33: Buildings or structures that have visual merit and historic value shall be protected.	No architectural resources listed on or potentially eligible for listing on the California Register or Contra Costa Historic Resources Inventory would be impacted by the Project.
Policy 9-34: Development surrounding areas of historic significance shall have compatible and high-quality design in order to protect and enhance the historic quality of the area.	LUPA recommendations state: Existing concrete walls remaining from the construction and quarrying business that formerly operated in this sub-area would be retained and incorporated into the design of the Fern View Terrace. Additionally, interpretive exhibits would provide opportunities for visitors to learn about the history of area and to understand the prior use of historic features.
The General Plan also includes an archaeological sensitivity map to assist in planning. The Project is in an area listed by the General Plan as an area of medium archaeological sensitivity.	The EIR analysis includes an analysis of archaeological resources.

Contra Costa Historic Resources Inventory

Contra Costa County maintains an inventory of historic resources, entitled the Contra Costa Historic Resources Inventory. The original inventory was completed in 1976, and updated in 1989 and 2010. No resources listed in the inventory are in or adjacent to the Project area.

East Bay Regional Parks District

2013 District Master Plan

The 2013 EBRPD Master Plan defines the long-term vision for lands managed by the District. The Master Plan provides a decision-making framework, and identifies policies that would achieve District-wide objectives. Development objectives, land use classifications, and planning and management guidelines are established by the Master Plan. The Master Plan includes policies for addressing the preservation and interpretation of cultural resources and respect for Native American traditional cultural resources, as summarized in *Table 3.5-2, Relevant District Master Plan Goals and Policies*.

TABLE 3.5-2
RELEVANT DISTRICT MASTER PLAN (2013) GOALS AND POLICIES

Goals and Policies	Project Consistency - Comments
CRM1: The District will manage, conserve, and when practical restore parkland cultural and historic resources and sites; to preserve the heritage of the people who occupied this land before the District was established; and continue to encourage the cultural traditions associated with the land today.	**Objective 4**: Recreation Facility and Program Elements of the LUPA states, "Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan". This is supported by the following Supporting Strategy: Develop interpretive programs and/or self-guided walks that interpret the creek ecology and incorporate existing features that document historic uses of the site.
CRM2: The District may acquire cultural and historic resource sites when they are within land that meet parkland acquisition criteria and will maintain an active archive of its institutional history and the history of its parklands and trails.	The Project area is wholly contained with District parklands in public ownership. The LUPA and EIR would serve to document the Project area's cultural history.
CRM3: The District will maintain a current map and written inventory of all cultural features and sites found on park land, and will preserve and protect these cultural features and sites "in situ" in accordance with Board policy. The District will evaluate significant cultural and historic sites to determine if they should be nominated for State Historic landmark status or for the National Register of Historic Places.	No cultural resources that are listed or potentially eligible for listing on the National Register of Historic Places or local register of historic resources would be impacted by the Project. Also, refer to Mitigation Measure CUL-1, which pertains to documentation and other protocol for previously unidentified archaeological resources.
CRM4: The District will determine the level of public access to cultural and historic resources using procedures and practices adopted by the Board of Directors. The District will employ generally accepted best management practices to minimize the impact of public use and access on these resources, and to appropriately interpret the significance of these resources on a regional scale.	Project recommendations state, "Existing concrete walls remaining from the construction and quarrying business that formerly operated in this sub-area would be retained and incorporated into the design of the Fern View Terrace". Additionally, interpretive exhibits would provide opportunities for visitors to learn about the history of area and to understand the use of historical features.
CRM5: The District will notify Native Americans and other culturally associated peoples in a timely manner of plans which may affect sites and landscapes significant to their culture and significant sites and landscapes.	Native American representatives identified by the Native American Heritage Commission were contacted throughout the LUPA planning process. Also refer to Sub-section 3.4.4 of this Cultural Resources and Tribal Cultural Resources Section.
CRM6: The District will accommodate requests by Native Americans, ranching or farming communities and other groups to help maintain and use cultural sites and to play an active role in their preservation and interpretation.	Native American representatives identified by the NAHC were contacted throughout the LUPA planning process. Also refer to Sub-section 3.4.4 of this Cultural Resources and Tribal Cultural Resources Section. In addition, an oral history by Dwyane McCosker (Imboden, 2014), a former landowner, was obtained as a part of the evaluation process to document prior ranching and construction activities.
IRSI1: The District will provide a variety of interpretive programs that focus attention on the region's natural and cultural resources. Programs will be designed with sensitivity to the needs and interests of all ages and backgrounds. Programs will enhance environmental experiences and foster values that are consistent with conserving natural and cultural resources for current and future generations to enjoy. The District will pursue and encourage volunteer support to assist in meeting these objectives.	See LUPA Objective 4, above.
KEP4: The District will participate in efforts to protect scenic or cultural resources…	See Mitigation Measures CUL-1, -3, and -4, which pertain to protocol for treatment of previously unidentified archaeological resources, human remains, and tribal cultural resources.

Goals and Policies	Project Consistency - Comments
NRM1: …the District will protect important geological and paleontological features from vandalism and misuse.	See District Ordinance 38 provisions, below, and Mitigation Measures CUL-2a, -2b, and -2c, which pertain to protection of geologic and paleontological features.
PRPT3: The primary objective of a Regional Preserve is to preserve and protect significant natural or cultural resources…	See District Ordinance 38 provisions, below, Mitigation Measures CUL-2a, -2b, and -2c, which pertain to geologic and paleontological features, and Mitigation Measures CUL-1, -3, and -4, which pertain to protocol for treatment of previously unidentified archaeological resources, human remains, and tribal cultural resources.
PRPT4: The size of a Natural or Cultural Preserve must be sufficient to ensure that its significant resource(s) can be managed so as to be protected and enjoyed. The significant resource(s) will consist of botanical, wildlife, geologic, topographic, archaeological, historic, or other features…	The Project area is wholly contained within District parklands in public ownership. Also, see LUPA Objective 4, above.

Ordinance 38

Portions of EBRPD Ordinance 38 address the disturbance of objects or features of cultural significance on District lands. Each applicable section is summarized in *Table 3.5-3, Relevant District Ordinance 38 Sections.*

TABLE 3.5-3
RELEVANT DISTRICT ORDINANCE 38 SECTIONS

Section 805: This section states that no person shall damage, injure, collect or remove earth, rocks, sand, gravel, fossils, minerals, features of caves, or any article or artifact of geological interest or value located on District parklands. Though oriented toward natural features, this ordinance may be construed as applying to objects or features that, while appearing natural, are actually modified by human action (e.g., cave pictographs misperceived as natural discoloration).
Section 806: This section states that no person shall damage, injure, collect or remove any object of paleontological, archaeological or historical interest or value located on District parklands. In addition, any person who willfully alters, damages, or defaces any object of archaeological or historical interest or value or enters a fenced and posted archaeological or historical site shall be arrested or issued a citation pursuant to California Penal Code § 622.5.
Section 807: This section states that special permission may be granted to remove, treat, disturb, or otherwise affect plants or animals or geological, historical, archaeological, or paleontological materials for research, interpretive, educational, or park operational purposes.
Section 808: This section states that no person shall cut, carve, paint, mark, paste, or fasten on any tree, fence, wall, building, monument, or other property in the District any bill, advertisement, directional or informational signs, or inscription whatsoever.

East Bay Regional Parks District 1989 Guidelines for Protecting Archaeological Resources

The *Guidelines for Protecting Parkland Archaeological Sites* (EBRPD 1989) contains guidance for District staff on the treatment of archaeological sites in the Project area. Guidance is provided about: archaeological site identification and protection; Native American input regarding proposed treatment of archaeological sites and human remains; and special zoning concessions for Native American and non-Native American archaeological sites.

3.5.3 Existing Conditions

Cultural Setting

Pre-Contact Setting

Categorizing the prehistoric period into broad cultural stages allows researchers to describe a broad range of archaeological resources with similar cultural patterns and components during a given time frame, thereby creating a regional chronology. This section provides a brief discussion of the prehistoric chronology for the Project area.

The natural marshland communities along the edges of bays and channels were the principal source for subsistence and other activities during the prehistory of the San Francisco Bay region. Many of the original surveys of archaeological sites in the Bay region were conducted between 1906 and 1908 by Stanford (and, later, U.C. Berkeley) archaeologist N.C. Nelson. Such surveys yielded the initial documentation of nearly 425 earth mounds and shell heaps along the littoral zone of the bay. From these beginnings, the most notable sites in the Bay region were excavated scientifically, such as the Emeryville shellmound (CA-ALA-309), the Ellis Landing Site (CA-CCO-295) in Richmond, and the Fernandez Site (CA-CCO-259) in Rodeo Valley. These dense midden sites, such as CA-ALA-309, have been carbon-14 dated to 2,310 ± 220 years before present (BP), but other evidence from around the bay suggests that human occupation in the region is of greater antiquity, perhaps as early as 9,000 BP.

Milliken et al. (2007) provide a framework for the interpretation of the San Francisco Bay Area. The authors divided human history in the San Francisco Bay Area into four broad periods: the *Paleoindian Period* (13,500 to 10,000 BP), the *Early Period* (10,000 to 2,500 BP), the *Middle Period* (2,500 to 950 BP), and the *Late Period* (950 to 450 BP). Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The *Paleoindian Period* (13,500 to 10,000 BP) was characterized by big-game hunters occupying broad geographic areas. Evidence of human habitation during the *Paleoindian Period* has not yet been discovered in the San Francisco Bay Area. During the *Early Holocene* (*Lower Archaic*, 10,000 to 5,500 BP), geographic mobility continued from the *Paleoindian Period* and is characterized by the millingslab and handstone as well as large wide-stemmed and leaf-shaped projectile points. The first cut shell beads and the mortar and pestle are first documented in burials during the *Early Period* (*Middle Archaic*, 5,500 to 2,500 BP), indicating the beginning of a shift to sedentism. During the *Middle Period*, which includes the *Lower Middle Period* (*Initial Upper Archaic*, 2,500 to 1,570 BP), and *Upper Middle Period* (*Late Upper Archaic*, 1,570 to 950 BP), geographic mobility may have continued, although groups began to establish longer term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. The addition of milling tools, obsidian, and chert concave-base projectile points, as well as the occurrence of sites in a wider range of environments, suggest that the economic base was more diverse. By the *Upper Middle Period*, mobility was being replaced by the development of numerous small villages. Around 1,570 BP, a "dramatic cultural disruption" occurred as evidenced by the sudden collapse of the *Olivella*

saucer bead trade network. During the *Initial Late Period* (*Lower Emergent*, 950 to 450 BP), social complexity developed toward lifeways of large, central villages with resident political leaders and specialized activity sites. Artifacts associated with the period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments (Milliken et al., 2007).

Ethnographic Setting

A compilation of ethnohistorical, historical, and archaeological data indicates that the Project area and vicinity was inhabited by a cultural group known as the Ohlone at the time of and for some time prior to European arrival. Specifically, ethnographic accounts show that the Huchiun group, of the Muwekma division, of Ohlone lived in the Project area and vicinity (Milliken et al., 2009:45; Milliken et al., 2007:100; Milliken, 1995:228, 243).

While traditional anthropological literature portrayed the Ohlone peoples as having a static culture, today it is better understood that many variations of culture and ideology existed within and between villages. While these "static" descriptions of separations between native cultures of California make it an easier task for ethnographers to describe past behaviors, this approach masks Native adaptability and self-identity. California's Native Americans never saw themselves as members of larger "cultural groups", as described by anthropologists. Instead, they saw themselves as members of specific village communities, perhaps related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins (Milliken, 1995; Milliken et al., 2007; Milliken et al., 2009).

Levy (1978) describes the language group spoken by the Ohlone (often referred to as "Costanoan" in the literature). This term is originally derived from a Spanish word designating the coastal peoples of Central California. Today Costanoan is used as a linguistic term that refers to a larger language family that included distinct sociopolitical groups that spoke at least eight languages of the Penutian language group. The Ohlone once occupied a large territory from San Francisco Bay in the north to the Big Sur and Salinas Rivers in the south (Milliken et al., 2007; Milliken et al., 2009).

In 1770, the Ohlone lived in approximately 50 separate and politically autonomous nations or tribelets, substantially more than the typical size of a tribelet, which ranged from 40 to 200 members. During the Mission Period (1770 to 1835), native populations, especially along the California coast, were brought—usually by force—to the missions by the Spanish missionaries to provide labor. The missionization caused the Ohlone people to experience cataclysmic changes in almost all areas of their life, particularly a massive decline in population caused by introduced diseases and declining birth rate, resulting in large part from colonization by the Spanish missionaries. Following the secularization of the missions by the Mexican government in the 1830s, most Native Americans gradually left the missions and established rancherias in the surrounding areas (Milliken et al., 2007; Milliken et al., 2009; Levy, 1978).

Economically, the Ohlone engaged in hunting and gathering. Their territory encompassed both coastal and open valley environments that contained a wide variety of resources, including grass seeds, acorns, bulbs and tubers, bear, deer, elk, antelope, a variety of bird species, and rabbit and

other small mammals. The Ohlone acknowledged private ownership of goods and songs, and village ownership of rights to land and/or natural resources; they appear to have aggressively protected their village territories, requiring monetary payment for access rights in the form of clam shell beads, and even shooting trespassers if caught (Milliken, 1995:13-30; Milliken et al., 2007; Milliken et al., 2009).

After European contact, Ohlone life ways were severely disrupted by missionization, disease, and displacement. Today the Ohlone still have a strong presence in the San Francisco Bay Area, and are very interested in their historic and prehistoric past, and in maintaining their culture into the future (Milliken, 1995; Milliken et al., 2007; Milliken et al., 2009).

Historic Setting

Early European Settlement

The first Europeans to visit the East Bay area were the Spanish explorers Pedro Fages and Reverend Juan Crespi, who passed through in 1772. After Mexico won independence from Spain in 1821, large tracts of land in California were granted to military heroes and loyalists. District parklands that were incorporated into the former Spanish and Mexican Land Grant Systems in the 1830s and 1840s included the Sibley Triangle (Thornhill Canyon) on the west slope of the Preserve sub-area, the Rancho San Antonio (a former Spanish land grant), and on the east slope extending down into the Wilder valley floor, the Rancho Laguna de los Palos Colorados (a former Mexican land grant), which was granted to Joaquin Moraga and his cousin Juan Bernal. Presumably these lands were used for livestock grazing during this period (Mundie & Associates, 1992).

American Farm and Ranching Era

During the 1850s and 1860s many of these land grants were disputed and by the 1860s small ranchers had claimed and subdivided the former land grant properties. The Wilder residential area, which includes the Western Hills sub-area, was subdivided in the 1860s into at least eleven smaller parcels, generally 80 to 160 acres in size. These parcels were owned by people of Anglo-American, German, and Portuguese ancestry, who had cattle and dairy ranches. By the end of the 19th century a trend toward consolidation occurred; until around the 1930s, only two or three individuals owned land within the Wilder area. These included at least two ranch sites, the Old Domingo Ranch and Boeger Ranch, primarily used for grazing. This pattern persisted until recent years (Mundie & Associates, 1992).

Three families homesteaded lands that included the McCosker sub-area in the 1860s: Patrick and Catherine McCosker, Joseph and Maria Pereira, and Robert Manes. These three families raised cattle and grew hay and grain for several generations, intermarrying and consolidating land ownership as families left the area. Alfred McCosker, grandson of Patrick and Catherine, purchased the Pereira ranch in the mid-1950s, and members of his family continue to own the McCosker sub-area land until the 2000s (Imboden, 2014).

The McCoskers ran cattle and horses on the property, and built a pumphouse near the property entrance to pump water into trucks for use by the ranch. The McCosker family farmed a portion of the land for their own purposes and planted ornamental trees and shrubs in the lower areas of

the property, while operating a paving business and rock quarry/rock crushing mill on the property from the 1950s to the 1970s. Alfred's son Dennis built a home on the ranch in the mid-1970s and raised horses. Development during this period included residential home sites, a heavy equipment construction equipment yard, and underground diesel fuel tanks (since remediated). Most of the sheds, storage containers, and other structures related to former use of the property were removed prior to the District assuming ownership. Remnants from the McCosker occupancy include a residence, a large metal equipment shed, (which now houses District equipment), a small "kitchen orchard", a pump house, the remains of a rock quarry and rock crushing plant, retaining walls and building foundations, and underground storage tanks and various elements from the former construction and ranching enterprises located throughout the site. Cattle grazing and trail uses are the current primary uses of the site (Imboden, 2014).

In 2000, the McCosker property was purchased by the Indian Valley Land Corporation as recreation mitigation property for a residential development in the City of Orinda. The parcel was donated to the District in 2010 and is in the process of being incorporated into the Robert Sibley Volcanic Regional Preserve.

East Bay Water Purveyors

During the 1800s the land in the East Bay Hills, including lands now within the Preserve sub-area, were purchased and developed by water purveyors to provide water to a rapidly expanding East Bay population. In the early 1920s, when water storage was threatened by urban growth and drought, the East Bay Water Company acquired the local water districts and purchased large tracts of the East Bay Hills to ensure sufficient water supplies. These companies consolidated into the East Bay Municipal Utility District (EBMUD) on May 22, 1923 with the intent of importing water directly from the Sierra Nevada and the Mokelumne River. Once EBMUD had a stable supply of water a declaration was made that more than 10,000 acres of the East Bay Hills were "surplus and available" lands. EBMUD continued to hold lands contained within the Preserve sub-area until 1936 (Royston Hanamoto Alley & Abey, and Larry Seeman Associates, Inc., 1985).

Regional Transportation Development

The 1913 completion of the Oakland, Antioch, and Eastern electric railroad that connected the San Francisco to Sacramento was a major historical event surmounting the geographical barriers with the construction of the 3,700 Redwood Peak Tunnel. In full operation, the Eastport route extended through Canyon with the Eastport Station near the McCosker entry located in what is now Huckleberry Preserve. The stop in the Canyon redwood groves southeast of the town became a popular picnic spot for East Bay residents. William Jennings Bryan made a campaign speech in this grove. The line was later reorganized into the Sacramento Northern Electric Railway in 1920. The railroad ran passenger service until 1941 and freight service on this line until 1957. The railroad tracks have since been removed and the tunnel has been sealed (Royston Hanamoto Alley & Abey, and Larry Seeman Associates, Inc., 1985).

The second route through the East Bay Hills was the Caldecott Tunnel, named after Thomas Caldecott. The first two bores of this tunnel were opened to vehicle traffic in 1937 and cut auto commute time between the East Bay and the LaMorinda area from two hours to 35 minutes. This

was the second vehicle tunnel blasted through the hills; the first was the Kennedy Tunnel, a 17-foot-wide shaft that was about 200 feet above the Caldecott Tunnel in what is now a part of the Preserve sub-area. Completed in 1903, this tunnel ultimately collapsed and has since been sealed off, leaving no obvious trace of the old opening (EBRPD, 2006).

Quarrying and Construction Operations

In addition to transportation systems facilitating access to and through the Project area, land uses expanded from ranching, agriculture and watershed uses to include construction and rock quarrying businesses, including a period when Kaiser Sand and Gravel Company operated the quarry in the Preserve sub-area (1940s-1960s). This quarry was non-operational by the time the District acquired the land in 1977. The Upton Quarry was on lands adjacent to the Western Hills sub-area (now Wilder residential development). This quarry was worked by Kaiser Industries from 1944 to 1954. Kaiser obtained gravel from surface mining of the basalts, using a ripping technique to excavate (Mundie & Associates, 1992). Visual scars from these operations are still visible from the Western Hills sub-area when looking east to the Orinda Open Space parcels. The quarrying and construction businesses operated by the McCosker family, in the McCosker sub-area of the Project area, spanned from the 1950s through the 1960s. Personal communication with Dwayne McCosker and his 2013 interview with the District established that Alfred McCosker began a rock crushing operation in the 1950s after Caltrans proposed to construct the Shepard Canyon freeway through the McCosker sub-area to connect Highway 13 in the East Bay to the City of Walnut Creek. Alfred McCosker's intent was to supply the highway project with rock, though the Caltrans project never materialized. The crushed rock was used to gravel roads and as stream fill throughout the McCosker sub-area, in addition to supplying local construction projects (Imboden, 2014).

East Bay Regional Park District Formation

The preservation of the Project area as open space dedicated to recreation and resource protection was closely aligned with the development of East Bay water districts and the establishment of large water reserves for the growing populace. The District was formed in the 1930's through a publicly felt need to preserve the open space of the East Bay Hills. In 1933 the State passed a law allowing the formation of regional park districts in response to a campaign by East Bay citizens. In 1934 an initiative campaign placed a measure on the November ballot providing for the establishment of the East Bay Regional Park District to manage surplus EBMUD lands. The East Bay Metropolitan Park Association, with the Sierra Club and other civic organizations, sponsored the successful ballot measure (LSA Associates, Inc., 2009).

In 1936 EBMUD sold 2,162 acres of watershed land, to be purchased in installments over five years, to the District for $656,544, thereby preserving the first regional parklands for the public's benefit. These lands became the EBRPD's first parks, comprising Tilden Regional Park, Temescal Regional Park, and Round Top Regional Preserve (Round Top), later renamed Sibley Volcanic Regional Preserve (Sibley Preserve). The original 227 acres of Round Top ~~Robert Sibley Volcanic Regional Preserve~~ were formally transferred from EBMUD to EBRPD in 1941 despite Round Top having already been established as an EBRPD park. ~~opened to the public, as Round Top Regional Preserve, two years after the formation of the District.~~ In the late 1930s and early 1940s Round Top was used as a boy scout camp. In 1972 this Preserve was renamed to

honor Robert Sibley, a founder and director of the District Board of Directors, and President of the Board from 1948 until his death in 1958 (EBRPD, 2006). Various parcels have been added to the Preserve over the years, including the 250-acre McCosker parcel that the District acquired as a donation in 2010, expanding the original 227-acre Preserve to 928 acres.

Geologic and Paleontological Setting

The Project is located in the Coastal Ranges Geomorphic Province. The Coast Ranges consist of relatively young (3.5 million years ago [Ma]) northwest-trending mountain ranges and valleys that run along the Pacific coast from Santa Barbara to the Oregon border, coincident with the Pacific-North American plate boundary (Page et al., 1998). The Coast Ranges preserve a thick sequence of sedimentary strata dating back to the Mesozoic (~251 Ma) overlying granitic and metamorphic bedrock (Norris and Webb, 1990). Although elevations are moderate within the Coast Ranges, the relief of these mountains is often considerable, with peaks rising around 1,000 meters just a few kilometers from the coast (Norris and Webb, 1990). These sedimentary rocks have a rich fossil history in central California, recording the filling of offshore basins dating to the Mesozoic followed by the progressively shallowing sea and the emergence of terrestrial environments in the Pliocene and Pleistocene (Page et al., 1998). This sedimentary sequence is dominated by Miocene rocks that are primarily marine in origin, such as the well-known Monterey Formation (Norris and Webb, 1990).

Locally, the Project area is in the Berkeley Hills in the Contra Costa Basin, in and around the Sibley Volcanic Regional Preserve. The Contra Costa Basin is a deep north-northwest trending basin in a faulted synclinorium, or conversely folded rock, in the Berkeley Hills structural block that has been filled with 1,200 to 2,000 meters of nonmarine and volcaniclastic sediments (Creely et al., 1982). The Sibley Volcanic Regional Preserve is centered around extensive volcanic features, including Round Top, a volcanic vent, as well as lava debris flows, feeder dikes, cinder piles, rhyolitic tuff, and others (Edwards, 1983) that date to the early late Miocene, around 10 Ma (Graham et al., 1984).

3.5.4 Research Methods

Cultural Resources

Information about Project area cultural resources was obtained through a records search, literature review, on-site investigations, and contacts with potentially interested parties as described below. The focus of the analysis was on the ADI, where Project actions with potential to impact cultural resources would occur. These activities include: 1) creek restoration; 2) improvements to existing staging areas; 3) development of new parking areas; 4) improvements to existing roadways and utilities; 5) bridge installation; 6) trail system expansion; and 7) recreation facility development. *Table 2-1 - Proposed Actions by Location* and *Figure ES-2, Land Use Plan Amendment Project Overview* provides an area-wide overview of the Project elements. *Table 2-3* provides a comparative summary of the proposed actions with existing conditions. *Figure 2-5, Proposed Actions Preserve Sub-area, Figure 2-6, Proposed Actions Western Hills Sub-area, Figure 2-7 Proposed Actions McCosker Sub-area, Figure 2-8 Proposed Actions for McCosker sub-area Creek Restoration and Recreation Development Area,* and *Figure 2-9 Proposed Actions*

Huckleberry Sub-area identify the locations of each of the Project actions. *Table 2-6 Construction Activities for Proposed Actions* provides a description of the potential impacts of each of the actions.

Archival Research

On May 11, 2016, July 27, 2017, and April 24, 2018, ESA staff conducted a cultural resources records search for the Project area at the Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park (File # 15-1655, 17-0175, and 17-2541). The NWIC maintains the official California Historical Resources Information System (CHRIS) records of previous cultural resources studies and recorded cultural resources for the Project area and vicinity.

The purpose of the records search was to: (1) determine whether known cultural resources have previously been recorded in or adjacent to the Project area; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby resources; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

ESA staff performed additional background and archival research of the McCosker sub-area in 2016, including: research from District archives and various online archives; an archaeological sensitivity analysis; an intensive-level pedestrian survey of the ADI; and correspondence with relevant Native American representatives.

Previous Cultural Resources Studies

The NWIC has reports from 11 previous cultural resources studies that included portions of the Project area. Of these, all but one included field surveys. The District is also aware of reports from three other previous cultural resources studies that included portions of the Project area; one is an oral history of Dwayne McCosker, former resident and long-time resident of the McCosker sub-area (Imboden, 2014); one is an architectural resources report of two houses ("Conley houses") at 111 Old Tunnel Road, in the Preserve sub-area (Hill, 1997); and one is an archaeological survey report for a small erosion control project in the Preserve sub-area (Fentress, 2009).

Previously Recorded Cultural Resources

The NWIC has record of five previously recorded cultural resources in the Project area. Of these, two are (historic-era) architectural resources (though one was recorded from an historic photo and has never been identified on the ground), one is an archaeological site of unknown age (though likely historic-era or modern), one is an archaeological isolate (though possibly natural), and one is an historic-era district. These previously recorded resources are described below. Also described below is an architectural resource (two houses at 111 Old Tunnel Road) described and evaluated for California Register-eligibility in the Hill (1997) architectural resources report not on file at the NWIC, but on file at the District; the NWIC does not have a site record on file for this resource.

Preserve Sub-area

Archival research identified six previously recorded cultural resources in the Preserve sub-area. These resources are described below.

P-01-011420/P-07-004486 is the Sibley Volcanic Regional Preserve Historic District (Sibley Historic District), and consists of the following contributing elements: hiking and equestrian trails, and Round Top peak. A park residence (P-07-004492) and modern interpretive center are non-contributing elements to the district. The district was originally recorded in 2012 and subsequently evaluated as National Register-eligible under Criterion A for its association with events that have made significant contributions to the history of Oakland and the East Bay Hills (Venno, 2012a). SHPO concurred with an assumed National Register-eligibility for the resource for the purposes of the Federal Emergency Management Agency (FEMA) Four Hazardous Fire Risk Reduction Projects, though this was for the purposes of that undertaking only (Roland-Nawi, 2013). The NWIC maps and the district record indicate that the resource's boundary consists of the Preserve and McCosker sub-areas. The district record's description of the boundary states that "Huckleberry Botanic Regional Preserve" is "to the east," and the resource's location map appears to be derived from a project map that included the entire Sibley Volcanic Regional Preserve, not created specifically for the resource (Venno, 2012a). Hoffman et al. (2018) note that the resource's boundary should be revised to encompass only the 227 acres that were part of the Sibley Volcanic Regional Preserve (formerly Round Top Regional Preserve) during the resource's period of significance (1936 to 1950); this would exclude the McCosker sub-area and portions of the Preserve sub-area added after 1950. This resource includes the Project ADI, specifically the following Project actions in the Preserve sub-area: improvements to the existing Sibley Main Staging Area; trail system expansion; and improvements to existing roadways.

P-07-002586 is in the Preserve sub-area and consists of a petroglyph of unknown age and origin. The site record describes it as a series of fine, shallow scratches on a boulder, which measures approximately 2 feet square and is nestled between two bay trees. The site record states that there are a number of parallel diagonal lines and an "arrow", which has a "modern look", made of many of the lines (Schwartz, 2002a). The resource is not in or in close proximity to the Project ADI.

P-07-002587 is recorded as a rock wall in the Preserve sub-area. The site record describes the resource as "of the same description as the Vollmer Peak wall" except that P-07-002587 has a perpendicular component that extends for "some unknown distance estimated to be more than 60'". The site record indicates that it was recorded based on a 1904 newspaper article photo and that (at the time of the site's recordation) District archaeologist/botanist Steve Edwards stated that he had extensive knowledge of the area, including having "walked every inch" of the Preserve sub-area and had never seen the resource (Schwartz, 2002b). The resource is mapped near the existing Round Top loop trail, which is part of the Project's proposed trail system expansion action in the Preserve sub-area, but appears to have either been destroyed or was incorrectly recorded.

P-07-002639 was recorded in 2002 by Shoup and Morgan, who described it as one chert flake, possibly natural in origin, in a drainage. The resource was recorded outside the ADI, though near

the Round Top service road, which is part of the Project's proposed trail system expansion action in the Preserve sub-area (Shoup and Morgan, 2002).

P-07-004492 is a non-contributing element of P-01-011420/P-07-004486 (Sibley Historic District) and consists of a 1940s residential building at 6800 Skyline Boulevard, in the Preserve sub-area. The resource was originally recorded in 2012 and subsequently evaluated as not eligible for listing in the National Register and California Register (Venno, 2012b), though it was assumed National Register-eligible for the purposes of the FEMA Four Hazardous Fire Risk Reduction Projects for the purposes of that undertaking (Roland-Nawi, 2013). The resource is in the ADI where the Project proposes improvements to the existing Sibley Main Staging Area in the Preserve sub-area.

111 Old Tunnel Road is an architectural resource consisting of two houses at the named address, in the Preserve sub-area. As mentioned above, the resource was the focus of an architectural resources study documented in a report on file at the District (Hill, 1997), but not the NWIC; no site record is on file at the NWIC for the resource. The resource is comprised of two single-family residences built in the late 1960s or early 1970s: one a small cottage and the other a Ranch style house. Hill (1997) evaluated the resource for California Register-eligibility, recommending it as not eligible. Since the evaluation, the cottage has been demolished and the Ranch style house has been renovated and now serves as a combined District security residence and office.

Western Hills Sub-area

Archival research identified no previously recorded cultural resources in the Western Hills sub-area of the Project area.

McCosker Sub-area

Archival research identified no previously recorded cultural resources in the McCosker sub-area of the Project area.

Huckleberry Botanic Regional Preserve

Archival research identified no previously recorded cultural resources in the Huckleberry Botanic Regional Preserve portion of the Project area.

Field Survey

ESA archaeologists conducted pedestrian surveys of all accessible portions of and areas adjacent to the ADI, except for existing trails in the Preserve sub-area, in a series of surveys conducted on the following dates: May 26, 2016; June 2, 2016; July 5 and 6, 2017; September 25, 2017; October 15, 2017; and April 27, 2018. ESA archaeologist Robin Hoffman, MA, RPA, acted as field director of the survey. During the surveys, intensive pedestrian survey methods were used, consisting of walking parallel transects spaced at no more than 15 meters apart and inspecting the surface for cultural material or evidence thereof. When ground visibility was poor, cleared areas and areas disturbed by rodents along and between the transect lines were checked with special attention. Notes on any identified cultural resources were collected to meet or exceed site recordation guidelines based on the OHP's *Instructions for Recording Historical Resources*

(OHP, 1995) and CHRIS recommendations. Digital photographs were taken to document ground conditions, and all observations were recorded in the field.

During the field surveys, seven previously unrecorded cultural resources (six archaeological, one architectural) were identified in the Project area, all in the McCosker sub-area, and two previously recorded cultural resources (Sibley Historic District [P-01-011420/P-07-004486], and P-07-004492) in the ADI, both in the Preserve sub-area, were visited and subsequently updated. These newly recorded resources and updated resources are described below.

Preserve Sub-area

During the field survey, two cultural resources, both previously recorded, were identified in the Preserve sub-area. These resources are described below.

P-01-011420/P-07-004486

This historic-era is described in detail in the *Previously Recorded Cultural Resources* section, above. As previously noted, the resource's recorded boundary includes all of the Preserve and McCosker sub-areas, though Hoffman et al. (2018) conclude that the resource's boundary should be revised to encompass only the 227 acres that were part of the Sibley Volcanic Regional Preserve (formerly Round Top Regional Preserve) during the resource's period of significance (1936 to 1950); this would exclude the McCosker sub-area and portions of the Preserve sub-area added after 1950. This resource includes the Project ADI, specifically the following Project actions in the Preserve sub-area: improvements to the existing Sibley Main Staging Area; trail system expansion; and improvements to existing roadways. The resource was evaluated by Venno (2012a) as National Register-eligible under Criterion A for its association with events that have made significant contributions to the history of Oakland and the East Bay Hills, receiving SHPO concurrence on an assumed National Register-eligibility for the purposes of the FEMA Four Hazardous Fire Risk Reduction Projects only (Roland-Nawi, 2013). Hoffman et al. (2018) supported Venno's evaluation, recommending the resource as both National Register- and California Register-eligible under Criterion A and 1, respectively.

P-07-004492

This historic-era is described in detail in the *Previously Recorded Cultural Resources* section, above. It consists of a 1940s residential building at 6800 Skyline Boulevard, in the ADI for where the Project proposes improvements to the existing Sibley Main Staging Area in the Preserve sub-area. The resource was evaluated as not eligible for listing in the National Register and California Register by Venno (2012b) but was assumed National Register-eligible for the purposes of the FEMA Four Hazardous Fire Risk Reduction Projects, though only for the purposes of that undertaking (Roland-Nawi, 2013). Hoffman et al. (2018) supported Venno's evaluation, recommending the resource as not individually eligible for the National Register- and California Register-eligible.

Western Hills Sub-area

No cultural resources, previously or newly recorded, were identified in the Western Hills sub-area portion of the Project area during the field survey.

McCosker Sub-area

During the field survey, seven cultural resources, all newly recorded, were identified in the McCosker sub-area. These resources are described below.

MS-1

This historic-era resource is in the southwestern portion of the McCosker sub-area, in the ADI where the Project proposes creek restoration activities (for Alder Creek). The resource consists of a concrete foundation comprised of a concrete pad and associated concrete walls, with the foundation and walls essentially flush with ground level. MS-1 may represent the remnants of a truck scale associated with his the McCosker family rock-crushing operation active in the 1950s and 1960s. ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

MS-2

This historic-era resource is in the southwestern portion of the McCosker sub-area. However, the resource is outside, though adjacent to, the ADI; specifically, where the Project would improve an existing roadway (Meadow Barley Trail) for use as a trail. The resource consists of a concrete retaining wall running parallel to a gravel road. MS-2 appears to represent improvements made to the McCosker sub-area by the McCosker family sometime between the late 1950s and early 1980s, based on construction and design. As such, it may or may not be of historic age (50 years of age or older). ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

MS-3

This historic-era resource consists of three features associated with a rock-crushing operation in the central-west portion of the McCosker sub-area. The resource is in the ADI, specifically, the proposed Fern View Terrace area, an element of the Project's proposed Recreation Facility Development action. The resource is comprised of: concrete pads, cinder block walls, concrete columns, a concrete retaining wall, an elevated concrete structure, a stepped concrete retaining wall/pad, and two parallel elevated concrete structures. The resource represents the remnants of the McCosker family rock-crushing operation active in the 1950s and 1960s. ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

MS-4

This historic-era resource is in the southwestern portion of the McCosker sub-area, in the ADI where the Project proposes creek restoration activities (for Alder Creek). The resource consists of four concrete pads and three cinder block walls in an overall rectangular shape. Research suggests that the resource represents the remains of a horse paddock constructed in the 1950s or 1960s by Alfred McCosker. ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

MS-5

This historic-era resource consists of 13 features in the southwestern and central-west portion of the McCosker sub-area. Specifically, several of the resource's features are in the ADI where the

Project proposes creek restoration activities (for Alder Creek), where the Project would improve an existing roadway (Meadow Barley Trail) for use as a trail, and construction of a new trail (Alder Creek Nature Trail). The resource is comprised of six areas of exposed metal culvert, one metal culvert with a concrete headwall, and six concrete inlet boxes. The resource represents remnants of Alder Creek culverting activities carried out by the McCosker family between the late 1950s and late 1970s. ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

MS-6

This historic-era resource consists of a small abandoned orchard in the central-west portion of the McCosker sub-area, outside but adjacent to the ADI where the Project proposes creek restoration activities (for Alder Creek), and construction of a new trail (Alder Creek Nature Trail). The resource is comprised of at least a dozen fruit trees (fig, peach, apple, and citrus) in rows enclosed by a wire fence. Overall, the resource encompasses approximately 0.35 acres. Research indicates that the orchard was planted and fenced by Alfred McCosker in the 1950s or 1960s. ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

MS-7

This historic-era resource is in the southwestern portion of the McCosker sub-area, in the ADI where the Project proposes creek restoration activities (for Alder Creek). MS-7 is an architectural resource that consists of a small vernacular cinder block building, originally used as a pump house, on the west side of Alder Creek. Research indicates that Alfred McCosker constructed the pump house soon after his purchase of the property in the mid-1950s and that it was used to pump water into trucks for use in ranching on the property. ESA evaluated the resource for California Register- and National Register-eligibility, recommending it not eligible for both (Hoffman et al., 2018).

Huckleberry Botanic Regional Preserve

No cultural resources, previously or newly recorded, were identified in the Huckleberry Botanic Regional Preserve portion of the Project area during the field survey.

Native American Outreach

Pursuant to State law under AB 52 (codified at PRC § 21080.3.1), the District, as part of CEQA review for the Project, reached out to California Native American Tribes listed in the NAHC's contact list. The goal of this outreach was to provide information on the Project and determine if any tribal cultural resources may be impacted by the Project.

ESA contacted the NAHC on May 9, 2016 in request of a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may have interest in the Project. The NAHC replied to ESA on May 20, 2016. The NAHC reply indicated that the SLF has no record of cultural resources in the Project area. The NAHC also included a list of Native American representatives to contact regarding these resources and who may be interested in the Project. On May 23, 2016, ESA sent letters to each contact provided by the NAHC. On September 25, 2017, pursuant to AB 52, the District, as part of CEQA review for the Project, sent

letters to those California Native American Tribes listed in the NAHC's contact list regarding the Project.

The letters from ESA and the District provided information on the Project and requested that the contacts share information on any cultural resources that may be affected by the Project. In addition, these Native American representatives were included in the community mailing lists for the community meetings and CEQA notifications.

None of the Native American representatives contacted responded with any information on the Project. *Appendix D, Project Correspondence with Native American Representatives* provides documentation of the Project correspondence with Native American representatives.

Paleontological Resources and Unique Geologic Features

In order to assess the potential Project impacts to paleontological resources and unique geologic resources, the following were conducted for the Project: a review of the UCMP online collections database; and a review of paleontologic and geologic scientific literature, including previous studies that included portions of the Project area.

Previous Paleontological Studies of the Project area

A previous paleontological investigation of the Project area, Paleontological Resources Inventory Project: East Bay Regional Park Areas by Lawler and Associates (1990) documented two (2) significant paleontological localities within the Sibley Volcanic Regional Preserve, where horse teeth (*Nannippus tahoensis*) were collected from the Orinda Formation. This report further indicated that there is high potential for additional fossil discoveries within the park.

Paleontological and Unique Geologic Feature Sensitivity Analysis

The geology of the Project area has been mapped by Dibblee and Minch (2005) at a scale of 1:24,000. The surficial geology of the Project area consists of seven geologic units: Alluvium (Qa), Landslide Deposits (Qls), Orinda Formation (Tor), Moraga Basalt (Tbm), and the Monterey Formation, including the Claremont Shale (Tm) and Sobrante Sandstone (Tso). These units and their paleontological sensitivity are discussed below.

Alluvium (Qa)

These sediments consist of unconsolidated gravel, sand, and clay and date from modern times to the early Holocene (11,700 BP) (Dibblee and Minch, 2005). These deposits occur along valley floors and drainages throughout the northeastern and southern Project area. Due to the young age of these deposits, they have low paleontological sensitivity at the surface; however, these sediments increase in age with depth, and therefore fossil resources may be encountered in the deeper levels of this unit. While the exact depth at which the transition to older alluvial sediments [>5,000 BP, following the SVP's definition (SVP, 2010)] is not known, fossils have been discovered across California in similar sediments as shallowly as 5 to 10 feet below ground surface (Jefferson, 1991a; Jefferson, 1991b; Reynolds and Reynolds, 1991). Alluvial sediments that date to the middle Holocene or beyond have a rich fossil history throughout California (Jefferson, 1991a; Jefferson, 1991b), including in and around Contra Costa County. Most

famously, the fossil beds used to define the Pleistocene Irvingtonian North American Land Mammal Age are from the Irvington District of Fremont, California, south of the Project area (Savage, 1951; Stirton, 1939). Iconic Ice Age fossils such as mammoths, horses, saber-toothed cats, and wolves, as well as smaller animals such as rodents, reptiles, fish, and birds are known from Pleistocene alluvium in this area (Baskin, 2016; Bell and Bever, 2006; Bell et al., 2004; Casteel and Adam, 1977), with the UCMP online collections inventory indicating they have 9, 934 vertebrate, invertebrate, and plant fossils from Pleistocene sediments collected from Contra Costa County (UCMP, 2018). Therefore, areas mapped as Alluvium (Qa) can be assessed as having low-to-high paleontological sensitivity, increasing with depth. Additionally, the Alluvim unit likely overlies the Orinda Formation (Tor) in most places within the Project area. Therefore, excavations into areas mapped as Alluvium may encounter the Orinda Formation at an undetermined, but possibly shallow, depth. Further geotechnical assessment would be necessary to define this depth.

Landslide Deposits (Qls)

Landslide debris is found as isolated deposits scattered across the southeastern Project area. These deposits form under high energy conditions during mass wasting events that are not conducive to the preservation of scientifically significant fossils. Therefore, this unit has low paleontological sensitivity. However, landslide debris overlies Alluvium (Qa) or the Orinda Formation (Tor), and so excavations into areas mapped as landslide debris may encounter these units at an undetermined, but possibly shallow, depth.

Orinda Formation (Tor)

The Orinda Formation includes the Siesta Formation in the vicinity of the Project area and consists of interbedded terrestrial pebble conglomerate, sandstone, and claystone that dates to the late Miocene (approximately 10 to 12 Ma) (Dibblee and Minch, 2005; Edwards, 1983). The Orinda Formation occurs across the surface of the Project area as three large north-northwest trending bands alternating with the Moraga Basalt and in some places is covered by stream deposits of Alluvium. The Orinda Formation preserves approximately 200 meters of fluvial sediments deposited on a floodplain bordering the San Pablo Sea, and includes the stream and lakebed deposits of the Siesta Formation (Creely et al., 1982; Edwards, 1983). The Orinda and the Siesta formations are documented to preserve some of the oldest mammalian fossils from central California, with multiple localities in the Contra Costa Basin documented preserving mammals such as mastodons, primitive horses, camels, antelope, and unusual sheep-sized creatures called oreodonts (Creely et al., 1982; Stirton, 1939), some of which have been found within the Sibley Volcanic Regional Preserve (Edwards, 1983). Therefore, the Orinda Formation has high paleontological sensitivity.

Moraga Basalt (Tbm)

The Moraga Basalt dates to the earliest late Miocene, around 10 Ma (Graham et al., 1984), and consists of black, massive, aphanitic lava flows (Dibblee and Minch, 2005). Volcanic igneous rocks such as basalt do not preserve fossil resources. However, Sibley Volcanic Regional Preserve is well known for the extensive volcanic features preserved in the Moraga Basalt, such that it has been characterized as a "natural museum of volcanic rocks" (Edwards, 1983:83). These features include vents such as Round Top and a part of Gudde ridge, ancillary feeder dikes,

massive volcanic debris flows, a lava vent plug, volcanic conduit, volcanic cinders, massive lava flows, and rhyolitic tuff, some of which has been better exposed for study by earlier quarrying activities (Edwards, 1983). Round Top, one of the area's highest peaks, is made up of lava and volcanic debris left over from a 10-million-year-old volcano. These features were formed during the past 10 million years as a result of massive tectonic forces on the Hayward and Moraga faults that uplifted the Berkeley hills, folding bedrock formations and tilting the Round Top volcano complex on its side. Softer sedimentary rock from the Orinda Formation eroded away, exposing the Round Top volcano. In addition, quarrying in the north half of the Sibley Volcanic Regional Preserve has revealed cross sections of the bedrock geology, providing an unsurpassed outdoor laboratory for studying volcanism in the Central Coast Ranges. A 1.5-mile self-guided tour of the Round Top volcanoes is part of the existing Sibley Volcanic Regional Preserve. This collection of diverse geologic features in a small topographic area constitutes a unique geologic feature, in part due to their presence being one of the reasons for the original creation of the (then) Round Top Regional Preserve, destruction of which would constitute a significant impact under CEQA. This unique geologic feature has been designated a Geologic Special Protection Feature (SPF) by the District; SPFs are areas that received specialized management by the District, including seasonal or permanent closure to the public when public access may endanger them.

Monterey Formation

In the Project area the Monterey Formation includes the Monterey Shale (Tm), also referred to as the Claremont Shale, and the Sobrante Sandstone (Tso). The Monterey Shale is a thin bedded siliceous shale that occurs along the southwestern margin of the Project area (Dibblee and Minch, 2005). The Sobrante Sandstone is a light gray, massive to thick bedded medium-grained arkosic sandstone that occurs to the southeast of the Monterey Shale (Dibblee and Minch, 2005). The Monterey Formation records the filling of a deep basin formed by tectonism along the California margin (Pisciotto and Garrison, 1981) and constitutes one of the major elements of California geology. The Monterey can range up to several thousands of feet thick (Bramlette, 1946) and ranges in age from 3 to 15 Ma (Obradovich and Naeser, 1981). The Monterey Shale has yielded a diverse fauna consisting of mollusks and common fish skeletons (Bramlette, 1946; Dibblee, 1973), the remains of larger marine macrofauna such as whales (Pyenson and Haasl, 2007) and the giant extinct Desmostylus (Hannibal, 1922), as well as birds (Warheit, 1992), crocodiles (Barboza et al., 2017) and rare land organisms such as horse and land plants (Bramlette, 1946). The UCMP has records of 26 fossil specimens collected from the Monterey Formation in Contra Costa County, including invertebrates such as echinoids, mollusks, and sponges, and one marine mammal (UCMP, 2018). The Monterey Formation has high paleontological sensitivity.

3.5.5 Significance Thresholds

CEQA Significance Criteria

According to Appendix G of the CEQA Guidelines, a project would result in significant cultural resources effects on the environment if it would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5;

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature;

d) Disturb any human remains, including those interred outside of formal cemeteries; or

e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC § 21074.

The following section describes potentially significant impacts to cultural resources and paleontological resources that could result from implementation of the Project.

Approach for Cultural Resources Analysis

Historical Resources

Impacts to historical resources are assessed by identifying any activities such as new construction, demolition, or substantial alteration that would affect resources that have been identified as historical. Individual properties and districts identified as historical resources under CEQA include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (California Register Criteria 1, 2, 3, and 4) and that retain sufficient historic integrity to convey their significance. Criterion 4 is typically applied to the evaluation of archaeological resources and not to architectural resources. Note, historical resources may include architectural resources, archaeological resources, and tribal cultural resources.

Once a resource has been identified as significant, it must be determined whether the impacts of the project would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines § 15064.5[b]). A substantial adverse change in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired" (CEQA Guidelines § 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines § 15064.5[b][2]). Therefore, material impairment of historical resources constitutes a significant impact.

To avoid redundancy, the impact analysis below discusses impacts to historical resources, under question a, as those impacts to only historic-era architectural resources, including buildings, structures, and objects.

Archaeological Resources

The significance of most prehistoric and historic-period archaeological sites is typically assessed under California Register Criterion 4. This criterion stresses the importance of the information potential contained within a site, rather than its significance as a surviving example of a type or its association with an important person or event. Archaeological resources may qualify as historical resources under the definition provided in CEQA Guidelines Section 15064.5(a), or

they may be assessed under CEQA as unique archaeological resources, defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions (PRC § 21083.2). A substantial adverse change in the significance of an archaeological resource is assessed similarly to other historical resources; that is, if the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings occurs such that the significance of [the] historical resource would be materially impaired (CEQA Guidelines § 15064.5[b][1]). As previously stated, a historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (CEQA Guidelines § 15064.5[b][2]). Therefore, material impairment of archaeological resources considered historical resources or unique archaeological resources constitutes a significant impact.

To avoid redundancy, the following impact analysis discusses archaeological resources, both as historical resources, according to CEQA Guidelines § 15064.5, as well as unique archaeological resources, as defined in PRC § 21083.2(g), under question b.

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC § 5097.98 and HSC § 7050.5. These laws are identified above in State Regulations. For the purposes of this analysis, intentional disturbance, mutilation, or removal of interred human remains constitutes a significant impact.

Tribal Cultural Resources

Effective for projects for which a notice of preparation or notice of negative declaration/mitigated negative declaration was filed on or after July 1, 2015, CEQA requires that a project's impacts on tribal cultural resources be considered as part of the overall analysis of project impacts (PRC § 21080.3.1, 21084.2, 21084.3). The significance of a tribal cultural resource is assessed by evaluating: 1) its eligibility for listing on the California Register; 2) its eligibility as a unique archaeological resource pursuant to PRC § 21083.2; and, 3) its listing status on the NAHC's SLF. Additionally, a lead agency can independently determine a resource to be a tribal cultural resource. Because California Native American tribes are considered experts with respect to tribal cultural resources, the analysis of whether project impacts may result in a substantial adverse change to the significance of a tribal cultural resource is heavily dependent on consultation efforts conducted between the lead agency and relevant California Native American tribes during the CEQA process.

Approach for Paleontological Resources and Unique Geologic Feature Analysis

As discussed in Section 3.4.4, above, geologic units with high paleontological sensitivity occur throughout the Project area, and the Moraga Basalt constitutes a unique geologic feature. This analysis considers impacts to potential nonrenewable paleontological resources and unique geologic features during Project construction and operation, including damage or destruction. Based on the significance definitions of the SVP, all identifiable vertebrate fossils are considered

to have significant scientific value. This position is adhered to because vertebrate fossils are relatively uncommon, and only rarely will a fossil locality yield a statistically significant number of specimens of the same genus. Therefore, every vertebrate fossil found has the potential to provide significant new information on the taxon it represents, its paleoenvironment, and its distribution. Any fossil discovery is therefore treated as potentially unique or significant until determined otherwise by a professional paleontologist. Furthermore, all geologic units in which vertebrate fossils have previously been found are considered to have high sensitivity. A geologic unit known to contain significant fossils is considered to be "sensitive" and vulnerable to adverse impacts if there is a high probability that ground-disturbing activities in that unit would either disturb or destroy fossil remains directly or indirectly. An impact would be considered significant if the information potential contained within a site is lost due to destruction or disturbance of fossil remains without proper protection and documentation.

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impacts related to the following topic for the reasons described below.

a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5?

As stated above, to avoid redundancy, the impact analysis for this question addresses impacts to historical resources, under question a, as those impacts to only historic-era architectural resources, including buildings, structures, and objects.

Preserve Sub-area

Archival research identified four architectural resources in the Preserve sub-area, two of which (P-01-011420/P-07-004486 and P-07-004492) were also identified in the cultural resources field survey conducted for the Project. These four resources consist of: an historic-era district (P-01-011420/P-07-004486 [Sibley Volcanic Regional Preserve Historic District]); a rock wall recorded only from an historic newspaper photograph, not from identified presence on the ground (P-07-002587); a 1940s residential building (P-07-004492); and two single-family residences dating to the 1960s or 1970s (111 Old Tunnel Road). Of these four architectural resources, one (P-01-011420/P-07-004486) has been evaluated as eligible for the California Register, two (P-07-004492 and 111 Old Tunnel Road) have been evaluated as not eligible for the California Register, and the remaining one (P-07-002587) has not been evaluated for California Register-eligibility and likely no longer exists.

Only two (P-01-011420/P-07-004486 and P-07-004492) of the four architectural resources identified in the Preserve sub-area are in the ADI. Due to the nature of the Project and its minimal potential for indirect impacts, those resources outside the ADI would not be impacted by the Project. Of the two architectural resources in the ADI in the Preserve sub-area, only one (P-01-011420/P-07-004486) qualifies as an historical resource, as defined in CEQA Guidelines § 15064.5.

P-01-011420/P-07-004486 is the Sibley Volcanic Regional Preserve Historic District, which consists of the original 227-acre Round Top Regional Preserve with the following contributing elements: hiking and equestrian trails, and Round Top peak. The resource was evaluated by Hoffman et al. (2018) (based on Venno's [2012b] evaluation) as both National Register- and California Register-eligible under Criterion A and 1, respectively, for its association with events that have made significant contributions to the history of Oakland and the East Bay Hills (including as an important recreation destination for the City of Oakland and its pivotal role in the early development of the EBRPD), with a period of significance of 1936 to 1950, as well as its importance to the scientific community as the only known volcano in the area. The following Project actions would occur within the resource's boundary: improvements to the existing Sibley Main Staging Area; trail system expansion; and improvements to existing roadways. However, the only Project activities that would potentially impact contributing elements of the district include improvements and expansions to the existing trail system. Specifically, this would consist of minor changes in use of existing trails (adding bike and dog use), construction of the approximately 0.27-mile new Blue-eyed Trail, and closure of 0.32 miles of the existing Skyline Trail. The Project proposed no other physical modifications to existing trails in P-01-011420/P-07-004486. These proposed changes to the trail system included as contributors to P-01-011420/P-07-004486 would constitute a proportionally minor change and would not significantly impact the trail system as a contributor to P-01-011420/P-07-004486. The Project actions are minor and intended to enhance the visitor's recreational experience and the historic district is intended to document the establishment of Sibley Volcanic Regional Preserve as a parkland; these improvements would be consistent with this significance of the historic district. The proposed changes would not impact ability of the Sibley Volcanic Regional Preserve Historic District to reflect its significant associations with the development of recreational activities in the region. Therefore, any potential impacts to P-01-011420/P-07-004486 resulting from implementation of the Project would not result in a substantial adverse change in the significance of the resource.

In summary, though the Project could impact an historical resource, as defined in CEQA Guidelines § 15064.5, in the Preserve sub-area, any impacts would not result in a substantial adverse change in the significance of an historical resource.

McCosker Sub-area

One architectural resource (MS-7) has been identified in the McCosker sub-area. The resource consists of a small vernacular cinder block building, originally used as a pump house, on the west side of Alder Creek. The resource has been evaluated as not eligible for the California Register and, therefore, does not qualify as an historical resource, as defined in CEQA Guidelines § 15064.5. Therefore, no historical resources, as defined in CEQA Guidelines § 15064.5, have been identified in the McCosker sub-area, and the Project is not anticipated to result in any impacts to historical resources, as defined in CEQA Guidelines § 15064.5, in the McCosker sub-area.

Western Hills Sub-area and Huckleberry Botanic Regional Preserve

No architectural resources have been identified in the Western Hills sub-area or Huckleberry Botanic Regional Preserve portions of the Project area. Therefore, the Project is not anticipated to

result in any impacts to historical resources, as defined in CEQA Guidelines § 15064.5, in these portions of the Project area.

3.5.6 Impact Analysis

Impact CUL-1: Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5?

As noted above, to avoid redundancy, the impact analysis for this question addresses impacts to archaeological resources, both as historical resources, according to CEQA Guidelines § 15064.5, as well as unique archaeological resources, as defined in PRC § 21083.2(g).

Preserve Sub-area

Archival research identified two archaeological resources in the Preserve sub-area, neither of which was identified during the cultural resources field survey conducted for the Project. These two resources consist of a petroglyph of unknown age and origin (P-07-002586), and an isolate chert flake of possible natural origin (P-07-002639). Neither resource has been evaluated for California Register-eligibility. Based on its site record, P-07-002586 is of an unknown age and may be historic-era or even modern. The limited description provided in the site record for P-07-002639 suggests that it may not be cultural (rather natural) in origin. Neither resource is in the ADI.

Due to the nature of the Project and its minimal potential for indirect impacts, any archaeological resources outside the ADI would not be impacted by the Project. Therefore, the Project is not anticipated to result in any impacts to archaeological resources, pursuant to CEQA Guidelines § 15064.5, in the Preserve sub-area.

However, because the Project would involve ground-disturbing activities that may extend into undisturbed soil, it is possible that such actions could unearth, expose, or disturb subsurface archaeological resources that were not identified on the surface. If previously unrecorded archaeological deposits are present in the Project area, and if they are found to qualify as archaeological resources, pursuant to CEQA Guidelines § 15064, impacts to the resources resulting from the Project would be potentially significant. Such potentially significant impacts would be reduced to a less than significant level by implementing Mitigation Measure CUL-1, which would require that, in the event of an inadvertent discovery of archaeological resources, a qualified archeologist assess any previously unrecorded archaeological resources and, if determined to potentially be an archaeological resources, pursuant to CEQA Guidelines § 15064, avoid the resource if feasible, or, if avoidance is not feasible, consult with Native American tribes (if the resource is Native American-related) and determine treatment measures, which may include conducting data recovery of the resource. The potential impact to previously unrecorded archaeological resources, and the associated Mitigation Measure CUL-1, applies to all components of the Project.

McCosker Sub-area

Six archaeological resources (MS-1, -2, -3, -4, -5, -6) have been identified, all during the cultural resources field survey for the Project, in the McCosker sub-area. The resources consist of: a

concrete foundation, possibly remnants of a truck scale (MS-1); a concrete retaining wall (MS-2); concrete features associated with a rock-crushing operation (MS-3); concrete pads and cinder block walls, possibly remnants of a horse paddock (MS-4); Alder Creek culverting features (MS-5); and a fenced orchard (MS-6). All of these except for MS-2 are in the ADI; MS-2 is adjacent to the ADI. All of these archaeological resources have been evaluated as not eligible for the California Register and, therefore, do not qualify as an historical resource, as defined in CEQA Guidelines § 15064.5, nor do any of these six archaeological resources qualify as a unique archaeological resource, as defined in PRC § 21083.2(g).

In summary, the Project is not anticipated to result in any impacts to archaeological resources, pursuant to CEQA Guidelines § 15064.5, in the McCosker sub-area. However, as stated above, because the Project includes ground-disturbing activities, if any previously unidentified (subsurface) archaeological resources were encountered during Project implementation, Project-related impacts to such resources would be potentially significant. Implementing Mitigation Measure CUL-1 would reduce any such potential impacts to a less than significant level.

Western Hills Sub-area and Huckleberry Botanic Regional Preserve

No archaeological resources have been identified in the Western Hills sub-area or Huckleberry Botanic Regional Preserve portions of the Project area. Therefore, the Project is not anticipated to result in any impacts to archaeological resources, pursuant to CEQA Guidelines § 15064.5, in these portions of the Project area.

However, as stated above, because the Project includes ground-disturbing activities, if any previously unidentified (subsurface) archaeological resources were encountered during Project implementation, Project-related impacts to such resources would be potentially significant. Implementation of Mitigation Measure CUL-1 would reduce any such potential impacts to a less than significant level.

> **Mitigation Measure CUL-1 – Project-wide: Unanticipated Discovery Protocol for Archaeological Resources**
>
> If prehistoric or historic-era archaeological resources are encountered during Project implementation, the District and/or its contractors shall immediately cease all construction activity within 50 feet of the find and flag off the area for avoidance (in accordance with EBRPD Board Resolution No. 1989-4-124 and State law). The District and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the find within 24 hours of discovery and notify the District of their initial assessment. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.
>
> If the District determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource

(as defined in CEQA Guidelines § 15064.5), or a tribal cultural resource (as defined in PRC § 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the Project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. If avoidance is not feasible, the District shall consult with appropriate Native American tribes (if the resource is Native American-related), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC § 21083.2, and CEQA Guidelines § 15126.4. This shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.

Additionally, any such archaeological resources are to be documented in the District's GIS database (Cultural Site Atlas) and, as practical, the information shall be provided to the CHRIS for a Primary number and/or trinomial.

Significance after Mitigation: *Less than significant*.

Impact CUL-2: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The Project area contains geologic units with high paleontological sensitivity (Alluvium [Qa] deeper than two meters, and all depths of areas mapped as the Orinda Formation (Tor) and the Monterey Formation [Monterey Shale (Ts) and Sobrante Sandstone [Tso])] and volcanic formations within the Moraga Basalt are a unique geologic feature.

Streambed work associated with the Creek Restoration activities in the McCosker sub-area would not impact volcanic formations, which in general are not present in stream channels in Project area; therefore, these activities would not impact the unique geologic features in the Project area. Project activities in the Western Hills and Preserve sub-areas would occur in areas mapped as Moraga Basalt, portions of which constitute a unique geologic feature. However, the Project activities in Moraga Basalt consist of change in use of existing trails (e.g., allow bikes, etc.) and would not impact the unique geologic feature. Also, the unique geologic feature has been designated a Geologic SPF by the District, and would receive specialized management by the District, including seasonal or permanent closure to the public when public access may endanger them. Therefore, the Project is not anticipated to result in any impacts to this, or any other, unique geologic feature.

The Project would involve ground-disturbing activities that may extend into previously undisturbed sediment considered to have high paleontological sensitivity (Alluvium [Qa] deeper than two meters, and all depths of areas mapped as the Orinda Formation [Tor] and the Monterey

Formation [Monterey Shale (Ts) and Sobrante Sandstone [Tso]). Such ground-disturbing activities have the potential to impact previously unidentified paleontological resources. If any paleontological resources were encountered during Project-related construction and such resources were determined to be a unique paleontological resource or site, pursuant to CEQA, impacts to the resource could potentially be significant. Implementation of Mitigation Measures CUL-2a, CUL-2b, and CUL-2c would reduce any such potential impacts to a less than significant level.

Mitigation Measure CUL-2a: Project-wide - Paleontological Monitoring and Mitigation Plan

The Project proponent shall retain a qualified paleontologist, defined as one meeting the standards of the SVP (2010), to develop and implement a Paleontological Monitoring and Mitigation Plan (PMMP) for the Project. The PMMP shall include a Worker Environmental Awareness Program (WEAP) to be conducted by the qualified paleontologist for all construction crew members involved in Project-related ground-disturbing activities. The PMMP shall also include paleontological monitoring and provisions for the event of fossil discovery.

Mitigation Measure CUL-2b: Project-wide - Paleontological Monitoring

Full-time paleontological resources monitoring shall be conducted for all ground-disturbing activities occurring in previously undisturbed sediments of geologic units with high paleontological sensitivity. Within the Project area the deeper layers (greater than 2 meters deep) of Alluvium (Qa) and all depths of areas mapped as the Orinda Formation (Tor) and the Monterey Formation (Monterey Shale [Ts] and Sobrante Sandstone [Tso]) have high paleontological sensitivity. Paleontological resources monitoring shall be performed by a qualified paleontological monitor, defined as one meeting the standards of the SVP (2010) under direction of a qualified paleontologist, defined as one meeting the standards of the SVP (2010). Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. Any significant fossils collected during Project-related excavations shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The qualified paleontologist shall spot check the excavation on an intermittent basis and recommend whether the frequency or depth of monitoring should be revised based on his/her observations. The qualified paleontologist shall prepare a final monitoring and mitigation report to document the results of the monitoring effort.

Mitigation Measure CUL-2c: Project-wide - Unanticipated Discovery Protocol for Fossils

If paleontological resources are discovered during activities associated with implementation of the Project, all work within 50 feet of the discovery shall be redirected until the qualified paleontologist, defined as one meeting the standards of the SVP (2010), can assess the significance of the find. The qualified paleontologist shall make recommendations regarding the treatment of the discovery. Project personnel shall not collect or move any paleontological resources. If the paleontological resources are determined to constitute a unique paleontological resource, pursuant to CEQA, the qualified paleontologist shall provide recommendations for the collection and curation of the paleontological resources with an accredited institution, such as the University of

California Museum of Paleontology. The qualified paleontologist shall prepare a report documenting evaluation and/or additional treatment of the resource. The report along with related notes, maps, and photographs, shall be filed with the District, Contra Costa County, and the repository. Completion of this measure shall be monitored and enforced by the District.

Significance after Mitigation: *Less than significant.*

Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries?

No human remains have been identified in the Project area through archival research, field surveys, and Native American consultation. Also, the land use designations for the Project area do not include cemetery uses, and no known human remains exist within the Project area. Therefore, the Project is not anticipated to disturb any human remains.

However, since the nature of the Project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. In the event that human remains were discovered during Project construction activities, impacts to the human remains resulting from the Project would be significant if those remains were disturbed or damaged. Such impacts would be reduced to a less than significant level by implementing Mitigation Measure CUL-3, which would require construction workers in the area to cease work and follow appropriate State law if human remains are discovered.

Mitigation Measure CUL-3: Project-wide - Unanticipated Discovery Protocol for Human Remains

If human remains are uncovered during Project construction, the District and/or its contractors shall immediately halt all work, contact the Contra Costa county coroner to evaluate the remains, and follow the procedures and protocols set forth in CEQA Guidelines § 15064.5(e)(1). If the county coroner determines that the remains are Native American, the District and/or its contractors shall contact the NAHC, in accordance with HSC § 7050.5(c), and PRC § 5097.98. Per PRC § 5097.98, the District shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the District and/or its contractor has discussed and conferred, as prescribed in this section (PRC § 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Significance after Mitigation: *Less than significant.*

Impact CUL-4: Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC § 21074?

No tribal cultural resources, as defined in PRC § 21074, have been identified in the Project area through archival research, field surveys, and Native American consultation. Therefore, the Project is not anticipated to impact any tribal cultural resources.

However, as discussed above, previously unrecorded or unknown archaeological resources and/or human remains may be present in the Project area. If such resources were identified during Project construction and found to be a tribal cultural resource, any impacts to the resource resulting from the Project would be potentially significant. Impacts would be reduced to a less than significant level with implementation of Mitigation Measures CUL-1 and CUL-3 (see discussions for Impacts CUL-1 and CUL-3, above).

Significance after Mitigation: *Less than significant.*

3.5.7 References

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3.6 Geology and Soils

This section provides an overview of the geology and soils resources in the Project area. This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potentially significant impacts associated with the geologic and soil conditions on the site. This section is based on a review of the *Alquist-Priolo Special Studies Zone Act of 1972***,** and the *State of California Building Code*, and technical reports resulting from literature review, site reconnaissance, and lab testing from geotechnical investigations. The analysis of geology and soils includes a description of the regulatory framework that guides the decision-making process, existing conditions in the Project area, and thresholds for determining if the Project would result in significant impacts, anticipated impacts, mitigation measures, and the level of significance after mitigation. Refer to *Section 3.5, Cultural Resources and Tribal Cultural Resources* for a description of paleontological sensitivity for each of the geologic units.

3.6.1 Regulatory Framework

This regulatory framework identifies the federal, state, and local statutes and policies relating to geology and soils that must be considered by the District during the decision-making process for projects that involve grading (excavation or fill), the modification of existing structures, or construction of new structures.

Federal

There are no specific federal regulations addressing geology and soils issues that are not addressed by the more stringent state or local requirements.

State

The California Environmental Quality Act (CEQA); the *Alquist-Priolo Special Studies Zone Act of 1972*; and the *State of California Building Code*; are the primary State planning, treatment, and review mechanisms for geology and soils resources in the project area. Each is summarized below.

Alquist-Priolo Special Studies Zone Act of 1972

The California Geological Survey (CGS) has delineated special study zones along known active faults in California pursuant to the Alquist-Priolo Earthquake Fault (formerly Special Studies) Zones (APEFZ) Act of 1972. The State designates the authority to local governments to regulate development within APEFZ. Construction of habitable structures is not permitted over potential rupture zones.

The CGS has also identified Seismic Hazard Zones that are delineated in accordance with the Seismic Hazard Mapping Program (SHMP) of the Seismic Hazards Act of 1990. The Act is "to provide for a statewide seismic hazard mapping and technical advisory program to assist local governments in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, or other ground failure and other seismic hazards caused by earthquakes."

The State of California Geological Survey (formerly the California Division of Mines and Geology) identifies several earth resource issues that should be taken into consideration in evaluating whether proposed projects are likely to be subject to geologic hazards, particularly related to earthquake damage. These considerations include, both the potential for existing conditions to pose a risk to the Project, and the potential for the Project to result in an impact on the existing conditions for geology or soils. The State CGS establishes regulations related to geologic hazards (e.g., faulting, liquefaction, subsidence, ground shaking) as they affect persons and structures.

Projects located within special studies (active faults) or designated hazards (liquefaction or seismically induced landslide) zones as delineated by the APEFZ and SHMP are subject to regulatory control. The State designates this control to local governments to regulate development within special studies and hazards zones.

The CGS also issues guidelines for the evaluation of geologic and seismic factors that may impact a project, or that a project may affect. The applicable guidelines are as follows:

- *CDMG Note 42, Guidelines to Geologic/Seismic Reports*
- *CDMG Note 46, Guidelines for Geologic/Seismic Considerations in Environmental Impact Reports*
- *CDMG Note 49, Guidelines for Evaluating the Hazard of Surface Fault Rupture*.

Each guideline provides checklists and outlines to help ensure a comprehensive report of geologic/ seismic conditions. Although not mandatory in all their detail, these guidelines provide assistance in assuring completeness of geologic/seismic studies conducted for a project.

The State of California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 International Building Code (IBC) published by the International Code Council. The code is updated triennially, and the 2016 edition of the CBC was published by the California Building Standards Commission in July 2016, and took effect starting January 1, 2017. The 2016 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general

structural design and includes means for determining earthquake loads[1] as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that substantial structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements consider the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Local Resource Protection Ordinances and Policies

County and City General Plans and ordinances, the District Master Plan; portions of District Ordinance 38; and the District's standard technical specifications and Best Management Practices are the primary local planning, treatment, and review mechanisms for geology and soil resources in the project area. Each is summarized in *Table 3.6-1 – City and County General Plan Geology and Soil Resources Policies* below.

[1] A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

TABLE 3.6-1
CITY AND COUNTY GENERAL PLAN GEOLOGY AND SOIL RESOURCES POLICIES

Contra Costa County Goals and Policies (2005-2020)	Project Consistency
10-5. Staff review of applications for development permits and other entitlements, and review of applications to other agencies which are referred to the County, shall include appropriate recommendations for seismic strengthening and detailing to meet the latest adopted seismic design criteria.	The Project would be designed in accordance with building code requirements and seismic design criteria.
10-20. Any structures permitted in areas of high liquefaction danger shall be sited, designed and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.	Proposed design measures would identify and ameliorate any identified liquefaction hazards present.
10-21. Approvals to allow the construction of public and private development projects in areas of high liquefaction potential shall be contingent on geologic and engineering studies which define and delineate potentially hazardous geologic and/or soils conditions, recommend means of mitigating these adverse conditions; and on proper implementation of the mitigation measures.	Preliminary geotechnical investigation has been completed and a final design level geotechnical report would be required prior to project approval.
10-23. Slope stability shall be given careful scrutiny in the design of developments and structures, and in the adoption of conditions of approval and required mitigation measures.	Preliminary geotechnical investigation has been completed and a final design level geotechnical report would be required prior to project approval.
10-26. Approvals of public and private development projects in areas subject to slope failures shall be contingent on geologic and engineering studies which define and delineate potentially hazardous conditions and recommend adequate mitigation.	Preliminary geotechnical investigation has been completed and a final design level geotechnical report would be required prior to project approval.
10-27. Soil and geological reports shall be subject to the review and approval of the County Planning Geologist.	Preliminary geotechnical investigation has been completed and a final design level geotechnical report as approved by the County Planning Geologist would be required prior to project approval.
City of Orinda Goals and Policies	**Project Consistency**
The Safety Element within the Environmental Resources chapter of the City of Orinda General Plan includes policies regarding hazards and hazardous materials that are pertinent to the proposed Project area (see Guiding Policies 4.2.1 A-F and Implementing Policies 4.2.2 A-Q). The policies state the City's intent to provide information for the protection of the community from unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, and dam failure; slope instability leading to landslides, subsidence and other geologic hazards; flooding; hazardous material accidents; and wildland and urban fires.	Consistent with the City of Orinda's General Plan, the Project would adhere to current federal, state, and local requirements that incorporate industry standard measures to minimize surface rupture, ground shaking, ground failure, and dam failure; slope instability leading to landslides, subsidence and other geologic hazards; flooding; hazardous material accidents; and wildland and urban fires.
City of Oakland Goals and Policies	**Project Consistency**
Policies from the City of Oakland General Plan's Conservation Element regarding hazards and hazardous materials are also described below: Policy CO-53: Control of urban runoff. Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program, to: … (b) reduce water pollution associated with hazardous spills, runoff from hazardous material areas, improper disposal of household hazardous wastes, illicit dumping, and marina "live-aboards".	Consistent with the City of Orinda's General Plan, Project implementation would include preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board and the District Technical Specifications and Supplemental Conditions.

East Bay Regional Park District

2013 District Master Plan

The 2013 District Master Plan defines the long-term vision for lands managed by the District. The Master Plan provides a decision-making framework, and identifies policies that will achieve District-wide objectives. The District Master Plan contains policies directed at public safety and the protection of geologic and soil resources, as described in *Table 3.6-2, 2013 District Master Plan Geology and Soils Goals and Policies.*

TABLE 3.6-2
2013 DISTRICT MASTER PLAN GEOLOGY AND SOILS GOALS AND POLICIES

Goals and Policies	Project Consistency
NRM13: The District will identify existing and potential erosion problems and take corrective measures to repair damage and mitigate its causes. The District will manage the parks to assure that an adequate cover of vegetation remains on the ground to provide soil protection. Where native cover has been reduced, or eliminated, the District will take steps to restore it using native or naturalized plants adapted to the site. The District will minimize soil disturbance associated with construction and maintenance operations, and will avoid disruptive activities in areas with unstable soils wherever possible. The District will arrest the progress of active gully erosion where practical, and act to restore these areas to stable conditions. The District will notify adjacent property owners of potential landslide situations and risks on District lands, and will conform with applicable law. The District will protect important geological and paleontological features from vandalism and misuse.	The Project design features incorporate erosion control measures and strategies supporting *Objective 2 Creek Restoration* that would include restoring the vegetation using native or naturalized plants adapted to the site. Project implementation would conform with applicable laws through implementation of the District's Technical Specifications and Supplemental Conditions, including development of a SWPPP that would include an Erosion Control Plan as described in this section of the EIR.

Ordinance 38

Portions of EBRPD Ordinance 38 address the protection of geological resources. This section is briefly summarized *Table 3.6-3, Relevant Ordinance 38 Sections* below.

TABLE 3.6-3
RELEVANT ORDINANCE 38 SECTIONS

Section 805. This section states that, "no person shall damage, injure, collect or remove earth, rocks, sand, gravel, fossils, minerals, features of caves, or any article or artifact of geological interest or value located on District parklands."

East Bay Regional Park District Standard Technical Specifications and Supplementary Conditions

The District's Standard Technical Specifications and Supplementary Conditions contain provisions that are intended to ensure, among other things, the safety of the construction workers, staff and the public, and the protection of wildlife, site resources, and water quality during construction and operation of site amenities. Relevant sections are provided in *Table 3.6-4, Relevant Technical Specifications* below.

TABLE 3.6-4
RELEVANT TECHNICAL SPECIFICATIONS

Site Set-up - Execution
• Work on site shall only take place between June 15 and October 31. • Confine work activities to approved construction work areas, staging areas and access routes. • Excavations shall not be left open overnight. Where not backfilled, excavations shall be tightly covered. Perimeters of plywood panels or other covers shall be edged with dirt to prevent intrusion of small animals. • Excavations shall include a ramp with a maximum slope of 1:1 to allow animals to escape the excavation when not covered. • Storage of equipment and vehicles shall be a minimum of 100 feet from the top of the creek bank. • Fueling of equipment and vehicles shall take place a minimum of 200 feet from the top of the creek bank.
Erosion Control SWPPP Requirements
In addition to the requirements of the CASQA or Caltrans standard, the SWPPP shall contain an Erosion Control Plan that includes the following provisions: • Fiber rolls and erosion control blankets shall not contain netting that could trap small animals. • Photodegradable products are not acceptable. • All erosion control products shall be weed and seed free. • All temporary erosion control measures shall be immediately removed when no longer needed. • All temporary erosion control measures shall be removed and legally disposed of prior to project completion.
Clearing and Grubbing
• All cut and fill areas: Strip topsoil to 2-inches minimum below existing grade where vegetation occurs. Additional depth may be required to remove organic materials. • Stripped material shall be disposed of off-site and in a legal manner or stockpiled for reuse as directed by the District. • Upon completion of clearing and grubbing, areas shall be left in a neat, clean condition ready to receive subsequent work.
Excavated Material
• All excavated material shall be piled in a manner which will not endanger the work and which will avoid completely obstructing access. Culverts, swales, and natural drainage patterns shall be kept clear. • The excavations and support system shall comply in all respects with the requirements of Article 6, of the Construction Safety Orders of the Division of Industrial Safety. • At no time shall trenches be left open during the Contractor's non-working hours. Trenches shall be backfilled to grade and/or covered with plywood or traffic-rated metal plates and pipe ends securely closed with a tight-fitting plug or cover at the end of each work day. • All open excavations 5 feet or greater in depth shall be constructed with bracing, sheeting, shoring, or other equivalent method designed for the protection of life and limb in accordance to Section 6705 of the State Labor Code. • The trench excavations and support system shall comply in all respects with the requirements of Article 6, of the Construction Safety Orders of the Division of Industrial Safety.
Fill Material
• Material shall be generated from below the stripped layer. • Provide certification that the material complies with the geotechnical requirements noted above. • Material shall be inspected by the District Inspector. • Soils obtained from on-site excavations, except for materials derived from the stripping operations, are suitable for reuse as fill material, provided that it meets the fill gradation criteria. • Relative compaction shall be determined by ASTM Test Method D1557. Field density test shall be performed with ASTM Test Designation D2922 and D3017 (Nuclear Probe Method). • Proper moisture content of fill shall be maintained by adding water or dried by appropriate methods as required. • Scarify top 6 inches of all areas to receive fill and re-compact to specified relative compaction. • Contractor shall place fill in lifts not greater than 8-inches in uncompacted thickness, brought to proper moisture content, and compacted to the specified relative compaction.

Protection of Existing Trees and Shrubs
• When it is necessary to excavate adjacent to existing trees and shrubs, Contractor shall use all possible care to avoid injury to these plants and their roots. No roots three (3) inches or larger in diameter shall be cut without the prior approval of the District. • In no case shall any limbs be cut or trees and shrubs removed without first obtaining approval from the District.
Supplementary Conditions
• The California State Water Resources Control Board, San Francisco Bay Region, Oakland, California has jurisdiction over the project stormwater discharges within the Project area. Accordingly, the following actions will be required prior to initiating implementation of the Project: 1) the District will submit a Notice of Intent (NOI) and obtain a waste discharger identification number (WDID) from the above agency; 2) a Receipt of NOI will be obtained by the District from SWRCB prior to the start of construction; and 3) the Contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board No. 92-08 DWQ for discharges of stormwater runoff associated with construction activity.

3.6.2 Existing Conditions

Geological Setting

Regional Physiography

The Project is located within California's Coast Ranges Geomorphic Province, a geologically young and seismically active region dominated by northwest-southeast trending ranges of low mountains and intervening structural basins forming valleys are only a few million years old and are compressed by tectonic forces between the Hayward and Calaveras faults. The Project lies within the East Bay Hills, which near the site consist of a series of roughly parallel ridges and valleys that trend southeast-northwest and include Huckleberry and Gudde Ridges.

Gudde Ridge is a five-mile long easterly spur of Round Top running northwest to southeast through the Robert Sibley Volcanic and Huckleberry Regional Preserves. Gudde Ridge is composed of non-marine sedimentary rocks that were deposited in the Miocene epoch (24 to 5 million years ago). The McCosker Sub-area also includes a prominent 40-acre section of the Gudde Ridge line, the upper end of Indian Valley and approximately 90 acres of Flicker Ridge.

The East Bay Hills consists of an area that stretches from the City of San Jose to San Pablo Bay. Located behind the alluvial plains formed adjacent to, and east of, the San Francisco Bay, they are part of the Northern California Coast Ranges. The geologic material of the East Bay Hills occurs in complex folds, with the axis generally trending northwest.

San Leandro Creek drains south-southwest from its origin in Sibley Volcanic Preserve, which includes a volcanic peak (Round Top) that has a summit elevation of 1,763 feet. The hillslopes northeast of Pinehurst Road are traversed by lesser tributaries that generally drain south and west towards San Leandro Creek. San Leandro Creek drains south-southwest from its origin in Sibley Volcanic Preserve into Upper San Leandro Reservoir. Pinehurst Road, the primary access into the McCosker sub-area, and the community of Canyon lie within the valley of San Leandro Creek, a perennial creek that provides habitat for native rainbow trout.

Project Area Geology

Much of the Project area is situated on moderately steep to steeply sloping terrain with prominent northwest-trending ridges bisected by interior valleys and side canyons. Elevations range from

approximately 600 feet (NGVD 1929) at the toe of the slopes that face into Wilder residential development area to between 1,100 and 1,600 feet on the surrounding peaks. The Preserve Sub-area includes a volcanic peak (Round Top) that has a summit elevation of 1,763 feet. The topography reflects the underlying geology that consists of northwest-trending Miocene and Pliocene formations that are predominately sedimentary with some volcanic debris flows and basalts.

In the McCosker Sub-area, located south and east of Gudde Ridge, where creek restoration and recreation development activities are proposed, there is an existing gravel road (which includes localized areas of asphalt concrete paving) that leads north from the staging area at Pinehurst Road to a "loop" near the northern end of the proposed development area. This primary access road is within the valley floor and is mostly underlain by fill that surrounds and overlies the buried culverts. An existing residence is located on the east-facing hillside upslope of the loop. In the middle of the proposed recreation development area, a secondary access road leads up from the valley floor to two level- to gently-sloping pads. At the northwestern end of the upper pad, which is the larger of the two, is a prefabricated metal equipment shed. Two prominent drainage swales (North Swale and South Swale) are present upslope of the level area upon which the equipment shed is located. The lower portions of the two swales are buried by fill placed in association with site development activities that occurred prior to the District obtaining ownership of the land.

Geologic Units

Bedrock units in the Project area are comprised primarily of three major geologic formations, Siesta, Moraga, and Orinda.

Siesta Formation

The dominant formation occupying the valley floors and side slopes is the Siesta formation, a Pliocene-age (approximately 5 to 2.6 million years ago) unit principally comprised of lacustrine (lake) sediments. This rare, non-marine formation consists of bluish-gray and reddish-brown clay and silt mudstones, and gray sandstone with minor interbedded limestones, tuffs and bentonite (altered ash). The maximum thickness of the Siesta Formation in the Project area is approximately 1,300 feet. The Siesta Formation is known for its propensity for land sliding, low shear strength, and its expansive nature, evidence of which can be seen along several trail segments within the Western Hills and the McCosker Sub-areas. These landslides consist principally of debris and earthflow slides and, to a lesser extent, slump, slump-flow, and translational landslides. Shallower landslides are a fairly regular rainy season occurrence. This formation has a high paleontological sensitivity, having yielded the San Francisco Bay Area's earliest land mammals, including ancient horses, hippos, and beavers (*Ancient Volcanic Features of the Berkeley Hills, Contra Costa County, California Geology*. April 1983).

> *Tst – Siesta Formation (late Miocene):* Non-marine siltstone, claystone, sandstone, and minor limestone.

Moraga Formation

The Pliocene-age Moraga Formation consists of lava flows, volcanic breccia (sharp, embedded volcanic fragments), and interbedded fluvial (stream) and lacustrine (lake) materials, which have been deposited within the Pliocene-age Contra Costa Basin, a fresh water basin without an ocean connection. The maximum thickness of the Moraga Formation is approximately 2,000 feet near it volcanic source on Round Top Mountain. This unit consists of basalt, andesite flows, and minor amounts of rhyolite tuff. This unit has no paleontological value.

> *Tmb - Moraga Formation (late Miocene):* Basalt and andesite flows, minor rhyolite tuff. Ar/Ar ages obtained from rocks of this unit range from 9 to 10 million years ago (Curtis, 1989). Includes, mapped locally: Tms Interflow sedimentary rocks.

Orinda Formation

The older Pliocene-age Orinda Formation is comprised of reddish-brown and gray mudstone, sandstone and conglomerate. The Orinda formation is of fluvial stream deposition. The coarser conglomerate may represent alluvial fan deposits, while the finer grain sediments were probably deposited as flood plain or creek overbank deposits. The maximum reported thickness of the Orinda formation is approximately 2,300 feet. The formation is known for its expansive nature, low shear strength, and propensity for landsliding. Occasional landslides contribute to sedimentation in streams when they push into existing stream courses. This unit consists of a wide range of bedded to boulder conglomerates, conglomeratic sandstone, and coarse-to-medium grained lithic sandstone. Ancient beaches and shorelines are recorded in this geologic unit, which is up to 1,500 meters thick. The Orinda Formation is usually easily distinguished from other conglomerates by its red and green color. The Orinda Formation is locally overlain by younger volcanic rocks; however, no volcanics are mapped by the USGS within the Project area. Many vertebrate fossils have been found in the Orinda Formation, giving this geological unit a high paleontological sensitivity.

> *Tcc - Claremont Chert (late to middle Miocene*): Laminated and bedded chert, minor brown shale, and white sandstone. Chert crops out as distinct, massive to laminated, gray or brown beds as much as 10 cm thick with thin shale partings. Distinctive black, laminated chert crops out locally in the Berkeley Hills. Lawson (1914) named rocks of this unit and coeval rocks elsewhere in and around the map area Claremont Shale, but within the area of Assemblage I, including Claremont Canyon, this unit is made up of much more chert than shale.

> *Tor - Orinda Formation (late Miocene):* Distinctly to indistinctly bedded, non-marine, pebble to boulder conglomerate, conglomeratic sandstone, coarse- to medium-grained lithic sandstone, and green and red siltstone and mudstone. Conglomerate clasts are sub-angular to well rounded, and contain a high percentage of detritus derived from the Franciscan complex.

Faulting and Earthquake Seismicity

Regional Faulting and Earthquake Seismicity

The Project is located within the highly seismically active San Francisco Bay Region, which includes a series of major northwest-trending faults that are active and likely to experience one or more episodes of strong ground shaking during the life of the Project. However, the site is not located within an Alquist-Priolo Earthquake Fault zone designated by the State of California and there are no known faults which pass directly through the Project site; therefore, the potential for surface fault rupture at the site is minimal based on the proximity to known active faults of the region.

Local Faults and Seismic Potential

Several small faults are located in the area, but are not considered active which is defined as having known displacement in the last 11,000 years. As shown on *Figure 3.6-1, Faults in the Project Vicinity,* the closest fault to the site that has been active in the Holocene period (last 11,700 years) is the Hayward Fault which is less than two miles southwest of the site. Other active faults in the region include the Mt. Diablo Fault (about 8.5 miles to the east), the Calaveras fault (about 9.5 miles to the southeast), the Hunting Creek, Berryessa, Green Valley, Concord Fault (about 11.25 miles to the northeast), the Greenville Fault (about 18 miles to the east), and the San Andres fault (about 20 miles to the west) (Jennings and Bryant, 2010). These faults all have the potential to produce ground shaking at the site. Studies by the Unites States Geological Survey's Working Group on California Earthquake Probabilities have estimated a 72 percent probability of at least one magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Region before 2042 (Aagaard et al., 2014 as cited in A3GEO). The inactive Moraga thrust fault runs along the eastern edge of the Project area, while the Pinole Fault is located within the thrust and fold belt of the East Bay Hills. It runs east of, and parallel to, the Hayward Fault. This fault segment is predicted to have a chance of producing a 6.6 maximum probable earthquake.

Soils

Soil is generally defined as the unconsolidated mixture of mineral grains and organic material that mantles the land surface. Soils can develop on unconsolidated sediments and weathered bedrock. The characteristics of soil reflect the five major influences on their development 1) topography, 2) climate, 3) biological activity, 4) parent (source) material, and 5) time; and reflect the characteristics of the underlying materials on which the soil is developed.

Most true soil deposits (formed as weathering products on the older geologic formations) within the prior developed and quarried sites within the Project area have been modified and disturbed by grading and earthmoving associated with previous land uses. However, undisturbed native soils are present within the area on some of the steeper slopes.

The soils in the Project area are part of the Los Osos- Millsholm-Los Gatos Association, which is characterized by moderately steep (30-50%) to very steep (50-75%), well drained clay loams and loams that formed in material weathered from interbedded sedimentary rock on uplands.

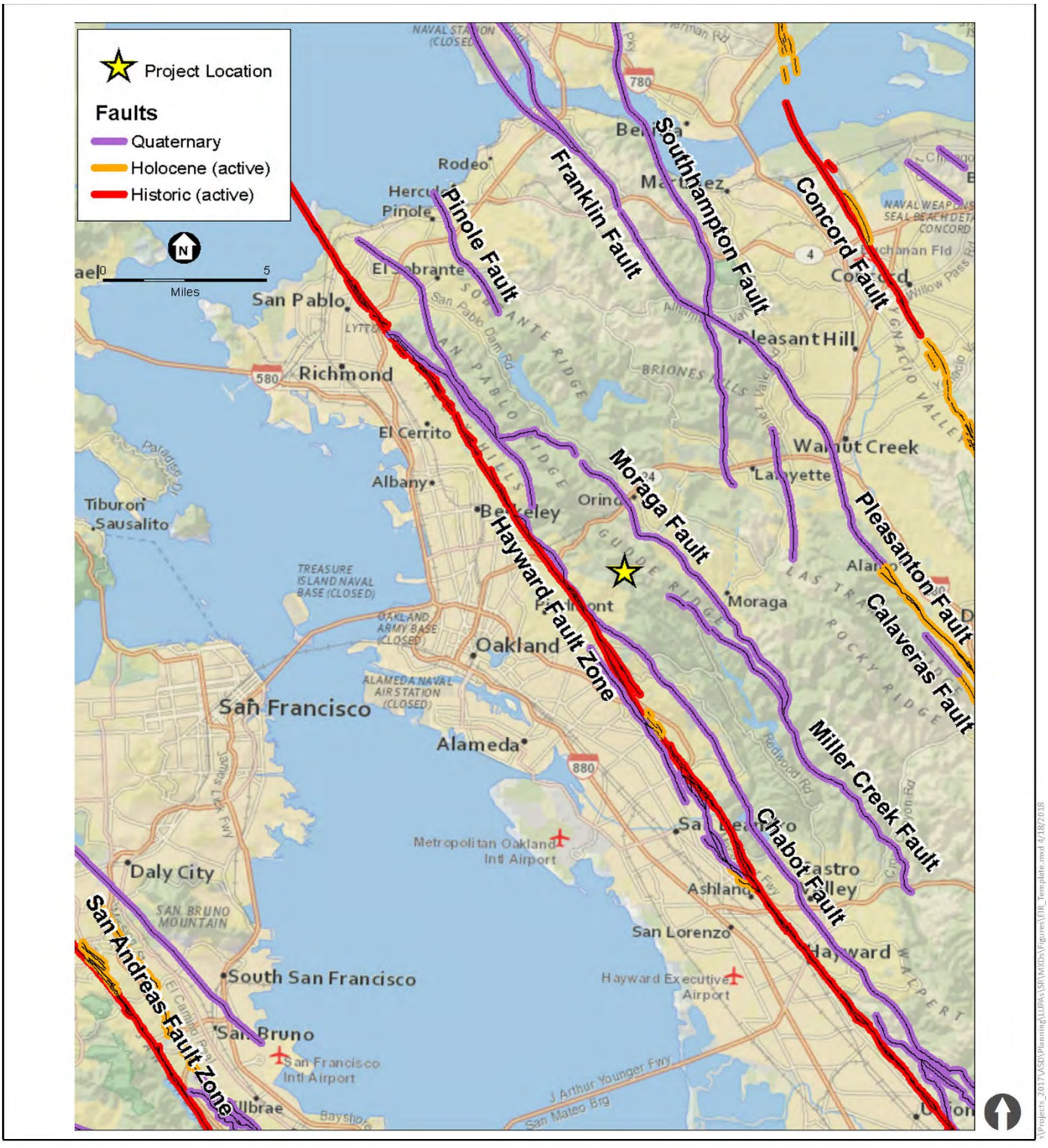

FIGURE 3.6-1: FAULTS IN PROJECT VICINITY

The soils in the Preserve Sub-area consist primarily of Los Osos and Millsholm soils. The Western Hills Sub-area consists primarily of clays and clayey loams including Alo Clay, Clear Lake Clay, Diablo Clay, Dibble Silty Clay Loam, Gilroy Clay Loam, Lodo Clay Loam, Los Gatos Loam, Los Osos Clay Loam, and Millsholm Loam. The McCosker Sub-area's range of soils is primarily limited to Los Osos and Millsholm soils.

The Los Osos soils have a surface layer of gray clay loam and a subsoil of gray and grayish-brown clay. Soft, fined grained sandstone is at a depth of 24-40 inches. Included in this LhF soil series, which dominates much of the Project area, are Alo Clay, Lodo Clay Loam, and Millsholm Loam (USDA, 1997).

Millsholm soils have a surface and subsoil of grayish-brown loam that are underlain by fine-grained sandstone at a depth of 20 to 40 inches. These soils are found on the steeper slopes and the series includes Los Osos Clay Loam, Felton loam and Gaviota sandy loam (USDA, 1997).

The Contra Costa Soil Survey describes these soils as having medium to very rapid runoff rates. Land uses typically include rangelands, wildlife habitat, watershed and home sites in less steep areas and related uses. The dominant vegetation communities include California grasslands with thick stands of oak woodlands and poison oak on many north-facing slopes with thick stands of coyote bush in some of the areas where Millsholm soils dominate. The hazard of erosion is moderate to high, especially in areas of bare soil, due to the steepness of slope (USDA, 1997).

Surface and Sub-surface Conditions

As most of the Project activities involving mass grading operations involving large cuts and fills, modifications of existing infrastructure and construction of new infrastructure and structures would occur within the McCosker sub-area, this section focuses on the surface and sub-surface conditions in this sub-area.

Surface Conditions within the Recreation Development Sites and Creek Restoration Zone of the McCosker Sub-area

Current ground surface conditions within the Recreation Development and Creek Restoration sites of the McCosker Sub-area are summarized below. Plates and boring data are found in *Appendix E, Geotechnical Investigation Report, McCosker Stream Restoration and Recreational Infrastructure Project, Robert Sibley Volcanic Regional Preserve, Contra Costa County, California.*

Lower to Middle Valley Floor

Alder Creek presently flows from north to south within culverts that underlie the valley floor. The surface of the fill that surrounds and overlies the culverts is approximately level in an east-west direction, and slopes gently upwards towards the north. At the mouth of the valley, bedrock consisting of Claremont Chert is exposed east of the existing culvert that passes below Pinehurst Road and within the steep slope west of park entry.

Upper Valley Floor (Loop Area)

Directly south of where the main access road divides, culverts are exposed and the stream flows within an open channel. Here, the east and west tributaries of the McCosker watershed join Alder

Creek. The northwest tributary passes below the road leading to the residence in a culvert. The northeast tributary also flows within a culvert where two sinkholes were observed. The northeast tributary culvert exits into a large hole. For the most part, the soils encountered through boring activities in the valley floor were interpreted as fill with some of the deeper gravels encountered, including mixtures of angular volcanic and sedimentary rock fragments, being consistent with quarrying activities further up the valley.

Upper Access Road Servicing Main Terraced Area and Equipment Shed

The Upper Access Road, which is unsurfaced, exposes weak rock that is gray and reddish in color, typical of the Orinda Formation. The Upper Access Road traverses the location of the former North Swale, where there is a tank/pool that stores water collected from a natural spring. Farther upslope within the North Swale, hummocky terrain, roadway rutting and green vegetation occurs along a higher ranch road that forms part of the McCosker Loop Trail. Localized outcrops of Moraga Formation volcanic rocks were observed along the higher access road to either side of the north swale. Large cracks indicative of creeping terrain were also observed on the hillside northeast of the metal shed.

Sub-surface Conditions within the Recreation Development Sites and Creek Restoration Zone of the McCosker Sub-area

The analysis of the sub-surface conditions was based on: 1) review of the logs and bagged samples from previous Caltrans borings; 2) direct observations of conditions encountered during drilling and the samples retrieved from the A3GEO borings done during the geotechnical evaluation for the Project; 3) the results of geotechnical laboratory tests; 4) general understanding of the local geology; 5) analysis of historical aerial photography; and 6) onsite observations by a certified engineering geologist. As documented in the preceding sections, portions of the Project area have been modified by quarrying and mass grading operations involving large cuts and fills.

Most of the McCosker sub-area is underlain by Orinda Formation bedrock, which is a weak sedimentary rock comprised mostly of sandstone, siltstone and claystone with lesser amounts of conglomerate containing rounded gravels. Upslope of the Project area, and in the vicinity of the former quarry, Moraga Formation volcanic rocks were observed in localized outcrops. Natural deposits derived from the Orinda Formation typically have appreciable clay contents. Based on the foregoing, predominantly granular soils, soils containing angular rock fragments, and soils containing volcanic rock fragments is to likely be of a non-natural origin (i.e., fill).

Where such soils were absent, the presence or absence of fill was interpreted based on an understanding of previous site grading, noting that it is often difficult to differentiate fill from the generally-similar on-site soils from which it was derived.

Valley Floor Borings

Fourteen borings were drilled within the valley floor on or proximate to the existing primary access road and loop. Bedrock depths shown on the logs of the borings are tabulated below in *Table 3.6-5, Bedrock Depth at Boring Locations in the McCosker Sub-area Valley* (from south to north in each table); "NE" signifies that bedrock was not encountered above the level of the boring bottom.

Only two borings drilled near the proposed creek alignment encountered bedrock near the planned excavation depths (i.e. shallower than about 15 feet). The logs in Geotechnical Investigation Report *(Appendix E)* show that the soils that overlie bedrock are highly variable and include medium stiff to stiff lean clay (CL), stiff to very stiff fat clay (CH), loose to dense clayey gravel (GC) and loose to medium dense clayey sand (SC). For the most part, the soils encountered are interpreted as fill noting that some of the deeper gravels encountered include mixtures of angular volcanic and sedimentary rock fragments consistent with quarrying activities further up the valley.

TABLE 3.6-5
BEDROCK DEPTH AT BORING LOCATIONS IN THE MCCOSKER SUB-AREA VALLEY

Lower and Middle Valley Floor			
Boring	**Side of Valley**	**Total Depth (feet)**	**Depth to Rock (feet)**
B-10	East	18.9	NE
B-1	West	26.5	NE
B-11	West	20.5	NE
B-2	West	26.5	24.0
B-3	West	26.5	20.0
B-12	East	18.4	11.5
B-4	West	26.5	20.0

Upper Valley Floor (Loop Area)			
Boring	**Side of Valley**	**Total Depth (feet)**	**Depth to Rock (feet)**
B-5	West	26.5	14.5
B-19	West	9.5	4.5
B-6	East	26.5	20.0
B-18	West	38.5	35.0
B-17	West	21.3	18.5
B-16	East	17.6	NE
B-15	East	30.0	29.5

Groundwater

Project components are within the East Bay Plain groundwater basin. Groundwater recharge occurs naturally from percolating precipitation in open areas and along the tributaries as water flows into Moraga and San Leandro Creeks. During the geotechnical investigation, groundwater was observed in the borings drilled ranging in depth from approximately 8 to 32 feet below ground surface although, groundwater was also not encountered in a few borings.

Liquefaction and Related Ground Failure

Liquefaction occurs when saturated, cohesionless (low relative density) materials (usually sand or silty sand) are transformed from a solid to a near liquid state. This phenomenon occurs when moderate to severe seismic ground shaking causes porewater pressure to increase. Liquefaction can cause overlying structures (e.g., bridges, buildings, storage tanks) to settle non-uniformly, and buried structures (e.g., fuel tanks, pipelines) to float. In either situation, severe damage to the structure is highly likely. The expected level of ground shaking in the area is high enough to initiate liquefaction. As indicated in the boring records, the strata is between medium dense and very dense, with medium dense strata above the groundwater elevation making the potential for soil liquefaction minimal (Caltrans November 17, 2015). However, the geotechnical investigation noted that there are areas with low plasticity soils beneath the groundwater table that could be susceptible to liquefaction hazards.

Subsidence and Settlement

Subsidence is the gradual downward settling of the land surface with little or no horizontal movement. It is caused by many different factors. Extracting large fluid volumes (water, oil and gas) from thick layers of poorly consolidated sediments is a principal cause of surface subsidence. Since the thickness of alluvial sediments in the area is limited by shallow bedrock and no major groundwater production fields are located within or nearby the Project area, the potential for surface subsidence associated with groundwater extraction is limited.

Settlement may occur in the Project area if it is found to have soil with high clay content, which can also be susceptible to expansion and possibly hydro-consolidation. Settlement and hydro-consolidation can result in surface subsidence. Consolidation (and long-term settlement) is most prominent in clay-rich and silt-rich soils, resulting from loading pressure created by man-made structures, including buildings or artificial fill. This added weight could collapse internal void spaces within the soils, causing overlying structures to settle and possible experience damage. This consolidation and settlement can be much more dramatic under severe seismic shaking (dynamic settlement). Hydro-consolidation will also lead to settlement, but includes the addition of water into the soil structure causing more rapid and more substantial settlements.

Slope Stability

There are some substantial slopes within Project area. At each Project component site, moderate to steep slopes are present. Some of these slopes may be subject to instability in a static condition or during an earthquake.

Expansive Soils

Expansive soils are characterized by their potential “shrink-swell” behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. Clay minerals such as smectite, bentonite, montmorillonite, beidellite, vermiculite and others are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near surface soils, the higher the potential for significant expansion. The greatest effects occur when there are significant or repeated moisture content changes. Expansions of ten percent or more in volume are not uncommon. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors and basement walls. Damage to the upper floors of the building can also occur when movement in the foundation is significant. Structural damage typically occurs over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.

3.6.3 Research Methodologies

In accordance with CEQA, this geology and soils resources analysis was conducted to:

- Identify geology and soils resources, including surface and sub-surface conditions
- Determine whether there are conditions that could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death resulting from geologic events including, earthquakes and landslides

- Determine whether there are soils that could be subject to conditions such as expansion, subsidence or liquefaction that could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death
- Determine whether there are geologic and/or soils conditions that would not support the Project activities or could result in adversely affecting the natural environment through the Project activities including, substantial soil erosion or the loss of topsoil.

Information about Project area geology and soils resources was obtained through a review of: published information, historical information, site-specific information and data review of conceptual design information. The literature and data review was supplemented with site reconnaissance visits, subsurface explorations, and sample review and laboratory testing. Each of these research methodologies are summarized below.

Review of Information and Data

A variety of materials containing information relevant to the geologic and seismic setting of the site, including maps and literature published by the U.S. Geological Survey (USGS) and California Geological Survey (CGS) was reviewed by AGEO, the geotechnical consultant for the project, including:

- P/A Design Resources, Inc. (P/A), 2008, "*McCosker Ranch/Texas Parcel Water System*," drawing dated October 15, 2008, which shows the location of existing onsite water infrastructure, which includes underground pipes, underground tanks and a pump house.
- California Department of Transportation (CalTrans), 2015, "*Preliminary McCosker Ranch Subsurface Investigation Report*," dated November 17, 2015, which shows boring data from 2015.
- Stantec, 2014, "*McCosker Feasibility Report: Daylighting an Unnamed Tributary on the McCosker Property*," dated September 12, 2014.
- Plan sheets titled "*McCosker Sub-area Creek Restoration and Infrastructure Project*" by ESA.

A list of selected references is presented in Section 7.00 of the Geotechnical Investigation Report (*Appendix E).* The report provides details of the investigation that included site reconnaissance visits and subsurface explorations where soil samples were collected for laboratory analysis of geotechnical properties in accordance with ASTM standards.

3.6.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G, Section VI, a project would have a significant impact on geologic and/or soil conditions if it would:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other

substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

b) Result in substantial soil erosion or the loss of topsoil?

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below:

a.i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Because of the Project location, the Project would not result in impacts related to fault rupture since none of the proposed elements are located within or adjacent to a Alquist-Priolo Earthquake Fault Zone. Therefore, this criterion is not addressed further in this EIR.

3.6.5 Impact Analysis

a.ii) Impact GEO-1: The Project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death due to groundshaking (Less than Significant).

The site is located in the highly seismic San Francisco Bay Region, and likely to experience one or more episodes of strong ground shaking during the life of the Project. If not constructed appropriately, the proposed improvements that would be constructed with the Project could be damaged and result in injury or loss of life. The California Building Code (CBC) has adopted provisions for addressing strong ground shaking that would be incorporated into the design of all structures including the bridges and abutments, water tanks, vault toilets, and group area pavilion. Incorporation of the recommendations from a final design level geotechnical report by a California licensed geotechnical engineer or engineering geologist in accordance with the current CBC would ensure that all proposed improvements are designed to withstand anticipated groundshaking hazards. Therefore, the potential impact related to groundshaking would be *less than significant* and no mitigation is required.

Mitigation: None required.

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a.iii) Impact GEO-2: Project implementation could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction (Less than Significant).

As noted above, the Project site is located in a seismically active area that would likely experience one or more large earthquakes over the design life of the proposed improvements. If not designed appropriately, elements of the Project could become damaged or cause injury or death. Liquefaction at the site could result in loss of bearing pressure, lateral spreading, sand boils (liquefied soil exiting at the ground surface), and earthquake-induced settlement.

The Project area covers a large area with varying geologic conditions. Liquefaction is most likely in areas underlain by saturated, loose unconsolidated deposits within 50 feet of ground surface. According to the geotechnical report for the McCosker sub-area, the potential for earthquake induced liquefaction was noted. The current CBC includes requirements to conduct a geotechnical investigation by a California licensed geotechnical engineer or engineering geologist. Adherence to these requirements which would include incorporation of industry standard measures of minimizing the potential for liquefaction through foundation design, treatment of site soils and/or replacement of liquefiable soils with engineered fills, would ensure that seismically-induced ground failure is a *less than significant impact* and no mitigation is required.

Mitigation: None required.

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a.iv) Impact GEO-3: The Project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death due to earthquake-induced landslides (Less than Significant).

The Project site is in a hilly region with a range of topographic conditions. The Project would daylight drainages that are currently buried and thus would create slopes along the creekbanks. Considering the seismically active region, there is a potential for an earthquake to trigger a landslide event causing damage, injury, and/or death if not designed appropriately.

Temporary cut slopes in the undocumented fill may expose materials that are prone to sliding, sloughing or caving. All temporary cut slopes associated with site excavations would be adequately inclined to prevent sloughing and collapse in accordance with geotechnical recommendations found in the final design level geotechnical report in accordance with the current CBC. For the various soil layers that will likely be exposed in on site cuts, the preliminary geotechnical recommendations included the following maximum temporary cut slope inclinations (*Table 3.6-6*); however, appropriate inclinations will ultimately depend on the actual soil and groundwater conditions exposed during the earthwork operations.

TABLE 3.6-6
TEMPORARY CUT SLOPE INCLINATIONS

Soil Type	Maximum Temporary Cut Inclination (Horizontal:Vertical)
Loose Sand and Gravel	2:1
Medium Dense to Dense Sand and Gravel	1.5:1
Medium Stiff to Very Stiff Clay	1:1
In-place Bedrock	0.75:1

All field earthwork activities would be overseen by a licensed geotechnical engineer or engineering geologist to ensure that current engineering practices and recommendations from the design level geotechnical report are implemented. Fill placement areas would be "set back" from the tops of existing soil slopes due to concerns related to on site undocumented fill. In general, no fill would be placed outside the zone defined by an imaginary line extending up at a 3:1 (horizontal to vertical) inclination from the base of the adjacent slope. The outboard (southwest-facing) slopes of the Upper and Lower Level Pads that make up the Fiddleneck Field recreation area have inclinations between about 1:5 to 1 and 2:1 (horizontal to vertical). These existing fill slopes are "undocumented" in that there are no available records documenting that the fill materials were placed and compacted under engineering controls. As a result, new fill would not be placed directly adjacent to the tops of the existing fill slopes to account for variations in fill properties and the possibility of surficial slope instability. Areas where slope inclinations of anything greater than 3:1 would be made in accordance with building code standards as overseen and directed by a California state licensed geotechnical engineer or engineering geologist. Oversight would include implementation of geotechnical design measures such as over-excavation and recompaction of suitable fill material in lifts that would be based on geotechnical observation during construction. Biotechnical bank stabilization techniques, including vegetated soil lifts and brush mats, could also be employed in areas where banks are 2:1 or steeper. Implementation of these measures would ensure that constructed slopes would be able to meet minimum factor of safety factors in accordance with building code requirements. Therefore, the potential impacts related to earthquake-induced landslides would be *less than significant* and no mitigation is required.

Mitigation: None required.

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b) Impact GEO-4: Project construction and operation would result in substantial soil erosion or the loss of topsoil. (Less than Significant)

Project construction activities associated with the proposed elements would involve earthwork activities, including trail construction, grading, excavation and stockpiling of soils. Disturbance of soils formerly protected with vegetation or covered by asphalt or concrete can become exposed to winds and water flows that result in soil erosion or the loss of topsoil. The Project would be required to implement the construction Best Management Practices (BMPs), as detailed in the Storm Water Pollution Prevention Plan (SWPPP) as required in the District Technical

Specifications and Special Conditions and by the General Construction Permit from the National Pollution Discharge Elimination System program. Although, these measures are intended to prevent sedimentation from entering runoff from the site, they generally prevent soil erosion and loss of topsoil occurring at a construction site. Specific to trail construction and modification, *Appendix B, Trail Construction and Trail Modification Best Management Practices* describes in detail the BMPs that would be implemented to minimize adverse impacts to the parkland environment during trail construction, modification, and restoration activities. These measures would be effective in minimizing the potential for soil erosion or loss of topsoil. Project implementation would also include establishment of riparian vegetation using native plantings and soil bioengineering principles which would be designed to protect the newly exposed areas following removal of the buried culverts. Thus, with adherence to the required BMPs during site construction and creek restoration activities, potential erosion and loss of topsoil would be minimized. Thus, Project impacts would be *less than significant* and no mitigation is required.

Mitigation: None required.

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c) Impact GEO-5: Project elements could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse (Less than Significant).

As noted above, the Project area includes a range of topographic conditions that include areas that could be susceptible to landslides. If not designed appropriately, the created creek banks from the daylighting of the creek could become unstable over time as these areas would become newly exposed to forces that could result in a landslide damaging improvements such as bridge abutments or supports. Daylighting of the creek bank would include the creation of slopes at inclinations of 2:1 (horizontal to vertical) and steeper which in general could be subject to slope instability if not engineered appropriately.

However, as noted above, all improvements, as well as all created cut slopes, would be designed and overseen by a California licensed geotechnical engineer. In accordance with the California Occupational Safety and Health Administration (Cal-OSHA) standards, during construction, the contractor would be required to shore or slope to excavations deeper than four feet that would be entered by workers. As noted in the preliminary geotechnical report, daylighted creek banks would be preferably laid back to at least 3:1 where feasible, which is generally considered to be a stable inclination. However, it is anticipated that 2:1 and steeper slopes would be necessary due to various site-specific conditions. As noted above, constructed slopes in the McCosker Sub-area would be overseen by a licensed geotechnical engineer which may include engineering stabilization measures such as over-excavation and recompaction of fill materials in lifts and biotechnical bank stabilization measures. Implementation of these measures contained within a final design level geotechnical report would ensure that constructed slopes meet minimum factors of safety under static conditions in accordance with building code requirements. Therefore, the potential for the proposed elements to be located on a soil unit susceptible to landslides would be *less than significant* and no mitigation is required.

The potential for lateral spreading (related to liquefaction) and liquefaction is addressed above in *Impact GEO-2*.

All fill materials would be placed in lifts and appropriately moisture conditioned in accordance with ASTM D-1557 test method. A certified geotechnical engineer would observe and test, as appropriate, during subgrade preparation to check that surfaces to receive fill are properly prepared and verify that specified compaction and moisture conditioning requirements are achieved. As above, all proposed improvements would receive site preparations consistent with building code requirements which would minimize the potential for any subsidence. Therefore, the potential for subsidence associated with any of the proposed improvements would be less than significant.

Collapse is a geotechnical hazard more commonly associated with certain geologic conditions such as arid wind-blown deposits, or areas where slightly soluble bedrock such as limestone underlie improvements.

Therefore, with implementation of geotechnical recommendations in accordance with a design level geotechnical report consistent with building code requirements, the proposed improvements of the Project related to unstable soils would have a *less than significant impact* and no mitigation is required.

Mitigation: None required.

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d) Impact GEO-6: Project elements could be located on expansive soil creating substantial risks to life or property (Less than Significant).

As noted above, the Project area includes a range of soil conditions that could include soils that are susceptible to expansion over time. If not designed appropriately, the proposed improvements could become damaged as repeated cycles of shrinking and swelling occur. However, all proposed improvements would be constructed in accordance with building code requirements as overseen by a California licensed geotechnical engineer or engineering geologist. Implementation of geotechnical measures such as use of engineered fill or on-site treatment of soils that are found to have expansive properties would be effective in minimizing potential impacts to *less than significant levels* and no mitigation is required.

Mitigation: None required.

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e) Impact GEO-7: Project elements include alternative waste water disposal systems where sewers are not available for the disposal of waste water (Less than Significant).

The Project does not include the construction of any septic or alternative waste water disposal system. Three pre-manufactured vault toilet restroom facilities are proposed (two in the

McCosker sub-area and one in Preserve sub-area) where all the waste is contained in sealed concrete vaults and emptied by pumping by District trained staff on a routine basis. The toilets would be constructed to meet current CBC codes at an off-site manufacturing facility and delivered to the site for installation. Site drawings for guiding installation would be prepared by a licensed engineer adhering to the District's standard technical specifications. The plans and specifications would be reviewed by the County Health and Public Works Departments. The vault toilet installation would be overseen by a District staff person certified in pre-manufactured vault toilet installation. Implementation of these measures would be effective in minimizing potential impacts to *less than significant levels* and no mitigation is required.

Mitigation: None required.

3.6.6 Cumulative Effects

Geographic Extent/Context

The geographic scope for the analysis of cumulative geological impacts includes the greater Bay Area where there is generally a high risk of exposure to seismic hazards.

Past, Present, and Reasonably Foreseeable Projects

The potential impacts associated with exposure to potential geological and soils hazards is generally localized because of the dependence on site specific conditions. Owing to the fact that geotechnical conditions and hazards can change substantially over relatively short distances, projects do not typically combine to become cumulatively considerable. The Project and the related projects would all be constructed in accordance with the most recent version of the California Building Code seismic safety requirements and recommendations contained in a project area specific geotechnical report, as applicable, prepared by a California licensed geotechnical engineer or engineering geologist. Therefore, potential exposure to geological and soils hazards resulting from construction and operation of the Project would not result in a cumulatively considerable impact.

3.6.7 References

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3.7 Greenhouse Gas Emissions

3.7.1 Regulatory Framework

The following discussion describes existing greenhouse gas emissions in the region generally, beginning with a discussion of typical greenhouse gas types and sources, impacts of global climate change, the regulatory framework surrounding these issues, and current emission levels. This section also describes regulations related to Global Climate Change at the federal, State, and local level.

Greenhouse Gases and Global Climate Change

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other greenhouse gases are the primary causes of the human-induced component of warming. Greenhouse gases are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[1]

Greenhouse gases are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of greenhouse gases to be released into the atmosphere. These extra emissions are increasing greenhouse gas concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade greenhouse gases include naturally-occurring greenhouse gases such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

[1] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of greenhouse gases above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "greenhouse gases" will refer collectively to the six gases listed above only.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each greenhouse gas to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant greenhouse gas; the definition of GWP for a particular greenhouse gas is the ratio of heat trapped by one unit mass of the greenhouse gas to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. Greenhouse gas emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). *Table 3.7-1, Global Warming Potential of Greenhouse Gases* shows the GWP for each type of greenhouse gas. For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide.

TABLE 3.7-1
GLOBAL WARMING POTENTIAL OF GREENHOUSE GASES

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

SOURCE: IPCC, 2007. Climate Change 2007: *The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC*.

The following discussion summarizes the characteristics of the six greenhouse gases and black carbon.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic out gassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2

include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

In 2015, CO_2 emissions accounted for approximately 84 percent of California's overall greenhouse gas emissions.[2] The transportation sector accounted for California's largest portion of CO_2 emissions, approximately 44 percent, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second largest category of greenhouse gas emissions.

Methane

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California. Methane accounted for approximately 9.0 percent of greenhouse gas emissions in California in 2015.[3]

Total annual emissions of methane are approximately 500 million tons, with manmade emissions accounting for the majority. As with CO_2, the major removal process of atmospheric methane—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

Nitrous Oxide

Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 2.7 percent of greenhouse gas emissions in California in 2015.[4]

2 California Air Resources Board, 2017. *California Greenhouse Gas Emission Inventory - 2017 Edition.* June 6. Website: www.arb.ca.gov/cc/inventory/data/data.htm (accessed April 20, 2018).

3 Ibid.

4 Ibid.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[5] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 4.3 percent of man-made greenhouse gas emissions (CO_2e) in California, 2015.[6]

Black Carbon

Black carbon is the most strongly light-absorbing component of PM formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of fine particulate matter ($PM_{2.5}$) and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb a million times more energy than CO_2.[7] Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global-warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel fueled vehicles. The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The California Air Resources Board (CARB) estimates that the annual black carbon emissions in California have decreased approximately 70 percent between 1990 and 2010 and are expected to continue to decline significantly due to controls on mobile diesel emissions.

Federal Regulations

The United States has historically had a voluntary approach to reducing greenhouse gas emissions. However, on April 2, 2007, the United States Supreme Court ruled that the U.S. Environmental Protection Agency (USEPA) has the authority to regulate CO_2 emissions under the federal Clean Air Act. While there currently are no adopted federal regulations for the control or reduction of greenhouse gas emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of greenhouse gases from large greenhouse gas emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Clean Air Act, finding that six greenhouse gases (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and

5 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

6 Ibid.

7 U.S. Environmental Protection Agency, 2015. *Black Carbon*. Website: www3.epa.gov/blackcarbon/basic.html (accessed on April 20, 2018). September.

welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national greenhouse gas emission standards.

State Regulations

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002)

In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the CARB to set greenhouse gas emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of CAA Preemption was not granted by the U.S. EPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025.

Executive Order S-3-05 (2005)

Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's greenhouse gas emissions reduction targets, which established the following goals:

- Greenhouse gas emissions should be reduced to 2000 levels by 2010;
- Greenhouse gas emissions should be reduced to 1990 levels by 2020; and
- Greenhouse gas emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce greenhouse gases. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward greenhouse emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads this Climate Action Team (CAT) made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate Statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the Statewide greenhouse gas targets that were established in the executive order and further defined under Assembly Bill 32, the "Global Warming Solutions Act of 2006" (AB 32). The first CAT Report to the Governor and the Legislature was released in March 2006, which it laid out 46 specific emission reduction strategies for reducing greenhouse gas emissions

and reaching the targets established in the Executive Order. The last CAT Report to the Governor and Legislature was released in December 2010.

Assembly Bill 32 (2006), California Global Warming Solutions Act

California's major initiative for reducing greenhouse gas emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing greenhouse gas emissions to 1990 levels by 2020. The CARB has established the level of greenhouse gas emissions in 1990 at 427 MMT CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce greenhouse gases that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT of CO_2e, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002-2004 average emissions). The Scoping Plan also includes CARB-recommended greenhouse gas reductions for each emissions sector of the State's greenhouse gas inventory. The Scoping Plan calls for the largest reductions in greenhouse gas emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related greenhouse gas targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both CARB's new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

CARB released updated greenhouse gas reduction targets in March 2018 for local government operations and local land use decisions. The Scoping Plan states that land use planning and urban growth decisions play an important role in the State's greenhouse gas reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to

accommodate population growth and the changing needs of their jurisdictions (meanwhile, CARB is also developing an additional protocol for community emissions). CARB further acknowledges that decisions on how land is used will have large impacts on the greenhouse gas emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate greenhouse gas reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of SB 375.

In addition to reducing greenhouse gas emissions to 1990 levels by 2020, AB 32 directed the CARB and the Climate Action Team (CAT) to identify a list of "discrete early action greenhouse gas reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing greenhouse gases by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the Low Carbon Fuel Standard as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the Low Carbon Fuel Standard, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeal stayed the District Court's injunction, allowing implementation of the Low Carbon Fuel Standard. The Ninth Circuit decided to uphold the Low Carbon Fuel Standard.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[8] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce Statewide greenhouse gas emissions by nearly 16 MMT.[9]

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive greenhouse gas emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB's climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 greenhouse gas emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the

8 California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

9 California Air Resources Board, 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

State's "longer-term" greenhouse gas reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the Draft 2017 Scoping Plan, to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32.

Senate Bill 97 (2007)

SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the OPR to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the CEQA Guidelines in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for greenhouse gas emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008)

Signed into law on October 1, 2008, SB 375 supplements greenhouse gas reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the CARB approves greenhouse gas reduction targets for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The CARB may update the targets every 4 years and must update them every 8 years. MPOs in turn must demonstrate how their plans, policies and transportation investments meet the targets set by the CARB through Sustainable Community Strategies (SCS). The SCS are included with the Regional Transportation Plan (RTP), a report required by State law. However, if an MPO finds that their SCS will not meet the greenhouse gas reduction target, they may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

Executive Order B-30-15 (2015)

Governor Jerry Brown signed Executive Order B-30-15 on April 29, 2015, which added the immediate target of:

- Greenhouse gas emissions should be reduced to 40 percent below 1990 levels.

All State agencies with jurisdiction over sources of greenhouse gas emissions were directed to implement measures to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help

frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act

SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the CA Public Utilities Commission for the private utilities and by the CA Energy Commission for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to state energy agencies under existing law. The addition made by this legislation requires state energy agencies to plan for, and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197

In summer 2016 the Legislature passed, and the Governor signed, Senate Bill 32 (SB 32) and Assembly Bill 197 (AB 197). SB 32 affirms the importance of addressing climate change by codifying into statute the greenhouse gas emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change (IPCC) analysis of the emissions trajectory that would stabilize atmospheric greenhouse gas concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce greenhouse gas emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Local Ordinances and Policies

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that regulates sources of air pollution within the nine San Francisco Bay Area counties. The BAAQMD regulates greenhouse gas emissions through the following plans, programs, and guidelines.

Clean Air Plans

The Clean Air Plan guides the region's air quality planning efforts to attain the California Air Resources Board California Ambient Air Quality Standards (CAAQS). The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017 by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (i.e., reactive organic gases [ROG] and nitrogen oxide [NO_x]), particulate matter and greenhouse gas emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD's plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among bay area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve greenhouse gas reduction targets; and
- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super Greenhouse Gases" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

BAAQMD Climate Protection Program

The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing emissions of greenhouse gas and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines

The BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions.

In June 2010, BAAQMD adopted updated draft CEQA Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The 2017 CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the project.

Under the CEQA Air Quality Guidelines, a local government may prepare a Qualified Greenhouse Gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy and General Plan that addresses the project's greenhouse gas emissions, it can be presumed that the project will not have significant greenhouse gas emissions under CEQA. The CEQA Air Quality Guidelines also included a quantitative threshold for project level analyses based on estimated greenhouse emissions as well as per capita metrics.

Local Agency Climate Action Plans

City of Oakland

The City of Oakland Energy and Climate Action Plan (ECAP) was adopted on December 4, 2012.[10] The purpose of the ECAP is to identify and prioritize actions the City can take to reduce energy consumption and greenhouse gas emissions associated with Oakland. The ECAP establishes greenhouse gas reduction actions, as well as frameworks for coordinating implementation and monitoring and reporting on progress. In July 2009, the Oakland City Council approved a preliminary greenhouse gas reduction target for the year 2020 of 36 percent below 2005 levels. This planning target was developed based on recent publications of the world's leading climate scientists. The primary sources of Oakland's greenhouse gas emissions include transportation and land use, building energy use, and material consumption and waste.

The City of Oakland ECAP also determines the City's greenhouse gas emissions by sector which identifies that the largest percentage of greenhouse gas emissions are from the building energy use sector, approximately 56 percent, followed by the transportation on local roads sector, 38 percent. The landfilled waste sector was responsible for 6 percent.

Contra Costa County

Contra Costa County adopted a Climate Action Plan (CAP) on December 15, 2015.[11] The CAP is designed to demonstrate the County's commitment to addressing the County's commitment to addressing the challenges of climate change by reducing local greenhouse gas emissions while improving community health. This CAP identifies how the County will achieve the AB 32 greenhouse gas emissions reduction target of 15 percent below baseline levels by the year 2020, in addition to supporting other public health, energy efficiency, water conservation, and air quality goals identified in the County's General Plan and other policy documents. In addition to reducing greenhouse gas emissions, the CAP includes greenhouse gas reduction measures and actions to reduce greenhouse gas emissions from community-wide sources that relate to energy efficiency, renewable energy, land use and transportation, solid waste, water conservation, and government operations.

10 Oakland, City of, 2012. *Oakland Energy and Climate Action Plan.* December 4.

11 Contra Costa, County of, 2015. *Contra Costa County Climate Action Plan.* December 15.

City of Orinda

The City does not have a Climate Action Plan and the adopted General does not contain any policies specifically addressing greenhouse gas emissions and climate change. However, General Plan Conservation Element Policy N promotes energy conservation programs and practices, which would help reduce greenhouse gas emissions. In addition, Section 15.10.010 of the Orinda Municipal Code[12] identifies the City's adoption of the California Green Building Standards Code (CalGreen), which would reduce in greenhouse gas emissions from buildings; promote environmentally responsible, cost-effective, healthier places to live and work; reduce energy and water consumption; and respond to the directives by the Governor.

City and County General Plan Policies

City and county general plan policies provide guidance on District parklands from the planning phases through project implementation. Relevant city and county general plan policies pertaining to greenhouse gases and climate change in the Project area are described in *Table 3.7-2, City and County Greenhouse Gas/Climate Adaption Goals and Policies.*

TABLE 3.7-2
CITY AND COUNTY GENERAL PLAN GREENHOUSE GAS/CLIMATE ADAPTION GOALS AND POLICIES

City of Oakland General Plan	Project Consistency
Improve the environment: Improve air quality and reduce exposure to traffic noise	The Project promotes energy conservation programs, including solar and added bike parking and add electric recharging stations to encourage a reduction in petroleum emissions and vehicle traffic noise when accessing the Project area
Encourage Alternative Means of travel	The expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities for pedestrian, as well as equestrians and bicyclists to encourage alternate modes of travel to the Project area
Policy T3.5: The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible.	The Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities, including multi-day treks through the East Bay Hills and considers access to transit
Policy OS-1.1: Conserve existing City and Regional Parks characterized by steep slopes, large groundwater recharge areas, native plant and animal communities, extreme fire hazards, or similar conditions.	The Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities, including multi-day treks through the East Bay Hills and considers access to transit
Policy OS.2.1: Manage Oakland's urban parks to protect and enhance their open space character while accommodating a wide range of outdoor recreational activities.	The Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities, including multi-day treks through the East Bay Hills and considers access to transit
Policy CO-13.4: Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.	The Project promotes energy conservation programs, including solar and added bike parking and add electric recharging stations to encourage a reduction in petroleum emissions and vehicle traffic noise when accessing the Project area

[12] Orinda, City of, 2017. *Orinda, California – Code of Ordinances. Title 15- Buildings and Construction/Chapter 15.10 California Green Building Standards Code.* June 13.

Contra Costa General Plan	Project Consistency
Goal 8-AD: To reduce the percentage of Average Daily Traffic (ADT) trips occurring at peak hours.	Peak Project trips would generally occur during weekends and non-peak work hours. Additionally, the Project would add access points convenient to local neighborhoods and would incorporate secured bicycle storage facilities to facilitate bike use when combined with connections to regional bike routes and trails to encourage alternate modes of travel to the Project area
Policy 8-98: Development and roadway improvements shall be phased to avoid congestion.	The Project does not include roadway improvements. Construction related traffic impacts in the McCosker would take into account peak traffic associated with the Canyon School
Policy 8-101: A safe, convenient and effective bicycle and trail system shall be created and maintained to encourage increased bicycle use and walking as alternatives to driving.	The Project area would offer opportunities to connect to popular on-street bicycle routes identified in city and county bike planning documents, as well as regional trails depicted in the District Master Plan.
Policy 8-102: A safe and convenient pedestrian system shall be created and maintained in order to encourage walking as an alternative to driving.	The expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities for pedestrian, as well as equestrians and bicyclists
Implementation Measure 8-dp: Review proposed development to encourage maximum use of bicycle, pedestrian and transit modes of transportation.	The Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities, including multi-day treks through the East Bay Hills and considers access to transit
City of Orinda General Plan	**Project Consistency**
Guiding Policy N: Promote energy conservation programs and practices.	The Project promotes energy conservation programs, including solar and added bike parking and add electric recharging stations to encourage a reduction in petroleum emissions when accessing the Project area
Implementing Policy J: Encourage the conservation of energy through the promotion of solar design, and recycling of newspaper, aluminum and bottles. Provisions should be made to allow for a conveniently located and screened recycling area in the downtown.	The Project promotes energy conservation programs, including solar and added bike parking and added electric recharging stations to encourage a reduction in petroleum emissions when accessing the Project area. In addition, the District has adopted a sustainably policy to encourage recycling and reduce solid waste ending up in landfill

East Bay Regional Park District

2013 District Master Plan

The District's 2013 Master Plan contains policies for achieving the highest standards of service in resource conservation, management, interpretation, public access, and recreation. The goal of the Master Plan is to maintain a careful balance between the need to protect and conserve resources and the need to provide opportunities for recreational use of the parklands. The Master Plan also identifies climate change as an institutional priority and states that the District has an important role to play in contributing to the sustainability of the region and acknowledges that climate change may affect ecosystems in ways that are still too complex to understand.

District Master Plan Policies

The Master Plan contains policies relating to providing parking and trailheads at convenient locations, which when combined with connections to regional bike routes and trails as described in *Chapter 2.0 Project Description, Section 3.3.6, Existing Trail System* and illustrated in *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites* would promote alternatives to vehicle access to the Project area. Additionally, the Project proposes adding secured bicycle

storage facilities to facilitate bike use, and provisions to accommodate electric vehicles at the staging areas. The total of these measures combined are intended to disperse and enhance visitor access opportunities, while reducing petroleum gas emissions. Master Plan policies that support visitors using alternative modes of transportation or are related to climate change are described in *Table 3.7-3, 2013 District Master Plan Greenhouse Gas/Climate Adaption Goals and Policies*.

TABLE 3.7-3
2013 DISTRICT MASTER PLAN GREENHOUSE GAS/CLIMATE ADAPTION GOALS AND POLICIES

Goals and Policies	Project Consistency
RM1: Climate Change is expected to affect...resources in various ways. Changes tin the ranges of various species, increased potential for wildfires and pests are anticpated with this change in the weather. In a manner consistent with the desire to "conserve and enhance" is resources, he District must closely track the impact of this phenomenon and if necessary, act to relocate or protect in-situ resources that are being degraded or potentially lost by this change.	Consistent with Policy RM1b, the Project includes Objective 6 Climate Adaptation and Resiliency and implementation strategies for maintaining, monitoring and adapting management programs for natural communities and habitat to address climate change effects and developing interpretive programming directed at highlighting climate adaptation and resiliency.
RM1b: The District will specifically track and monitor the effects of climate change on its resources, interceding when necessary to relocate or protect in-situ resources that are being degraded or lost by this shift in the environment.	As described above the Project addresses climate Change and he need to monitor it effects in Objective 6 Climate Adaptation and Resiliency.
PA4: The District will provide access to parklands and trails to suit the level of expected use. Where feasible, the District will provide alternatives to parking on or use of neighborhood streets. The District will continue to advocate and support service to the regional park system by public transit.	Consistent with Policy PA4, the Project would anticipate an increase in recreational use from added adjacency to new neighborhoods, and anticipated population growth in the region through the increase in parkland area, added access points and an expanded trail.
PA5: The District will cooperate with local and regional planning efforts to create more walkable and bikeable communities, and coordinate park access opportunities with local trails and bike paths developed by other agencies to promote green transportation access to the Regional Parks and Trails.	Consistent with Master Plan Policy PA5, the Project considers, transit opportunities, access points and trails and bike paths developed by other agencies to promote green transportation access to the Project area.
RFA2: The District will provide a diverse system of non-motorized trails to accommodate a variety of recreational users including hikers, joggers, people with dogs, bicyclists, and equestrians. Both wide and narrow trails will be designed and designated to accommodate either single or multiple users based on location, recreational intensity, environmental, and safety considerations. The District will focus on appropriate trail planning and design, signage, and trail user education to promote safety and minimize conflicts between users.	Consistent with Master Plan Policy RFA2, the Project would provide a diverse system of non-motorized trails to accommodate a variety of recreational users through the implementation of Project Objective 3: Trail Development which states: "*Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda."* One of the supporting strategies for Objective 3 states: "*Provide connectivity via a multi-use trail system (e.g., hike, bike, equestrian, dog walking) including narrow, natural surface trails, that provide access from the McCosker site to Western Hills Open Space Staging Area, Orinda bike routes, existing Sibley Round Top Trail, and Huckleberry Preserve, while recognizing that not all uses may be appropriate for all trails."*
RFA3: The District will continue to add narrow trails designated as both single- and multi-use for hikers, equestrians, dog walkers, and bike riders throughout the system of regional parklands.	Consistent with Master Plan Policy RFA3, the Project would add narrow trails designated as both single-and multi-use for hikers, equestrians, people with dogs, and bike riders. through the implementation of Project Objective 3.
RFA4: The District will expand its unpaved multi-use trail system as additional acreage and new parks are added. The District will continue to provide multi-use trails to link parks and to provide access to park visitor destinations.	Consistent with Master Plan Policy RFA4, the Project would add 3.9 miles of unpaved multi-use trails to the Robert Sibley Volcanic Regional Preserve. Multi-use trails linking parks and park visitor destinations would be accomplished through implementation of an Objective 4

Goals and Policies	Project Consistency
	Recreation Facility and Interpretive Elements strategy that states: "*Provide backpack camp opportunities within the developed recreation area to encourage multi-day trail treks along the interconnected system of trails through the East Bay Hills, including the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail and add to the Skyline/Bay area Ridge Trail/Anza national Historic Trail system functions through development of a multi-day trek and camping opportunity in the East Bay Hills.*"
RFA5: The District will continue to plan for and expand the system of paved, multi-use regional trails connecting parklands and major population centers.	Consistent with Policy RFA5, the Project takes into consideration links to regional paved and unpaved trails and bikeways designated on the District Master Plan Map and other agencies to promote connections between parklands and to neighboring communities.

3.7.2 Greenhouse Gas Emissions Inventory

The emissions inventory identifies and quantifies the primary human-generated sources and sinks of greenhouse gases is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, California, and local greenhouse gas emission inventories.

Global Emissions

Worldwide net emissions (including the effects of land use and forestry) of greenhouse gases in 2010 were 46 billion metric tons[13] of CO_2e per year.[14] This represents a 35 percent increase from 1990.

United States Emissions

In 2015, the United States emitted about 6.5 billion metric tons of CO_2e or about 21 metric tons per year per person. The total 2015 CO_2e emissions represent a 3.5 percent increase since 1990 but a 10 percent decrease since 2005. Of the six major sectors nationwide – residential, commercial, agricultural, industry, transportation, and electricity generation – electricity generation accounts for the highest amount of greenhouse gas emissions (approximately 29 percent), with transportation second at 27 percent; these emissions are generated entirely from direct fossil fuel combustion.[15]

State of California Emissions

The CARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of greenhouse gases emitted to and removed from the atmosphere by human activities within the State and supports the AB 32 Climate Change Program.

13 A metric ton is equivalent to approximately 1.1 tons.

14 U.S. Environmental Protection Agency, 2017. *Inventory of U.S. Greenhouse Gas Emissions and Sinks. 1990-2015.* Available online at: www.epa.gov/sites/production/files/2017-02/documents/2017_complete_report.pdf (accessed April 20, 2018).

15 Ibid.

According to CARB emission inventory estimates, California emitted approximately 441.5 million metric tons of CO_2e emissions in 2014.[16] This represents an overall decrease of 9.4 percent since peak levels in 2004. During the 2000 to 2014 period, per capita greenhouse gas emissions in California have continued to drop from a peak in 2001 of 13.9 metric tons per person to 11.4 metric tons per person in 2014, which is an 18 percent decrease.[17] Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining, representing a 28 percent decline since the 2001 peak, while the state's GDP has grown 28 percent during this period.[18]

California greenhouse gas emissions from the transportation sector—still the State's largest single source of greenhouse gases, contributing 36 percent of total emissions—grew by 1 percent in 2014, although emissions from this sector are still 13 percent lower than peak levels in 2005.[19] The CARB attributes much of this decrease to the growing Statewide fleet of fuel-efficient vehicles—the hybrid vehicle market share increased in 2012 to 7.4 percent from the 2011 level of 5.4 percent.[20]

CARB staff has projected 2020 unregulated greenhouse gas emissions, which represent the emissions that would be expected to occur in the absence of any greenhouse gas reduction actions, would be 507 million metric tons (MMT) of CO_2e.[21] The total emissions are lower than originally forecast (596 MMT) in the AB 32 Scoping Plan to account for new estimates for future fuel and energy demand and accounting for the recent economic recession.

Greenhouse gas emissions in 2020 from the transportation sector as a whole are expected to increase to 184 MMT of CO_2e (2012 inventory is 167 MMT of CO_2e). The industrial sector consists of large stationary sources of greenhouse gas emissions and includes oil and gas production and refining facilities, cement plants, and large manufacturing facilities. Emissions for this sector are forecast to grow to 91.5 MMT of CO_2e by 2020, an increase of approximately 3 percent from the 2012 emissions inventory level. The commercial and residential sectors are expected to contribute 45.3 MMT of CO_2e, or about 9 percent of the total Statewide greenhouse gas emissions in 2020.[22]

San Francisco Bay Area Emissions

The BAAQMD established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates greenhouse gas emissions produced by the San Francisco Bay Area

16 California Air Resources Board, 2014. *Greenhouse Gas Inventory Data for 2000–2014*. Website: www.arb.ca.gov/cc/inventory/data/data.htm (accessed April 20, 2018).
17 Ibid.
18 Ibid.
19 Ibid.
20 Ibid.
21 California Air Resources Board, 2013. *Greenhouse Gas Inventory: 2020 Emissions Forecast*. Website: www.arb.ca.gov/cc/inventory/data/bau.htm (accessed April 20, 2018).
22 Ibid.

in 2011.[23] The inventory, which was published January 2015, updates the BAAQMD's previous greenhouse gas emission inventory for base year 2007.

In 2011, 86.6 million metric tons of CO_2e of greenhouse gases were emitted in the San Francisco Bay Area. Fossil fuel consumption in the transportation sector was the single largest source of the San Francisco Bay Area's greenhouse gas emissions in 2011. The transportation sector (including on-road motor vehicles, locomotives, ships and boats, and aircraft) contributed 39.7 percent of greenhouse gas emissions and the industrial and commercial sectors (excluding electricity and agriculture) contributed 35.7 percent of greenhouse gas emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with approximately 14 percent of the total greenhouse gas emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 1.5 percent of greenhouse gas emissions.

Contra Costa County Emissions

BAAQMD provided estimated greenhouse gas emissions by County, including Contra Costa County, in year 2011 in its Bay Area Emissions Inventory Summary Report: Greenhouse Gases.[24] The inventory quantifies greenhouse gas emissions from a wide variety of sources and is arranged by sector to facilitate detailed analysis of emissions sources.

As shown in *Table 3.7-4*, *Contra Costa County Greenhouse Gas Emissions by Sector*, the largest percentage of greenhouse gas emissions are from the industrial/commercial sector, approximately 56 percent, followed by the electricity/co-generation and transportation sectors, 23 and 16 percent, respectively. The residential fuel sector was responsible for 3 percent and the off-road equipment and agricultural/farming sectors were responsible for 1 percent.

TABLE 3.7-4
CONTRA COSTA COUNTY GREENHOUSE GAS EMISSIONS BY SECTOR, 2011

Sector	2011 Greenhouse Gas Emissions	
	Million Metric Tons CO_2e per Year	Percent of Total
Industrial/Commercial	17.8	56
Residential Fuel	1.0	3
Electricity/Co-Generation	7.2	23
Off-Road Equipment	0.2	1
Transportation	5.0	16
Agricultural/Farming	0.2	1
Total	**31.4**	**100**

SOURCE: BAAQMD, 2015.

[23] Bay Area Air Quality Management District, 2015. *Source Inventory of Bay Area Greenhouse Gas Emissions.* January.

[24] Bay Area Air Quality Management District, 2015. *Inventory Summary Report: Greenhouse Gases, Base Year 2011*. January

Alameda County Emissions

In addition, a portion of the project is located within the City of Oakland, which is within Alameda County. As discussed above, the BAAQMD provided estimated greenhouse gas emissions by County, including Alameda County, in year 2011 in its Bay Area Emissions Inventory Summary Report: Greenhouse Gases.[25]

As shown in *Table 3.7-5, Alameda County Greenhouse Gas Emissions by Sector*, the largest percentage of greenhouse gas emissions are from the transportation section, approximately 60 percent, followed by the industrial/commercial and residential fuel sectors, approximately 20 and 10 percent, respectively. The electricity/co-generation sector was responsible for 7 percent, the off-road equipment sector was responsible for 2 percent, and the agricultural/farming sector was responsible for 1 percent.

TABLE 3.7-5
ALAMEDA COUNTY GREENHOUSE GAS EMISSIONS BY SECTOR, 2011

Sector	2011 Greenhouse Gas Emissions	
	Million Metric Tons CO_2e per Year	Percent of Total
Industrial/Commercial	2.7	20
Residential Fuel	1.3	10
Electricity/Co-Generation	0.9	7
Off-Road Equipment	0.2	2
Transportation	7.9	60
Agricultural/Farming	0.1	1
Total	**13.2**	**100**

SOURCE: BAAQMD, 2015.

3.7.3 Research Methodologies

Greenhouse gas emissions associated with the Project would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term greenhouse gas emissions associated with project-related vehicular trips. Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions generated by a project. The California Emissions Estimator Model version 2016.3.2 (CalEEMod) was used to quantify greenhouse gas emissions generated by the Project.

[25] Ibid.

3.7.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G Section XVI, a project would have a significant adverse air quality impact if project-generated pollutant emissions would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The BAAQMD has further defined these criteria of significance to indicate the project would result in a less-than-significant greenhouse gas emissions impact if it would:

- *Result in operational-related greenhouse gas emissions of less than 1,100 metric tons of CO_2e a year; or*
- *Result in operational-related greenhouse gas emissions of less than 4.6 metric tons of CO_2e per service population (residents plus employees).*

3.7.5 Impact Analysis

a) Impact GHG-1: Construction activities associated with the Project could produce substantial greenhouse gas emissions. (Less than Significant)

Construction activities associated with the Project would produce combustion emissions from various sources. During construction, greenhouse gases would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates greenhouse gases such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The BAAQMD does not have an adopted threshold of significance for construction-related greenhouse gas emissions. However, lead agencies are encouraged to quantify and disclose greenhouse gas emissions that would occur during construction.

Using CalEEMod, it is estimated that the Project would generate approximately 160 metric tons of CO_2e during the construction period. Implementation of the BAAQMD Basic Construction Mitigation Measures, as required by Mitigation Measure AIR-1, would further reduce greenhouse gas emissions during the construction period to ensure impacts remain *less than significant.* Thus, no mitigation is required.

Mitigation: None required.

a) Impact GHG-2: Long-term operation of the project could generate substantial greenhouse gas emissions from area and mobile sources as well as indirect emissions from sources associated with energy consumption. (Less than Significant)

Long-term greenhouse gas emissions are those typically associated with area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emitters of greenhouse gas emissions would include Project-generated vehicle trips associated with visitor trips to the Project site. Area sources, such as maintenance equipment and campfires, would also result in greenhouse gas emissions. In addition, typically, energy source emissions result from activities in buildings for which electricity and natural gas are used, including building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics. However, the Project would not include any new electric lighting and therefore would not generate energy source emissions.

The Project would add 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer day use spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The Project would also include approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

The total acreage devoted to recreation/staging area units would be approximately 12.4 acres (including approximately 5 acres of public access and recreation features in the McCosker subarea) or approximately one percent of the total project acreage. This would represent an increase of 5.5 developed acres to the current developed area of 6.9 acres.

When calculating project greenhouse gas emissions to compare to the thresholds of significance, the BAAQMD recommends that the lead agency consider Project design features, attributes, and local development requirements as part of the project as proposed and not as mitigation measures. Consistent with BAAQMD guidance, greenhouse gas emissions were estimated using CalEEMod. Model results are shown in *Table 3.7-6, Greenhouse Gas Emissions (Metric Tons per Year)*. Trip generation rates for the project were based on the *Section 3.14, Transportation and Traffic*, which estimates the Project would generate a maximum of 1,664 net new average daily trips on Saturdays from all staging areas combined. In addition, the Project would include climate adaptation and resiliency strategies, which were included as inputs to CalEEMod. These strategies include the following:

- Maintain and enhance, where feasible, the native diversity of plant communities through existing resource and noxious weed management plans and policies.

- Maintain, monitor and adapt management programs for natural communities and habitat to address climate change effects.

- Maintain and augment grazing infrastructure, as needed, to implement adaptive vegetation management programs directed at protecting and supporting natural communities and habitat in an era of changing climate conditions.

- Reduce heat impacts, and absorb and store carbon, while benefitting the visitor experience, through creation of woody riparian vegetation along restored creek channels and within the developed recreation sites.

- Incorporate alternative energy sources such as solar into the project design, where feasible and appropriate.

- Reuse on-site materials to develop new recreation and interpretive features, where feasible and appropriate.

- Develop a portion of the interpretive programming for the project site to highlight climate adaptation and resiliency.

  – Improvements to the main Sibley staging area in the Preserve Sub-area and Old Tunnel Road would include new gates to control access into this site, vehicle turn-arounds, electric recharging units at some of the parking stalls, and installation of a vault toilet replacing the existing portable unit.

  – At the McCosker Sub-area, a new visitor parking lot would be constructed as part of the grading activities for Fiddleneck Field. It would accommodate approximately 43 spaces, including two ADA spaces, to serve day-use visitors and the reservation-only recreation area. Other features may include hitching posts and a watering trough to accommodate equestrian use, secured bicycle storage facilities to facilitate bike use, and provisions to accommodate electric vehicles. These measures would promote smart mobility and reduce regional Vehicle Miles Traveled (VMT) when combined with connections to regional bike routes and trails as described in Section 3.3.6 - Existing Trail System and illustrated in *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites*.

  – Provide connectivity via a multi-use trail system (e.g., hike, bike, equestrian, dog walking) including narrow, natural surface trails, that provides access between the McCosker Sub-area and the Red-tailed Hawk Staging Area, city and county bike routes, existing Sibley Round Top Trail, and Huckleberry Preserve, while recognizing that not all uses may be appropriate for all trails.

  – Augment parking at access points to help disperse use, improve connectivity to neighboring communities, and expand trail staging opportunities.

  – This expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities.

Table 3.7-6, Greenhouse Gas Emissions (Metric Tons per Year) shows the calculated greenhouse gas emissions for the Project. Mobile source emissions associated with park visitors are the primary emissions comprising 99 percent of total CO_2e emissions. Water source emissions are approximately 1 percent of the total. Additional calculation details are provided in *Appendix F, Air Quality Construction Analysis*.

TABLE 3.7-6
GREENHOUSE GAS EMISSIONS (METRIC TONS PER YEAR)

Emissions Source	Operational Emissions				
	CO_2	CH_4	N_2O	CO_2e	Percent of Total
Area Source Emissions	1.2	0.0	0.0	1.2	0
Energy Source Emissions	0.0	0.0	0.0	0.0	0
Mobile Source Emissions	385.9	0.0	0.0	386.3	99
Waste Source Emissions	0.0	0.0	0.0	0.0	0
Water Source Emissions	3.1	0.0	0.0	3.1	1
Total Emissions				**390.5**	**100**
BAAQMD Threshold				**1,100**	**-**
Exceed?				**No**	**-**

SOURCE: LSA, May 2018

As discussed above, according to the BAAQMD, a project would have less-than-significant greenhouse gas emissions if it would meet one or more of the following criteria: result in operational-related greenhouse gas emissions of less than 1,100 metric tons of CO_2e a year, or result in operational-related greenhouse gas emissions of less than 4.6 metric tons of CO_2e per service population (residents plus employees). Based on the analysis results, the Project would generate approximately 390.5 metric tons of CO_2e which is well below the BAAQMD's numeric threshold of 1,100 metric tons CO_2e. Therefore, the Project would not generate greenhouse gas emissions that will have a significant impact on the environment and this impact would be *less than significant* and no mitigation is required.

Mitigation: None required.

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b) Impact GHG-3: Operation of the Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (Less than Significant)

As discussed above, the Contra Costa County CAP, adopted in 2015, addresses local climate change and includes greenhouse gas reduction targets to comply with Assembly Bill 32, the California Global Warming Solutions Act of 2006. The CAP strategy is primarily based upon the land use, transportation, and conservation policies that are included in the General Plan. The CAP demonstrates that through land use planning/density choices, reduction in vehicle miles traveled, and energy conservation measures, the County contributes to the State greenhouse gas reduction targets.

The City of Orinda does not have a Climate Action Plan and the adopted General Plan does not contain any policies specifically addressing greenhouse gas emissions and climate change.

However, General Plan Conservation Element Policy N promotes energy conservation programs and practices, which would help reduce greenhouse gas emissions. In addition, Section 15.10.010 of the Orinda Municipal Code[26] identifies the City's adoption of the California Green Building Standards Code (CalGreen), which would reduce in greenhouse gas emissions from buildings; promote environmentally responsible, cost-effective, healthier places to live and work; reduce energy and water consumption; and respond to the directives by the Governor. These measures would not be applicable to the Project.

As discussed above, the City of Oakland ECAP, adopted in 2012, works to identify and prioritize actions the City can take to reduce energy consumption and greenhouse gas emissions associated with Oakland. The ECAP establishes greenhouse gas reduction actions, as well as frameworks for coordinating implementation and monitoring and reporting on progress. The City adopted a greenhouse gas reduction target for the year 2020 of 36 percent below 2005 levels. This planning target was developed based on recent publications of the world's leading climate scientists. The primary sources of Oakland's greenhouse gas emissions include transportation and land use, building energy use, and material consumption and waste.

As discussed above, the Project would add 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer day use spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The Project would also include approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

The total acreage devoted to Recreation/Staging Area Units would be approximately 12.4 acres (including approximately 5 acres of public access and recreation features in the McCosker subarea) or approximately one percent of the total Project acreage. This would represent an increase of 5.5 developed acres to the current developed area of 6.9 acres. Strategy Measure LUT 1.5 of the County's CAP states the County will work with the Contra Costa Transportation Authority to improve access to community-wide bicycle and pedestrian networks by closing gaps in the network, removing barriers, and providing additional bike- and pedestrian-oriented infrastructure. The Project is consistent with this strategy as it would extend the existing trails, enhancing safety, and improving efficiency of trail use for bicycle transportation. Priority Action PA 34 of the City of Oakland's CAP aims to accelerate completion of bicycle and pedestrian plans. The Project is consistent with this action as the Project includes an expansion of the existing trail system to promote bicycle and pedestrian activities. In addition, Priority Action PA 37 of the City of Oakland's CAP states the City should plan for electric vehicle infrastructure. The Project is also consistent with this action as the project would include electric recharging stations. Therefore, the Project would not conflict with plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions. This impact would be *less than significant* and no mitigation is required.

[26] Orinda, City of, 2017. *Orinda, California – Code of Ordinances. Title 15- Buildings and Construction/Chapter 15.10 California Green Building Standards Code.* June 13.

Mitigation: None required.

3.3.6 Cumulative Effects

Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in greenhouse gases and (b) global growth is continuing to contribute large amounts of greenhouse gasses around the world. Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global warming.

The combination of greenhouse gas emissions from past, present, and future projects contributes substantially to the phenomenon of global climate change and its associated environmental impacts. No individual project would result in a measurable impact on global climate change. Therefore, this analysis has addressed climate change primarily as a cumulative impact. As noted above, in developing the threshold of significance for greenhouse gas emissions, the BAAQMD identified the emissions level for which a project would conflict with existing California legislation adopted to reduce Statewide greenhouse gas emissions. According to the BAAQMD, if a project would generate greenhouse gas emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact, and would be considered significant. As indicated in the analysis presented above, the Project would not exceed the project-level significance criteria established by the BAAQMD and therefore the Project would not have a significant cumulative impact related to greenhouse gas emissions and global climate change.

3.7.7 References

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3.8 Hazards and Hazardous Materials

This section describes existing hazards and hazardous materials conditions that could affect or be affected by the Project. This section also describes laws, regulations, plans, and policies related to hazards and hazardous materials that may be relevant to the Project. Hazards that relate to pollutant emissions are discussed in *Sections 3.3, Air Quality* and *3.7, Greenhouse Gas Emissions*, and those relating to geology and seismicity are discussed in *Section 3.6, Geology and Soils*.

3.8.1 Regulatory Framework

This section describes the regulatory framework for hazardous materials, hazardous waste, and other hazards (including wildland fires), and applicable worker health and safety requirements, including federal, state, and regional and local policies and regulations pertaining to hazardous materials management and wildland fires.

Federal

There are three primary agencies that oversee regulations directed at minimizing hazards and regulating the use, storage, transport and disposal of hazardous materials, the U.S. Environmental Protection Agency (EPA), U.S. Department of Transportation (DOT), and U.S. Occupational Health and Safety Administration (OSHA). The regulations governed under these agencies are summarized below.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is the lead agency responsible for enforcing federal laws and regulations pertaining to hazardous materials that affect public health and the environment. The major federal laws and regulations enforced by the U.S. EPA include the: Resource Conservation and Recovery Act (RCRA); Toxic Substances Control Act (TSCA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); and Superfund Amendments and Reauthorization Act (SARA).

Resource Conservation and Recovery Act

In 1974, RCRA was enacted to provide a general framework for the U.S. EPA to regulate hazardous waste from waste generation to ultimate disposal. In accordance with RCRA, facilities that generate, treat, store, or dispose of hazardous waste are required to properly manage wastes from “cradle to grave.”

Toxic Substances Control Act

In 1976, Toxic Substance Control Act (TSCA) was enacted to provide the U.S. EPA authority to regulate the production, importation, use, and disposal of chemicals that pose a risk of adversely affecting public health and the environment, such as polychlorinated biphenyls (PCBs), asbestos-containing materials, and lead- based paint. TSCA also gives the U.S. EPA authority to regulate the cleanup of sites contaminated with specific chemicals, such as PCBs.

Comprehensive Environmental Response, Compensation and Liability Act

In 1980, CERCLA, commonly known as "Superfund," was enacted to ensure that a funding source would be available for the U.S. EPA to clean up uncontrolled or abandoned hazardous materials release sites that pose a risk of adversely affecting public health and the environment. Prohibitions and requirements regarding closed or abandoned hazardous waste sites and liability standards for responsible parties were also established by CERCLA. In 1986, SARA amended CERCLA to increase the Superfund budget, modify contaminated site cleanup criteria and schedules, and revise settlement procedures.

U.S. Department of Transportation

While the U.S. EPA regulates overall use and cleanup of hazardous materials, the U.S. Department of Transportation (DOT) is the federal administering agency responsible for hazardous materials transportation regulations. The DOT Office of Hazardous Materials Safety oversees a national safety program to minimize the risks related to commercial transportation of hazardous materials. The federal hazardous materials transportation law (49 USC 5101 et seq.) is the basic statute regulating hazardous materials transportation in the United States.

Vehicles transporting hazardous materials are required to prepare and implement a Response Plan that describes health and safety training, equipment testing, and response actions to prevent or mitigate a release of petroleum during transportation. Motor carriers transporting hazardous materials are subject to package marking, labeling, and placarding requirements that identify the hazards associated with the materials being transported. Health and safety training and emergency response information must also be maintained by motor carriers transporting hazardous materials to prevent or mitigate a release of hazardous materials. In California, the California Department of Transportation (Caltrans) is the implementing agency for DOT laws and regulations.

U.S. Occupational Health and Safety Administration

The U.S. Occupational Health and Safety Administration (OSHA) is the federal administering agency responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. Under OSHA jurisdiction, the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations require training and medical supervision for workers at hazardous waste sites. Additional regulations have been developed for construction workers regarding exposure to lead and asbestos during construction activities.

Regulations for asbestos are contained in Occupational Safety and Health Administration (OSHA) Standards-29 CFR. Regulations for lead-based paint are contained in the Lead-Based Paint Elimination Final Rule 24 CFR 33, governed by the U.S. Housing and Urban Development (HUD).

State

In California, the U.S. EPA has granted most enforcement authority of federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). Under the authority of Cal/EPA, the Department of Toxic Substances Control (DTSC) or the San Francisco

Bay Regional Water Quality Control Board (RWQCB) is responsible for overseeing the cleanup of contaminated sites in the vicinity of the Project in those cases where there is evidence of contamination of ground or surface water.

Cal/EPA has also granted responsibilities to local agencies, such as the Contra Costa County Health Services Hazardous Materials Programs, for implementation and enforcement of hazardous material regulations under the Certified Unified Program Agency (CUPA).

Hazardous Materials Release Sites

Known or suspected contaminated sites under DTSC or RWQCB oversight are identified by Cal/EPA pursuant to Government Code section 65962.5. The provisions of Government Code section 65962.5, which are commonly referred to as the Cortese List, required agencies including the DTSC, the RWQCB, the Department of Health Services, and the California Integrated Waste Management Board to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, and/or hazardous materials releases to the Secretary of Environmental Protection. The list is no longer actively assembled, however individual agencies do still make their databases accessible.

Title 22 of the California Code of Regulations

In California, Title 22 of the California Code of Regulations (CCR) addresses hazardous materials and wastes. The Hazardous Waste Control Law of 1976 is the seminal hazardous waste control law in California. The Hazardous Materials Release Response Plans and Inventory Law of 1986 (Business Plan Act) governs hazardous materials handling, reporting requirements, and local agency surveillance programs. Section 65962.5 of the Government Code directs the Department of Toxic Substances Control (DTSC) to compile a list of all hazardous-waste facilities subject to corrective action pursuant to Section 25187.59 of the California Health and Safety Code.

Regional Water Quality Control Board

Within Cal/EPA, the Regional Water Quality Board (RWQCB) is authorized by the Porter-Cologne Water Quality Control Act of 1969 to protect the waters of the State. The RWQCB may act as the lead agency and provide oversight for sites where the quality of groundwater or surface water is threatened. A water quality certification from the RWQCB would be required for site improvements that have the potential to impact water quality such as daylighting creeks. The RWQCB would also have jurisdiction of contaminated water (including contaminated groundwater from investigation/remediation activities or dewatering during construction) storm drains, surface water, or land. A permit would be required from the local sanitary treatment facility if water were discharged to the sanitary sewer.

Department of Toxic Substances Control

In California, the Department of Toxic Substances Control (DTSC) within Cal/EPA is authorized by EPA to enforce and implement federal hazardous waste laws and regulations. California regulations pertaining to hazardous materials equal or exceed federal regulations. Most State

hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). DTSC provides cleanup and action levels for subsurface contamination; these levels are equal to, or more restrictive than, federal levels. DTSC has developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

In California, the U.S. EPA has granted most enforcement authority of federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). Under the authority of Cal/EPA, the Department of Toxic Substances Control (DTSC) or the RWQCB is responsible for overseeing the cleanup of contaminated sites in the vicinity of the Project in those cases where there is evidence of contamination of ground or surface water.

Cal/EPA has also granted responsibilities to local agencies such as the Contra Costa County Health Services Hazardous Materials Program for implementation and enforcement of hazardous material regulations under the Certified Unified Program Agency (CUPA).

California Office of Emergency Services

The California Office of Emergency Services (OES) State Warning Point acts as the Governor's 911 Dispatch Center. The State Warning Point, under federal SARA Title III requirements, must be notified as soon as possible of possible spills and releases. OES complies Statewide statistics on spills and releases, and shall dispatch other regional, State, and federal agencies to the scene, if necessary.

Worker Health and Safety

Worker health and safety are protected by federal and state laws and regulations. The Occupational Health and Safety Administration (OSHA) is the federal administering agency for worker health and safety regulations. The federal OSHA is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety. Under OSHA jurisdiction, the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations require training and medical supervision for workers at hazardous waste sites. Additional regulations have been developed for construction workers regarding exposure to lead and asbestos during construction activities.

The California Department of Industrial Relations, Division of Occupational Safety and Health (DOSH), enforces state regulations and supervision of work places in California that are not under direct federal jurisdiction. State worker health and safety regulations applicable to construction workers include training requirements for hazardous waste operations and emergency responses, and lead and asbestos regulations that equal or exceed their federal counterparts.

Wildland Fire Hazards

State policies regarding wildland fire safety are administered by the Office of the State Fire Marshal and the California Department of Forestry and Fire Protection (CalFIRE).

Construction contractors are required to comply with the following requirements in the California Public Resource Code (PRC) during construction activities at any sites with forest, brush, or grass-covered land:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442).
- Appropriate fire suppression equipment must be maintained during the highest fire danger period – from April 1 to December 1 (PRC Section 4428).
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire suppression equipment (PRC Section 4427).
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (PRC Section 4431).

Emergency Preparedness Plans

California is divided into three California Emergency Management Agency (Cal OES) Administrative Regions – Inland, Coastal and Southern, which are further divided into six mutual aid regions. The Regional Level operates out of the Regional Emergency Operations Center (REOC). Contra Costa and Alameda counties are part of the Coastal Region, Mutual Aid Region II. Cal OES regions have the responsibility to carry out the coordination of information and resources within the region and between the Standardized Emergency Management System (SEMS) state and regional levels to ensure effective and efficient support to local response. The regions serve as the conduit for local and regional perspective and provide a physical presence for Cal OES functions at the local level in all phases of emergency management.

Regional and Local

Contra Costa County Hazardous Materials Program

The Contra Costa County Hazardous Materials Program is the CUPA for all areas of Contra Costa County, including portions of the Project area. The Hazardous Materials Program provides comprehensive environmental regulatory compliance inspection services to protect human health and the environment.

Applicable Policies of Agencies with Jurisdiction over the Project

City and county general plan policies provide guidance on District parklands from planning through project implementation. Relevant city and county general plan policies pertaining to hazards and hazardous materials in the Project area are described in *Table 3.8-1, City and County General Plan Hazard Hazardous Materials Goals and Policies.*

TABLE 3.8-1
CITY AND COUNTY GENERAL PLAN HAZARDS AND HAZARDOUS MATERIALS GOALS AND POLICIES

City of Oakland Goals and Policies	Project Consistency
The City of Oakland General Plan includes policies and actions governing hazards and hazardous materials within the Safety Element (see Policies PS-1, FI-3, HM-1, HM-2, and HM-3). The policies state the City of Oakland's intent to minimize the potential risks to human and environmental health from natural and man-made disasters, wildland fires, and hazardous materials releases.	Consistent with the City of Oakland's General Plan policies, the Project would adhere to current federal, state, and local requirements to minimize risk of hazards; hazardous material accidents; and wildland and urban fires.
Policies from the City of Oakland General Plan's Conservation Element regarding hazards and hazardous materials are also described below: Policy CO-53: Control of urban runoff. Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program, to: … (b) reduce water pollution associated with hazardous spills, runoff from hazardous material areas, improper disposal of household hazardous wastes, illicit dumping, and marina "live-aboards".	Consistent with the City of Oakland's General Plan policies governing hazards and hazardous materials, Project implementation would include preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board and the District Technical Specifications and Supplemental Conditions.
Contra Costa County Goals and Policies	**Project Consistency**
The Contra Costa County General Plan's Safety Element includes goals and policies governing hazards and hazardous materials that are pertinent to the proposed project area (see Goal 10-I and Policies 10-61 through 10-70). The policies aim to states the county's intent to provide public protection from hazards associated with the use, transport, treatment and disposal of hazardous substances.	Consistent with the Contra Costa County's General Plan policies governing hazards and hazardous materials, the Project would adhere to current federal, state, and local requirements to minimize risk of hazards; hazardous material accidents; and wildland and urban fires.
City of Orinda Goals and Policies	**Project Consistency**
The Safety Element within the Environmental Resources chapter of the City of Orinda General Plan includes policies regarding hazards and hazardous materials that are pertinent to the proposed Project area (see Guiding Policies 4.2.1 A-F and Implementing Policies 4.2.2 A-Q). The policies state the City's intent to provide information for the protection of the community from unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, and dam failure; slope instability leading to landslides, subsidence and other geologic hazards; flooding; hazardous material accidents; and wildland and urban fires.	Consistent with the City of Orinda's General Plan, the Project would adherence to current federal, state, and local requirements that incorporate industry standard measures to minimize surface rupture, ground shaking, ground failure, and dam failure; slope instability leading to landslides, subsidence and other geologic hazards; flooding; hazardous material accidents; and wildland and urban fires.

East Bay Regional Park District Mission and Policies

2013 Master Plan

The Master Plan adopted in 2013 defines the vision and mission of District with the core mission stated as follows:

> *"Preserve a rich heritage of natural and cultural resources and provide open space, parks, trails, safe and healthful recreation and environmental education. An environmental ethic guides the District in all of its activities."*

Master Plan Goals and Policies

The Master Plan policies directed at public and employee safety and the protection of site resources, include policies that are intended to manage fuels to slow the spread of fire along the urban park boundaries and protect and enhance the natural plant communities as described in *Table 3.8-2, District Master Plan Hazards and Hazardous Materials Goals and Policies* below.

TABLE 3.8-2
2013 DISTRICT MASTER PLAN HAZARDS AND HAZARDOUS WASTE GOALS AND POLICIES

Goals and Policies	Project Consistency
NRM6: The District will evaluate exotic eucalyptus, Monterey pine and cypress plantations, shrubland or woodland area occurring along the wildland/urban interface on a case-by-case basis for thinning, removal and/or conservation to a less fire-prone condition, following the methods laid out in the furls Management Plan. The District will minimize the widespread encroachment of exotic and/or invasive species such as coyote brush, poison oak and broom, etc. on parkland and work to preserve native pants where feasible.	Consistent with Master Plan Policy NRM6, the Project would continue with ongoing resource management programs including *The East Bay Regional Parks District Wildfire Hazard Reduction and Resource Management Plan (2010).*
KEP4: The District will participate in efforts to protect scenic or cultural resources, develop larger, multi-agency open space preserves, provide recreational opportunities, protect agricultural use, avoid hazards and plan for appropriate urban growth boundaries….	Consistent with Master Plan Policy KEP4, the Project would identify Special Protection Geologic and Biologic Features and would manage the established Western Hills Conservation Easement in accordance provisions with the Long Term Management Plan for this conservation easement.

Ordinance 38

Portions of EBRPD Ordinance 38, Sections 403-900 pertain to hazards and hazardous materials. These sections are summarized in *Table 3.8-3, Applicable 38 Sections* below.

TABLE 3.8-3
RELEVANT ORDINANCE 38 SECTIONS

Section 403.1 Restriction - Firearms and Dangerous Weapons: This section states that, "Except as provided in subsection 403.2 of this Section, no person shall have in his/her possession within the District, nor shall any person fire or discharge, or cause to be fired or discharged, across, in, or into any portion of the District any gun or firearm, spear, bow and arrow, cross bow, sling shot, air or gas weapon, or any other dangerous weapon. Further, no person shall possess, discharge or use any other dangerous weapon, including practice swords, spears, nunchakus and throwing stars, regardless of intent."
Section 404. Fires: This section states that, "No person shall build, light or maintain any open outdoor fire on park property except in those facilities or areas provided and so designated for that purpose. Exceptions to this requirement must be obtained in writing from the District Fire Chief. No person shall leave a fire unattended on District parklands."
Section 404.2 Restriction. Fires: This section states that, "No person shall smoke or build fires of any kind in areas where prohibited and posted during declared fire season. Extreme conditions may cause the elimination of all open flames for any purpose, or the evacuation or closure of a park."
Section 404.3 Smoke-Free Parks. This section states that, "Smoking is prohibited in the East Bay Regional Park District except in overnight campsites. "Smoking" means inhaling, exhaling, burning or carrying any lighted pipe, cigar, cigarette, weed, plant or other combustible organic or chemical substance, the smoke from which is specifically designed or intended to be inhaled or drawn into the nose or mouth. In addition, "smoking" for the purpose of this Ordinance includes the use of any vapor device, of any product name or descriptor, which releases gases, particles or vapors into the air as a result of combustion, electrical ignition or vaporization intended to be drawn into the nose or mouth (excluding any United States Food and Drug Administration approved nebulized medication) (added 4/16)."
Section 900.3.- Household or Industrial Materials: This section states that, "No person, firm, or business shall bring household or industrial garbage, trash or waste materials into any lands owned or operated by the District for the purpose of placing such materials into any trash can, dumpster, or receptacle provided by the District."

District Standard Technical Specifications and Supplementary Conditions

The District's Standard Technical Specifications and Supplementary Conditions contain provisions that are intended to ensure, among other things, the safety of the construction workers, staff and the public, and the protection of wildlife, site resources, and water quality during construction and operation of site amenities. Relevant sections are provided in *Table 3.8-4, Relevant Technical Specifications* below.

TABLE 3.8-4
RELEVANT TECHNICAL SPECIFICATIONS

Technical Specifications
• Storage of equipment and vehicles shall be a minimum of 100 feet from the top of the creek bank. • Fueling of equipment and vehicles shall take place a minimum of 200 feet from the top of the creek bank. • The Contractor shall take all measures to prevent contamination of lakes, ponds, creeks and drainage swales. • Contractor shall prepare, submit and implement a Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP). No site work shall begin until the District approves the SWPPP or WPCP. A WPCP is only applicable to projects where the soil disturbance from work activities will be one of the following: 1) less than 1 acre, or 2) less than 5 acres if the project has an Environmental Protection Agency Small Construction Project Erosivity Waiver (Erosivity Waver). All other projects require a SWPPP. • All items, including debris, noted to be removed shall become the property of the Contractor and shall be disposed of off-site in a legal manner. Location of dump and length of haul shall be the Contractor's responsibility. • Upon completion of removal work, the Contractor shall promptly dispose of any debris resulting from removal operations and shall leave the site in a clean, safe condition, and ready to receive subsequent work. Where applicable, final grades should provide for positive drainage. Any damage resulting from removal operations shall be repaired by the Contractor to the satisfaction of the District Inspector.
Supplementary Conditions
• The California State Water Resources Control Board, San Francisco Bay Region, Oakland, California has jurisdiction over the project stormwater discharges within the Project area. Accordingly, the following actions will be required prior to initiating implementation of the Project: 1) the District will submit a Notice of Intent (NOI) and obtain a waste discharger identification number (WDID) from the above agency; 2) a Receipt of NOI will be obtained by the District from SWRCB prior to the start of construction; and 3) the Contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board No. 92-08 DWQ for discharges of stormwater runoff associated with construction activity. • The Contractor shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327330) as supplemented by Department of Labor regulations (29 CFR Part 5).

East Bay Regional Parks District Wildfire Hazard Reduction and Resource Management Plan

The District is a major participant in wildfire reduction programs, especially in the Oakland-Berkeley hills. The District has maintained firefighting capabilities since its formation in 1934. In 2010 the Board of Directors approved a *Wildfire Hazard Reduction and Resource Management Plan* (*Hazard Reduction Plan)* specifically directed at the urban interface, the boundary between open space parklands and adjacent residential neighborhoods, including areas contained within the Project area (Refer to *Figure 3.8a, Recommended Treatment Areas in Sibley Volcanic Preserve* and *Figure 3.8b, Recommended Treatment Areas in Huckleberry Botanic Preserve* for the location of treatment areas recommended in the *Hazard Reduction Plan* for the Project Area).

The *Hazard Reduction Plan* was developed to reduce the risks from wildfires in identified high hazard areas on District parklands through fuel reduction actions that are conducted in a manner that mitigates adverse environmental effects and implements resource and habitat management goals. This plan provides basic guidelines for protecting environmental values, enhancing habitat,

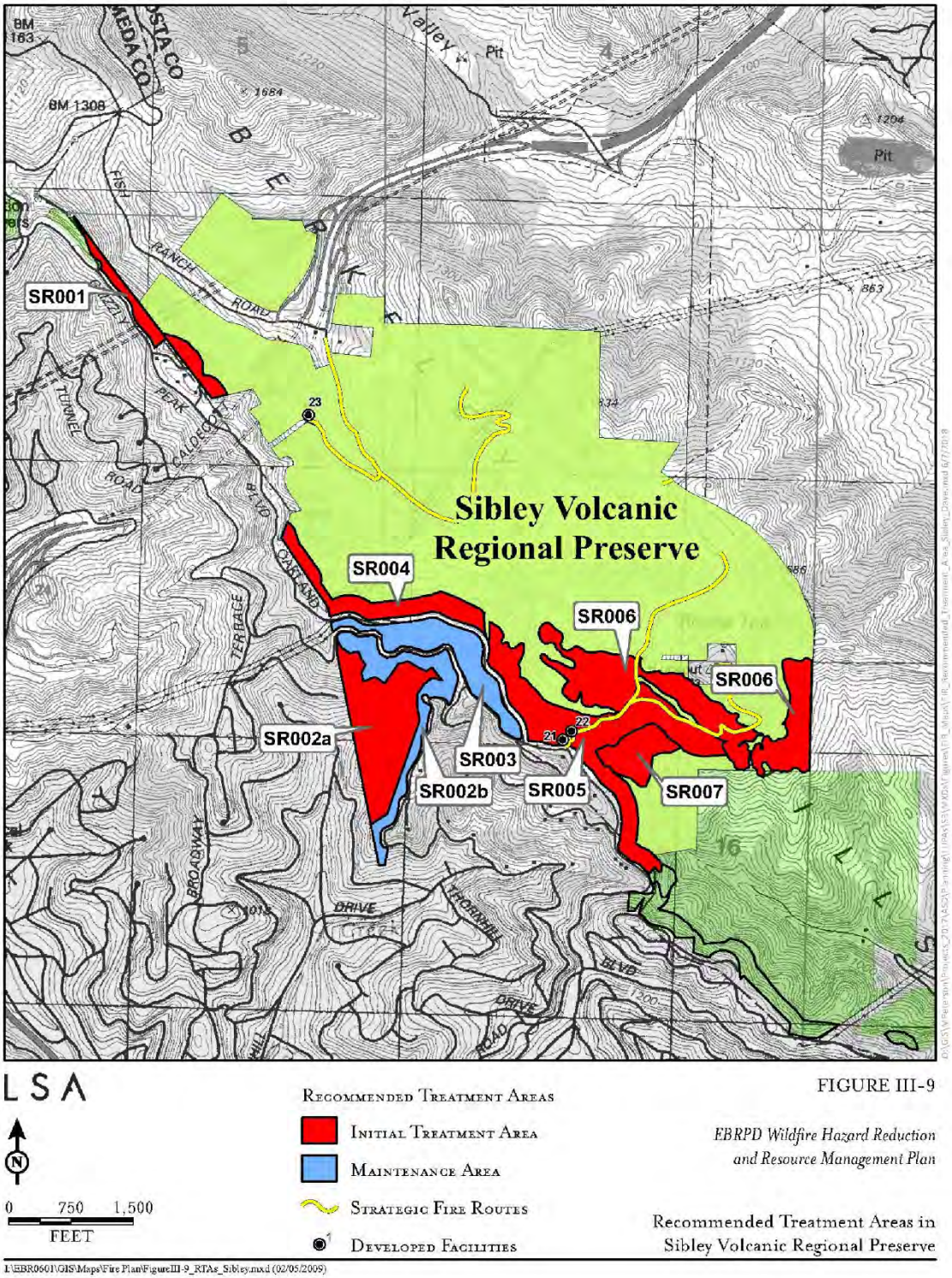

FIGURE 3.8-1A RECOMMENDED TREATMENT AREAS IN SIBLEY VOLCANIC PRESERVE (Source: EBRPD Wildfire Hazard Reduction and Resource Management Plan)

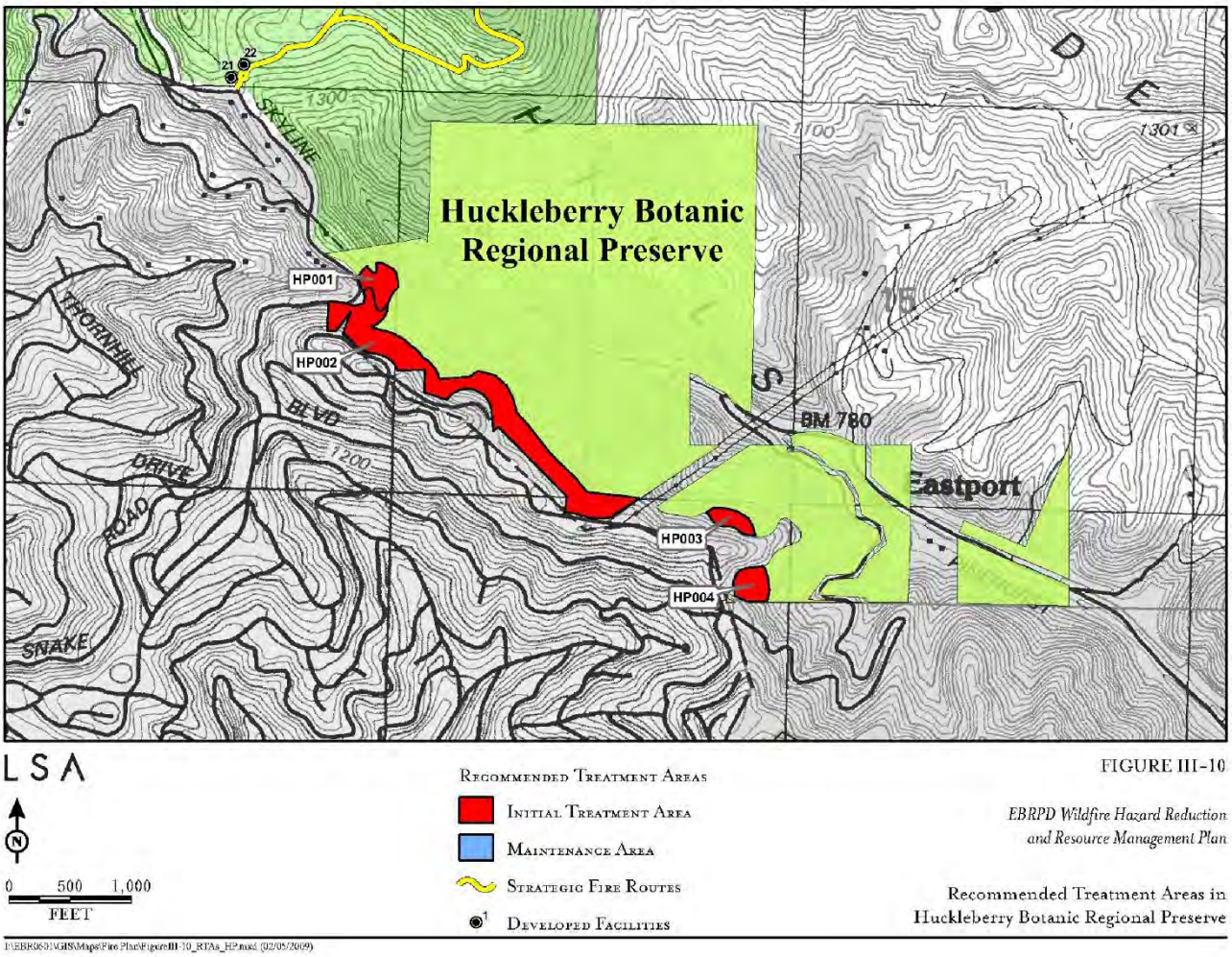

FIGURE 3.8-1B RECOMMENDED TREATMENT AREAS IN HUCKLEBERRY BOTANIC REGIONAL PRESERVE (Source: EBRPD Wildfire Hazard Reduction and Resource Management Plan)

East Bay Regional Park District

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Robert Sibley Volcanic Regional Preserve

restoring native vegetation and setting priorities for treatments while reducing wildfire hazards. It includes specific goals, objectives, guidelines, and standard Best Management Practices (BMPs) to inform and guide wildfire hazard reduction and resource management activities that will be carried out by the District and its contractors. The plan is two-pronged aimed at slowing the spread of fire along the urban park boundaries and protecting and enhancing the natural plant communities, especially the habitat for endangered plant and animal species such as pallid manzanita and Alameda whipsnake.

To slow the spread of wildfire, the District maintains a fuel break throughout the East Bay Hills. This is an area of thinned vegetation between parklands and homes intended to both slow the advance of fire and give firefighters a place to make a stand. The fuel break is maintained using a variety of tools including brush clearing by hand, tree removal by heavy equipment, prescribed fire under careful control, and grazing [District Master Plan, Resolution 2010-4-103].

Fire Weather Operating Plan – Controlling Use in High Fire Hazard Areas

In the San Francisco Bay Area, the District implements a District-wide system of use restrictions and park closures. The system allows the District to respond to the changing patterns of weather and fuel conditions posing fire threats to park users, resources, and neighbors. Calculating fire danger involves review of factors that contribute to the possibility of a wildland fire ignition, and, once established, a fire's resistance to suppression. These include:

- Potential for an ignition source to reach the fuel
- Condition of the fuel
- Weather conditions at the fire site
- Topographic features at the fire site.

Fire weather in the East Bay Regional Parks is monitored by a network of remote automated weather stations operated by the District and other local agencies. The stations transmit weather data hourly. This data is processed through the National Fire Danger Rating System (NFDRS) via the U.S. Department of Agriculture's National Computer Center in Kansas City. The data processed through the NFDRS provides forecasts that are used to determine if park closures or restrictions will be invoked. Additionally, the National Weather Service may issue a "fire weather watch," or, in extreme conditions, a "fire weather warning." The District's communications center notifies the Fire Chief, Fire Captain, the on-duty Police Commander and the Chief of Park Operations upon the issuance of high fire danger warnings. The communications center also issues an "all-call" on the District's radio system to notify park staff of impending fire weather conditions.

The District's General Manager or designee is authorized by law to impose use restrictions or close lands to ensure the health and safety of persons and to protect the lands of the District and its neighbors during high risk fire weather.

Use restrictions during periods of high fire danger range from restricting open campfires to the closure of the park. When parks are closed due to high fire danger, organized groups may remain

in the parks only if directly supervised by park staff. Special Fire Weather Patrols are instituted to contact park visitors and provide fire safety information, or, if necessary, assist in closing the park until the high fire danger subsides.

Emergency Operations Plan

The East Bay Regional Park District Emergency Operations Plan (EOP) plan applies to any extraordinary emergency associated with any hazard, natural or human-caused, which may affect the East Bay Regional Park District and that generates situations requiring planned, coordinated responses by multiple agencies and jurisdictions. It is designed to guide users through the four phases of emergency management: preparedness, response, recovery, and mitigation and should be used in conjunction with applicable local contingency plans, the Operational Area Emergency Operation Plan and State Emergency Plan.

Pesticide Use and Storage

Pest management activities in the District are performed in compliance with applicable state and federal law and in accordance with the Pest Management Policies and Practices (EBRPD 1987). The Pest Management Policies and Practices manual describes how the District implements its Integrated Pest Management program, which includes a comprehensive methodology for: evaluating animal and plant pest problem areas; choosing the appropriate treatment; and conducting treatments safely for applicators, the general public and the environment. The District follows all regulations for the use, storage and disposal of pesticides as regulated by the California Department of Pesticide Regulation (CaDPR) and administered through the Contra Costa and Alameda County Departments of Agriculture.

3.8.2 Existing Conditions

Hazardous Materials

Definitions

Materials and waste are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability); corrode other materials (corrosivity), or react violently, or explode or generate vapors when mixed with water (reactivity). The term “hazardous material” is defined in the State Health and Safety Code (Chapter 6.95, Section 25501[o]) as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

A hazardous waste, for the purpose of this EIR, is any hazardous material that is abandoned, discarded, or recycled, as defined in the State Health and Safety Code (Chapter 6.95, Section 25125). The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

Potential Receptors/Exposure

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being the potential pathway for human exposure. Exposure pathways include external exposure, inhalation, and ingestion of contaminated soil, air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health effects, from short term acute symptoms to long-term chronic effects. Potential health effects from exposure can be evaluated in a health risk assessment. The principle elements of exposure assessments typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site;
- Identification of potential exposure pathways;
- Identification of potential exposure scenarios;
- Calculation of representative chemical concentrations; and
- Estimation of potential chemical uptake.

Recreation Uses

Located immediately adjacent to the major population centers of western Alameda County and central Contra Costa County, the Project Area is characterized as an area with significant resources that offer an array of recreation and interpretive education opportunities. Recreational trails offer the primary way to experience the diversity of the area and serve as the primary recreational use with the Skyline Trail (Bay Area Ridge Trail, Anza Trail), which traverses the Project area in north-south trajectory, providing connections to several District regional parks along the East Bay Hills ridgelines. Trail uses include hiking, jogging, equestrian use, cycling, and dog-walking and may include multi-day treks between parks with stays in campsites extending from Chabot to Tilden Regional Parks in the East Bay Hills.

Past Uses

The McCosker family farmed a portion of the land for their own purposes and planted ornamental trees and shrubs in the lower areas of the property. A paving business and rock quarry/rock crushing mill was active on the property from the 1958 to the 1971. Development during this period included residential home sites, equipment yards, and underground diesel fuel tanks. Most of the sheds, storage containers, and other structures related to former use of the property were removed prior to the District assuming ownership. A former construction business operated within the Fiddleneck Field area at the site and included the use of six underground fuel storage tanks; four 20,000-gallon tanks and two 10,000-gallon tanks. These tanks formerly contained diesel fuel but were cleaned in accordance with Contra Costa County Environmental Health Division (CCEHD) standards prior to the land being transferred to the District according to the *Phase One Environmental Site Assessment, McCosker Land and Cattle Company Property, Canyon California* (Engeo, 2001).

Soil and Groundwater Contamination

Underground fuel storage tanks (USTs) are a common source of contamination in subsurface soils and groundwater. Until the mid-1980s, most USTs were made of single-walled bare steel, which can corrode over time and result in leakage. Faulty installation or maintenance procedures including inadvertent overfilling, can also lead to UST leakage, as well as to potential releases associated with spills.

According to a Phase I Environmental Site Assessment that was conducted for the site, the six tanks were no longer used for storage of fuel, but were cleaned and repurposed to store water for the Moraga Fire Department (Engeo, 2001). Even so, removal of USTs requires oversight by the local responsible agency known as the Certified Unified Program Agency (CUPA), described above.

The overall findings of the Phase I Environmental Site Assessment concluded that there was no evidence of soil or groundwater impairments associated with prior uses of the McCosker property (Engeo, 2001). In addition to the underground storage tanks mentioned above, there was also mention of an above ground fuel storage tank located southeast of the large metal equipment shed. The tank was found to be empty at that time and there is no mention of any observed surface soil staining that would might indicate a release (Engeo, 2001).

As part of a more recent preliminary assessment of soils that would be encountered during the proposed excavation activities, a limited soil testing program was conducted at the site (TRC, 2016). Four soil samples were collected at depths ranging from 2.5 to 9 feet below ground surface along the McCosker Creek alignment. The samples were analyzed for petroleum hydrocarbons, metals, pesticides, volatile organic compounds, and asbestos. The findings of the laboratory analysis concluded that the soil samples did not contain any elevated levels of the contaminants that were analyzed and the soils would be suitable for reuse on site (TRC, 2016).

Urban Interface - Wildfire

The area surrounding the Project area is comprised of wildland-urban interface areas located on steep slopes within the East Bay Hills. The steep slopes and ridges of the East Bay Hills define the boundaries between the Preserve and Western Hills sub-areas and separate the City of Oakland from the Lamorinda area. <u>These areas are located in the State Responsibility Area (SRA) and classified as a “Very High Fire Hazard Severity Zone” (VHFHSZ) as rated by CalFIRE as the</u> ~~These~~ topographic conditions at ~~the~~ <u>this</u> urban interface <u>zone</u>, combined with hot and dry periods during late summer and fall, seasonal wind patterns, and flammable vegetation, result in high fire hazard levels in and adjacent to the Project area during the summer-fall fire season.

3.8.3 Research Methodologies

This impact analysis focuses on potential effects of hazards, hazardous materials and public health associated with the Project. The evaluation considers current conditions in the Project area, findings of regulatory agency database searches, review of hazardous materials investigation reports, site reconnaissance, applicable regulations and guidelines, and Project construction and operation.

3.8.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G, Section VIII, a project would cause adverse impacts related to hazards and hazardous materials if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;

d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;

e) Be located within an area covered by an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area;

f) Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area;

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

h) Expose people or structures to a significant risk of loss, injury, or death involving wildfires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below:

c) Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste Within 0.25 Mile of an Existing or Proposed School. The Project elements would not include any hazardous emissions and would not be located within 0.25 mile of an existing or proposed school. Therefore, the criteria related to safety hazards near schools are not applicable to the Project and are not discussed further in this EIR.

d) Be Located on a Site that is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5 and, as a Result, Create a Significant Hazard to the Public or the Environment. According to the environmental database review, there is only one hazardous materials release case located in the Project Area. The Round Top Radio Relay site is on record for an investigation of a leaking underground storage tank (SWRCB, 2017). However, the investigation and cleanup for this site was completed and the case was closed requiring no further action in 1994. Therefore, for the purposes of this

analysis, the Project would not create a significant hazard to the public or environment as a result construction or operation and maintenance activities and this criterion is not discussed further in this EIR.

e, f) Be Located within an Airport Land Use Plan or in the Vicinity of a Private Airstrip. The Project would not be within an area covered by an airport land use plan, and is located more than two miles from any public airport or private airstrip. Therefore, the criteria related to safety hazards near airports and private airstrips are not applicable to the Project and alternatives and are not discussed further in this EIR.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Project site would include some improvements to existing roadways which could only aid in an emergency response or evacuation situation. There would be no road closures or other physical interferences to emergency or evacuation response plans resulting from the Project. Standard District emergency response procedures described in *Section 3.14, Public Services* would remain in place. Therefore, the criteria related to safety hazards near schools are not applicable to the Project and are not discussed further in this EIR.

3.8.5 Impact Analysis

Impact HAZ-1: Project construction could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (Less than Significant with Mitigation).

Construction

Preserve Sub-area

Expanded parking construction activities would not include use of substantive quantities of hazardous materials. Regardless, all construction activities would be required to adhere to NPDES Construction General Permit requirements. These requirements would include implementation of Best Management Practices (BMPs) that would include measures to minimize the accidental release of any hazardous materials or waste.

McCosker Sub-area

Creek restoration activities would involve excavating fill material, daylighting the creek channel, removing the existing metal and concrete pipes and drainage structures, constructing in-stream and near-stream enhancements, removing trees and planting wetland and riparian vegetation along the daylighted creek channel. Sub-surface deleterious materials, including the corroded metal pipes, concrete, abandoned utilities, and aggregate road base material that may contain hazardous materials would need to be excavated and removed from the site and transported to an appropriate landfill site. Soils would be reused on-site.

Prior to initiating fill placement fill areas, the Fiddleneck Field recreation area would be cleared and grubbed of surface and subsurface deleterious matter including vegetation, aggregate road-base material, concrete and abandoned utilities. Six underground storage tanks, including four 20,000-gallon tanks and two 10,000-gallon tanks that used to contain diesel fuel remaining from

the prior owner's construction business would be removed in accordance with Contra Costa County Environmental Health Division (CCEHD) requirements.

Excavation and fill activities associated with the creek restoration work and construction of the recreation pads may involve reuse of soil that could contain concentrations of potentially hazardous materials.

Review of soil samples retrieved from borings found no reportable quantities of hazardous materials associated with the six underground storage tanks. The vent and product piping lines were cleaned to CCEHD standards. However, there is the potential for construction activities such as daylighting creeks, trenching for utility installation, construction of recreation sites, and expansion and repair of staging areas and roads to result in exposing construction workers, staff, and future site visitors to soils containing chemicals of potential concern in near-surface and or fill materials.

To ensure worker, staff and visitor safety soil uncovered during this phase of work would be tested and remediated as required to ready the site for public recreation activities. Once excavated, these materials would be removed from the site and deposited at an approved off-site disposal facility, or if free of hazardous material, stockpiled for reuse, as appropriate and approved by the District.

Construction activities would require the use of certain hazardous materials such as fuels, oils, solvents, and glues. Inadvertent release of large quantities of these materials into the environment could adversely impact workers, the public, soil, surface waters, or groundwater quality. The use of construction Best Management Practices implemented as part of a Storm Water Pollution Prevention Plan (discussed further in *Section 3.9, Hydrology and Water Quality*) as required by the National Pollution Discharge Elimination System General Construction Permit would minimize the potential adverse effects to workers, the public, groundwater and soils. These could include the following:

- Establish a dedicated area for fuel storage and refueling activities that includes secondary containment protection measures and spill control supplies;
- Follow manufacturer's recommendations on use, storage and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils.
- Properly dispose of discarded containers of fuels and other chemicals.

In general, aside from refueling needs for heavy equipment, the hazardous materials typically used on a construction site are brought onto the site packaged in consumer quantities and used in accordance with manufacturer recommendations. The overall quantities of these materials on the site at any one time would not result in large bulk amounts that, if spilled, could cause a significant soil or groundwater contamination issue. Spills of hazardous materials on construction

sites are typically localized and would be cleaned up in a timely manner. As described above, refueling activities of heavy equipment would be conducted in a controlled dedicated area complete with secondary containment and protective barriers to minimize any potential hazards that might occur with an inadvertent release. Given the required protective measures (i.e., Best Management Practices) and the quantities of hazardous materials typically needed for construction projects such as the Project, the threat of exposure to the public or contamination to soil and/or groundwater from routine use of construction-related hazardous materials is considered a *less than significant impact*.

Project Area-wide - Trails

Trail construction activities would not include use of substantive quantities of hazardous materials. Regardless, all construction activities would be required to adhere to NPDES Construction General Permit requirements. These requirements would include implementation of BMPs that would include measures to minimize the accidental release of any hazardous materials or waste.

Operation

Once construction activities are completed, the District will continue to manage the Project area to benefit biological resources, including conducting pest management activities in compliance with applicable state and federal law and in accordance with the direction contained within the *Master Plan 2013, Wildland Management Policies and Guidelines* (EBRPD 1992 and 2001) and *Pest Management Policies and Practices* (EBRPD 1987) as well as all regulations as dictated by the California Department of Pesticide Regulation. The *Pest Management Policies and Practices* manual describes how the District implements its Integrated Pest Management program, which includes a comprehensive methodology for: evaluating animal and plant pest problem areas; choosing the appropriate treatment; and conducting treatments safely for applicators, the general public and the environment. District pest management activities include the use of herbicides and pesticides to prevent pests, such as pathogens, insects, and invasive plants and animals, from causing harm to desired natural resources, as well as unacceptable safety, health, aesthetic, economic or structural damage to District resources.

The District's Integrated Pest Management (IPM) program, which is housed in the District's Stewardship Department, provides training, education and a process through which recreational, structural and public health pests may be controlled by District staff. Species requiring control are determined by park need, recreational focus and threats to listed species. The goal of the District's IPM practices is to manage pest species in the most effective and safe manner possible for the public, staff and environment to optimize recreational experiences and ecosystem functions.

The relatively small minor quantities of hazardous materials such as petroleum products and pesticides that the Operations staff retains on site to perform IPM functions are kept in a labeled and locked fire-proof cabinet in accordance with the District's Best Management Practices for the safe storage and handling of these materials. Therefore, the threat of exposure to the public or

contamination to soil and/or groundwater from routine use of construction-related hazardous materials is considered a *less than significant impact*.

As, the Project includes excavation activities that could expose construction workers to hazards in the McCosker Sub-area including: 1) excavation associated with the creek restoration work and construction of the recreation pads may involve reuse of soil that could contain concentrations of potentially hazardous materials; and work near live and abandoned utility lines, *mitigation is required*.

The following mitigations would minimize the potentially hazardous conditions associated with these site excavation activities to below the threshold of significance.

Mitigation Measure HAZ-1a: McCosker Sub-area - Soil Contaminants

Potential exposure of construction workers to contaminants in soils during grading and construction in areas of McCosker Sub-area shall be minimized through the requirement to test for contaminants and establish and implement a remediation plan as part of the grading. If contaminated soils are found to be present in the construction areas, the District shall complete remediation or treatment prior to the institution of grading. The District shall be responsible for notifying all construction contractors undertaking tank removal and grading activities the potential for exposure to contaminated soils and require adherence to all applicable federal, state, and local standards.

Mitigation Measure HAZ-1b: Project-wide - Health and Safety Plan

All work shall be performed in accordance with a Site Health and Safety Plan that includes: 1) methods to assess risks prior to starting onsite work; 2) procedures for the management and disposal of waste soils generated during construction activities or other activities that might disturb contaminated soil; 3) monitoring requirements; 4) stormwater controls; 5) record-keeping; and; emergency response plan.

Mitigation Measure HAZ-1c: Project-wide Utility Avoidance

Prior to any excavation activities, the Contractor shall coordinate with a utility line locator to ensure avoidance of utility lines.

Significance after Mitigation: *Less than significant*.

Impact HAZ-2: Project construction could result in a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)

During construction, hazardous materials such as petroleum products, solvents, paints, oils, and herbicides may be used and stored on-site. As described above, the contractor would be required to adhere to construction Best Management Practices implemented as part of a Storm Water Pollution Prevention Plan (discussed further in *Section 3.9, Hydrology and Water Quality*). This would include provisions requiring the contractor to prepare to a spill response plan for isolating

and containing any accidental release should it occur. This would minimize the potential for any adverse effects from the accidental release of hazardous materials into the environment.

Post construction, hazardous materials such as petroleum products, solvents, paints, oils, and herbicides may be used and stored on-site for the riparian landscape establishment process, the fuels management program, and routine park operations. As described above, the District follows all regulations for the use, storage and disposal of pesticides as regulated by the California Department of Pesticide Regulation (CaDPR) and administered through the Contra Costa and Alameda County Departments of Agriculture.

Therefore, the potential impact would be *less than significant* and no mitigation is required.

Mitigation: None required.

Impact HAZ-3: The Project could expose people or structures to a significant risk of loss, injury, or death involving wildfires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. (Less than Significant)

The Project is located in an urban interface area where wildlands are adjacent to urbanized areas and where residences are intermixed with wildlands. The Project would not alter the location of the existing facilities operated by the District or Moraga-Orinda Fire Protection District. Expanded trail uses would not increase the existing potential for fire hazard as the District has a non-smoking ordinance on all trails in District parklands. The Project would not change existing land use at Wilder Park, owned and managed by the City of Orinda, that is also designed to accommodate emergency helicopter landings/takeoffs.

The District would continue to implement its wildfire prevention measures within the Project area, including onsite staff presence and wildfire fuel management. The District's fuel management activities have been ongoing for more than 72 years, funded largely from the District's operating budget and from various fire hazard mitigation grants under the Federal Emergency Management Agency (FEMA). The *1995 Fuel Management Plan* and *East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan (June 2010)* are being used by the District as part of an overarching management process under which site-specific treatment areas and fuel reduction/resource management actions are selected, evaluated and monitored. Treatment activities are planned for, budgeted, executed and recorded in a GIS-based database on a yearly basis.

Additionally, site features in the developed recreation sites would be designed to meet fire codes. Improvements would be made to improve emergency ingress and egress. Water storage capacity and emergency communications would be enhanced and a new emergency response site would be created in the developed recreation area in the McCosker sub-area.

Moreover, protocols for handling a wildfire situation would remain consistent with District policies and emergency preparedness plans. Therefore, as the Project would not increase the

exposure of people to hazards and implementation of the improvements would serve to benefit emergency response and emergency evacuation plans and access for emergency vehicles and personnel, the potential impact related to wildfires form the Project would be *less than significant* and no mitigation is required.

Significance: *Less than significant*.

3.8.6 Cumulative Effects

Geographic Extent/Context

Depending on the pathway of exposure, the geographic scope for cumulative effects relating to hazards and hazardous materials would be the watershed boundary, groundwater basin, or extent of any potentially affected soils. Hazardous materials delivery routes for the region would also be included in the event of a traffic accident-related spill. Cumulative hazards and hazardous materials-related effects could arise at any point from the Project construction or operation and related activities.

Existing Cumulative Conditions

Hazards and hazardous materials are generally very heavily regulated under existing federal, state, and local requirements for the safe transport, storage, use, and disposal. Cumulative hazardous materials effects could occur if activities at the Project site and other past, existing and proposed development, together, could significantly increase risks in the regional vicinity of the project site. However, most routine hazardous materials activities at the Project site and immediate vicinity would likely involve relatively small quantities of hazardous materials. Any health or safety effects of routine hazardous materials use would be limited to the specific individuals using the materials and anyone in the immediate vicinity of the use. No interaction would occur between these routine activities and similar activities at different sites.

Past, Present, and Reasonably Foreseeable Projects

Cumulative health and safety impacts could occur if project-related hazardous materials or hazards were to interact or combine with those of other existing and proposed projects. This is only likely to occur through the following mechanisms: air emissions; transport of hazardous materials and waste to or from the project site; inadvertent release of hazardous materials to the sanitary sewer, storm drain, or non-hazardous waste landfill; and potential accidents that require hazardous materials emergency response capabilities. Air emissions are addressed in *Section 3.3, Air Quality* and *Section 3.7, Greenhouse Gases*. The Project as well as other past, present, and future projects would be required to adhere to existing regulatory requirements for the appropriate handling, storage, and disposal of hazardous materials that are designed to minimize exposure and protect human health and the environment. Cumulative increases in the transportation of hazardous materials and wastes would cause a less than significant impact because the probability

of accidents to begin with is low and then for them to occur simultaneously is even more remote. Plus, the use of legally required packaging and other transportation regulations minimizes the consequences of potential accidents. In addition, all projects in the area would be required to comply with the same laws and regulations as the Project. This includes federal and state regulatory requirements for transporting (Cal EPA and Caltrans) hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials (Cal EPA, DTSC, CCEHD). Therefore, this cumulative impact would be *less than significant*.

3.8.7 References

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3.9 Hydrology and Water Quality

This analysis was undertaken to identify opportunities to avoid, reduce, or otherwise mitigate potentially significant impacts to hydrology and water quality and identify potential alternatives.

This section is based on review of the District Master Plan; and the ESA Flood Hazard, Sediment Management, and Water Features Analyses. The analysis of hydrology and water quality indicates a description of the regulatory framework that guides the decision-making process, existing conditions of the Project area, thresholds for determining if the Project would result in significant impacts, anticipated impacts, mitigation measures, and the level of significance after mitigation. Factors relating to stormwater are discussed in this section and in *Section 3.17, Utilities and Service Systems*. Impacts associated with the land alterations resulting from the proposed construction activities are also discussed in *Sections 3.3, Air Quality, 3.4, Biological Resources, 3.5, Cultural and Cultural Tribal Resources,* and *3.6, Geology and Soils*, along with applicable regulations, standard Best Management Practices, and mitigations that would serve to reduce Project activities to below the level of significance.

3.9.1 Regulatory Framework

This regulatory framework sets the context for the range of issues related to hydrology and water quality that the District shall consider in the evaluation of the potential for the Project to have a significant effect on hydrology and water quality. The consideration of potential effects on resources within the District is largely undertaken in relation to the construction and operation of the Project with an emphasis on the daylighting/restoration aspects of the Project. In addition, the Project site is bordered to the north, east and west by lands subject to the jurisdiction of the EBMUD and Contra Costa County, to the east by the City of Orinda, and to the west by the City of Oakland.

Federal

Section 401 of the Clean Water Act of 1972

The Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), sets national goals and policies to eliminate discharge of water pollutants into navigable waters and to achieve a water quality level that will protect fish, shellfish, and wildlife while providing for recreation in and on the water, whenever possible. The act regulates point-source and non-point source discharges to receiving waters under the National Pollutant Discharge Elimination System (NPDES) program.

In 1987, the CWA was amended to provide that the discharge of pollutants to waters of the United States from stormwater is effectively prohibited, unless the discharge is in compliance with an NPDES Permit. The 1987 amendments to the CWA added Section 402(p), which established a framework for regulating municipal, industrial, and construction stormwater discharges under the NPDES program. The Project would be subject to the CWA and adherence to the NPDES requirements would be expected during construction and operation.

Municipal Urban (Area-wide) Storm-Water Discharges

A municipal separate storm sewer system, as defined by the U.S. Environmental Protection Agency (EPA) must obtain an NPDES permit by a certain date according to the population served by the system. Municipal separate storm sewer system officials must submit an NPDES permit application and supporting information to the respective RWQCB. The CWA provides for delegating certain responsibilities for water-quality control and planning to the states. California has been authorized by the EPA to administer and enforce portions of the CWA, including the NPDES program. Section 208 of the CWA is designated to provide a comprehensive planning framework for both point- and non-point-source water pollution. Specific planning requirements include, but are not limited, to the following:

- Identification of needed treatment works to meet anticipated requirements over a 20-year period;
- Identification of construction priorities for the region; and
- Procedures and methods to control non-point-source pollution emanating from agriculture, mining, and other sources. Most owners or operators of facilities that discharge waste into a municipal sanitary sewer system need to obtain an NPDES permit. The EPA, the State Water Resources Control Board (SWRCB), and the respective Regional Water Quality Control Board (RWQCB) or the local wastewater management agency might require some industries to treat industrial hazardous wastes before such wastes are discharged to a municipal sanitary sewer system. The local wastewater management agency advises industries of those requirements.

Executive Order 11988

Executive Order 11988, dated May 24, 1977, has as an objective, the avoidance of, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of the base floodplain (100-year floodplain) and the avoidance of direct and indirect support of development in the base floodplain wherever there is a practicable alternative. Under the Executive Order, the U.S. Army Corps of Engineers (Corps) must provide leadership and act to:

- Avoid development in the base floodplain unless it is the only practicable alternative;
- Reduce the hazard and risk associated with floods;
- Minimize the impact of floods to human safety, health, and welfare; and
- Restore and preserve the natural and beneficial values of the base floodplain.

State

Regional Water Quality Control Board (RWQCB)

Order No. 96-054, Regional Water Quality Control Board, San Francisco Region. The CWA10 is administered and enforced by the SWRCB, which develops regulations to implement water-quality control programs mandated at the federal and state levels. In California, the NPDES permits are issued through SWRCB and the nine regional water quality control boards and establish requirements that when implemented:

- Effectively prohibit non-stormwater discharges; and
- Reduce the discharge of pollutants from stormwater conveyance systems to the maximum extent practicable.

Since the Project area is environmentally sensitive, development and implementation of the Proposed Project must comply with the RWQCP and related water quality control requirements.

Wetlands with the Project site are identified by the RWQCB as being of significant value.

Run-off quality is regulated by the NPDES Non-point source Program, established through the Clean Water Act and administered through the RWQCB. The Project site would be under the jurisdiction of the RWQCB and the local jurisdictions regarding discharge permits to local stormwater collection systems.

General Construction Activity

The California Construction Stormwater Permit (Construction General Permit)[1], adopted by the SWRCB, regulates construction activities that include clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area. The Construction General Permit authorizes the discharge of storm water to surface waters from construction activities. It prohibits the discharge of materials other than storm water and authorized non-storm water discharges, as well as all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations 117.3 or 40 Code of Federal Regulations 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

The Construction General Permit requires that all developers of land where construction activities will occur over more than one acre do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three Risk Levels established in the General Permit;
- Eliminate or reduce non-storm water discharges to storm drain systems and other waters of the Nation;
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies BMPs that will reduce pollution in storm water discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards; and
- Perform inspections and maintenance of all BMPs.
- To obtain coverage under the NPDES Construction General Permit, the Legally Responsible Person must electronically file all Permit Registration Documents with the SWRCB prior to the start of construction. Permit Registration Documents must include:
  - Notice of Intent

[1] *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities,* Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, National Pollutant Discharge Elimination System No. CAS000002.

- Risk Assessment
- Site Map
- SWPPP
- Annual Fee, and
- Signed Certification Statement.

Typical BMPs contained in Stormwater Pollution Prevention Plans are designed to minimize erosion during construction, stabilize construction areas, control sediment, control pollutants from construction materials, and address post construction runoff quantity (volume) and quality (treatment). The Stormwater Pollution Prevention Plan must also include provisions for inspecting and maintaining all BMPs.

Local Resource Protection Ordinances and Policies

Contra Costa Clean Water Program and Municipal Regional Permit

The Contra Costa Clean Water Program has been established as the local entity responsible for implementing compliance with the federal CWA to control stormwater pollution. It comprises Contra Costa County, 16 incorporated cities, and the Contra Costa County Flood Control and Water Conservation District. The program is being conducted in compliance with the NPDES Municipal Regional Permit (MRP) issued by the San Francisco Regional Water Quality Control Board (SFRWQCB) for municipal separate storm sewer systems (also referred to as MS4s). The permit contains a comprehensive plan to reduce the discharge of pollutants to the "maximum extent practicable" and mandates that participating municipalities implement an approved stormwater management plan. The program incorporates BMPs that include construction controls (such as a model grading ordinance), legal and regulatory approaches (such as stormwater ordinances), public education and industrial outreach (to encourage the reduction of pollutants at various sources), inspection activities, wet-weather monitoring, and special studies.

The SFRWQCB first added Provision C.3 to the stormwater permit in February 2003. The MRP was then adopted in October 2009 (Order R2-2009-0074 NPDES Permit No. CAS612008). The MRP was revised and updated in 2015 as Order No. R2-2015-0049, adopted in November and became effective January 1, 2016. The MRP governs discharges from municipal storm drains operated by 76 local government entities, including those in Contra Costa County. Contra Costa Clean Water Program issued a stormwater guidebook in 2012 which was updated in March 2016.

In accordance with these updated requirements, new development and redevelopment projects in Contra Costa County are required to incorporate treatment measures and other appropriate source control and site design features to reduce the pollutant load in stormwater discharges and manage runoff flows.

Provision C.3 Permit Requirements

The NPDES MS4 permit includes Provision C.3 that governs storm drain systems and regulates post-construction stormwater runoff. The provision requires new development and redevelopment

projects to incorporate treatment measures and other appropriate source control and site design features to reduce the pollutant load in stormwater discharges and to manage runoff flows. "Redevelopment" is defined as a project on a previously developed site that results in the addition or replacement of a minimum of 10,000 square feet of impervious surface. Projects that would add or replace more than 10,000 square feet of impervious surfaces would be required to implement treatment measures and appropriate source control and site design measures under the NPDES permit.

City and County General Plan Policies

City and county general plan policies provide guidance on District parklands from the planning phases through project implementation. Relevant city and county general plan policies pertaining to utilities and service systems in the Project area are described in *Table 3.9-1, City and County Hydrology and Water Quality Goals and Policies.*

TABLE 3.9-1
CITY AND COUNTY GENERAL PLAN HYDROLOGY AND WATER QUALITY GOALS AND POLICIES

Contra Costa County General Plan	Project Consistency
7-25: Land uses and activities that could result in contamination of groundwater supplies shall be identified, monitored and regulated to minimize the risk of such contamination	Consistent with Goal 7-25, Project implementation would include monitoring to ensure that construction activities would not result in contamination of groundwater.
7-O: To protect and enhance the natural resources associated with creeks and the Delta, and their riparian zones, without jeopardizing the public health, safety, and welfare.	Consistent with Goal 7-O, the Project would enhance the natural resources associated with creeks and their riparian zones through the restoration of 2,900 linear feet of creek channel currently contained in collapsing and partially blocked buried concrete and metal pipes.
7-Q: To employ alternative drainage systems improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.	Consistent with Goal 7-Q, the Project would restore 2,900 linear feet of creek channel to achieve a stable and self-maintaining creek that would require a low level of adaptive management and maintenance practices. This would allow the creek to exist in a state of dynamic equilibrium, where is it properly transporting both water and sediment in a balanced manner, neither leading to excessive erosion nor deposition throughout the restored creek channel.
7-R: To enhance opportunities for public accessibility and recreational use of creeks, streams, drainage channels and other drainage system improvements.	Consistent with Goal 7-R, the Project would enhance opportunities for public accessibility to the restored creek channel through the development of the Alder Creek Nature Trail.
7-41: Aesthetic, environmental, and recreational benefits shall be taken into full consideration when determining the costs and benefits of alternative drainage system improvements.	Consistent with Goal 7-41, the Project creek restoration project in the McCosker sub-area considers aesthetic, environmental, and recreational benefits in Project Objective 2: Creek Restoration which states, "*Improve creek functions in the McCosker sub-area, including overall ecosystem health for native aquatic organisms, water quality protection, sediment sorting and transport, flood storage capacity, and site aesthetics*."
7-49: Natural streams and channels which have been structurally modified shall be evaluated for potential use as urban open spaces, linear parks, and trails. Cities and other agencies responsible for recreation shall be encouraged to undertake this evaluation.	Consistent with Goal 7-Q, the Project would restore 2,900 linear feet of creek channel currently contained in collapsing and partially blocked buried concrete and metal pipes, develop an ADA accessible nature trail paralleling the stream channel, and provide opportunities to learn about creek functions through interpretive watershed programming, including water quality monitoring and posting to citizen scientist websites as set forth in strategies supporting Objective 2: Creek Restoration.

East Bay Regional Park District

2013 District Master Plan

The Master Plan adopted in 2013 defines the vision and mission of District with the core mission stated as follows:

> *"Preserve a rich heritage of natural and cultural resources and provide open space, parks, trails, safe and healthful recreation and environmental education. An environmental ethic guides the District in all of its activities."*

District Master Plan Policies

The District Master Plan contains policies guiding parkland acquisition, parkland dedications, parkland uses, and coordination with local cities and counties. Applicable policies addressing utilities and service systems are described in *Table 3.9-2, 2013 District Master Plan Hydrology and Water Quality Goals and Policies.*

TABLE 3.9-2
2013 DISTRICT MASTER PLAN HYDROLOGY AND WATER QUALITY GOALS AND POLICIES

Goals and Policies	Project Consistency
NRM11: Park water resources will be used for beneficial purposes. Water quality will be monitored to comply with established standards. The District will participate in cooperative efforts to plan comprehensive watershed management and will adopt "best management practice" guidelines for District land use activities to minimize potential storm water pollution. The District will monitor land use planning and development activities by other agencies and cities to avoid potential adverse impacts to parkland from pollutants generated by off-site or upstream sources.	Consistent with Master Plan Policy NRM11, the District routinely monitors water quality in District water sources including creeks, ponds and lakes to comply with established standards. Stormwater originating from the Project during construction and post construction would be addressed in accordance with the Regional Water Quality Control Board Storm Water Pollution Plan (SWPPP) requirements. A SWPPP would be prepared by a Qualified SWPPP Developer (QSD) and managed on-site by a Qualified SWPPP Practitioner (QSP) to ensure implementation of appropriate Best Management Practices for minimizing potential erosion and sedimentation within the Project Area during and post construction.
NRM12: The District will manage riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources and to prevent the destruction, loss or degradation of habitat. The District will participate in the preservation, restoration and management of riparian and wetland areas of regional significance, and will not initiate any action that could result in a net decrease in park wetlands. The District will encourage public access, the Bay Delta shoreline, but will control access to riparian and wetland areas, when necessary, to protect natural resources.	Consistent with Master Plan Policy NRM12, the Project includes Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat, which includes these strategy: "*Protect and support special status species and their habitat through existing management programs and by adhering to regulatory obligations*; and "*Maintain and enhance habitat communities through existing resource and noxious weed management plans, policies, and programs*." This objective would be implemented by managing riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources contained within the Project area. The Alder Creek watershed would be benefitted through the restoration of 2,900 linear feet of channel and upland riparian habitat and *Measure BIO-3a: Avoid, Minimize, and Mitigate for Temporary Impacts to Wetlands and Waters of the U.S. and of the State* would mitigate Project impacts to wetlands such that there would be no net loss of wetlands.
NRM12b: The District will engage in watershed management planning and practices that will address the shifts in habitat ranges caused by climate change through the preservation and enhancement of streams and wetland areas.	Consistent with Master Plan Policy NRM12b, the Project would manage the watershed contained within the Alder Creek watershed through the restoration of 2,900 linear feet of channel and upland riparian habitat and would address the shifts in habitat ranges caused by climate change by tracking and monitoring the effects of climate change in accordance with Objective 6: Climate Adaptation and Resiliency including this strategy: "*Maintain, monitor and adapt management programs for natural communities and habitat to address climate change effects*."

East Bay Regional Park District Standard Technical Specifications and Supplementary Conditions

The District's Standard Technical Specifications and Supplementary Conditions contain provisions that are intended to ensure, among other things, the safety of the construction workers, staff and the public, and the protection of wildlife, site resources, and water quality during construction and operation of site amenities. Relevant sections are provided in *Table 3.9-3, Relevant Technical Specifications* below.

TABLE 3.9-3
RELEVANT TECHNICAL SPECIFICATIONS

Site Set-up
• Work on site shall only take place between June 15 and October 31. • Confine work activities to approved construction work areas, staging areas and access routes. • Excavations shall not be left open overnight. Where not backfilled, excavations shall be tightly covered. Perimeters of plywood panels or other covers shall be edged with dirt to prevent intrusion of small animals. • Excavations shall include a ramp with a maximum slope of 1:1 to allow animals to escape the excavation when not covered. • Storage of equipment and vehicles shall be a minimum of 100 feet from the top of the creek bank. • Fueling of equipment and vehicles shall take place a minimum of 200 feet from the top of the creek bank.
Erosion Control SWPPP Requirements
In addition to the requirements of the CASQA or Caltrans standard, the SWPPP shall contain an Erosion Control Plan that includes the following provisions: • Fiber rolls and erosion control blankets shall not contain netting that could trap small animals. • Photodegradable products are not acceptable. • All erosion control products shall be weed and seed free. • All temporary erosion control measures shall be immediately removed when no longer needed. • All temporary erosion control measures shall be removed and legally disposed of prior to project completion.
Clearing and Grubbing
• All cut and fill areas: Strip topsoil to 2-inches minimum below existing grade where vegetation occurs. Additional depth may be required to remove organic materials. • Stripped material shall be disposed of off-site and in a legal manner or stockpiled for reuse as directed by the District. • Upon completion of clearing and grubbing, areas shall be left in a neat, clean condition ready to receive subsequent work.
Excavated Material
• All excavated material shall be piled in a manner which will not endanger the work and which will avoid completely obstructing access. Culverts, swales, and natural drainage patterns shall be kept clear.
Supplementary Conditions
• The California State Water Resources Control Board, San Francisco Bay Region, Oakland, California has jurisdiction over the project storm water discharges within the Project area. Accordingly, the following actions will be required prior to initiating implementation of the Project: 1) the District will submit a Notice of Intent (NOI) and obtain a waste discharger identification number (WDID) from the above agency; 2) a Receipt of NOI will be obtained by the District from SWRCB prior to the start of construction; and 3) the Contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board No. 92-08 DWQ for discharges of storm water runoff associated with construction activity.

3.9.2 Existing Conditions

Regional Hydrology

The Project area is in the upper and relatively undeveloped portions of the Temescal, San Pablo, and San Leandro Creek watersheds. The Temescal and San Leandro Creek watersheds drain southwest toward San Francisco Bay whereas the San Pablo Creek watershed lies on the northeastern side of the Oakland-Berkeley Hills and drains northwest to San Pablo Bay. Land uses within these watersheds vary with the dominant uses being undeveloped open space and residential uses.

The northwestern slopes of Round Top, and much of the land in the Preserve Sub-area, are within a 463-acre sub-watershed, while Thornhill Canyon, a major topographic feature in the Sibley Triangle within Robert Sibley Volcanic Regional Preserve, is in a separate sub-watershed that forms the headwaters of Temescal Creek.

Drainage Patterns

Creeks in the Project area vary widely in the amount of surface flow depending on the season with winter storms that can result in high flows and flooding. A few of the channels supporting Riparian woodlands sustain perennial flow, while many of the drainages may become intermittent during the summer dry season.

A perennial stream or creek is defined as having flowing water year-round during a typical year with groundwater providing the primary source of water for stream flow and runoff from rainfall serving as a supplemental source of water. Brookside Creek, Alder Creek and San Leandro Creek are considered perennial creeks. Intermittent creek drainages are defined as having flowing water during certain times of the year, when groundwater, supplemented by rainfall, provides water for stream flow, but these sources may not provide adequate water to sustain flows during dry periods. An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year with runoff from rainfall providing the primary source of water for stream flow. Several of the upper tributaries in the Western Hills and McCosker sub-areas are considered intermittent or ephemeral creek drainages.

The drainage patterns in the 463-acre Round Top sub-watershed have been altered by quarry operations and steep cut slopes above the freeway resulting in the formation of numerous gullies in the northerly basin of the Preserve. Round Top marks the dividing line between the San Pablo and the San Leandro Creek watersheds. The southeastern slopes of the peak are in the 19,430-acre Upper San Leandro Reservoir sub-watershed, and drainage channels from these slopes empty into a valley which is the headwaters of San Leandro Creek. The creek drains into Upper San Leandro Reservoir, which was constructed in 1926, and serves as a water supply reservoir. It is operated by EBMUD. From the reservoir, the water drains southward into Lake Chabot, and finally to the San Francisco Bay.

Several tributaries to Brookside and San Leandro Creeks drain down the east and south facing slopes of the Western Hills Sub-area. San Leandro Creek crosses the southwest corner of the

parcel. Brookside Creek drains in an easterly direction bisecting the center of the east facing hills of the Western Hills Sub-area. The northern two-third of this site drains to San Pablo Creek and San Pablo Reservoir, primarily through Brookside Creek, and the southern one-third drains into San Leandro Creek and San Leandro Reservoir through Moraga Creek. The largest basin comprises the entire Brookside Creek headwaters watershed from ridge top to ridge top.

Brookside Creek is a perennial creek, as are two of its tributaries. There are several seasonal tributaries as well in the area. A mosaic of wetlands of various types, including seep wetlands, and a variety of vegetation types and micro climates are associated with Brookside Creek and its tributaries throughout the watershed.

Several perennial and seasonal tributaries form below the ridgelines fed by perched groundwater seeps. The tributaries to San Leandro Creek that drain the south-facing slopes of the Western Hills and McCosker sub-areas represent a substantial source of water for San Leandro Creek, a perennial creek that provides habitat for Moraga Creek/San Leandro Reservoir native rainbow trout. These drainages flow southward through the McCosker Sub-area joining into a single perennial tributary that joins San Leandro Creek at Pinehurst Road. This watershed area includes approximately 10,085 linear feet of undisturbed riparian habitat in natural drainage channels and approximately 2,900 linear feet of disturbed channel, referred to herein as Alder and Leatherwood Creeks as shown in *Figure 3.9-1, Alder Creek Watershed*.

Alder Creek lies within a gently sloping valley that is aligned roughly north-south. Significant portions of the lower reach of this tributary were filled and culverted prior to acquisition by the District. Several of these culverts are now failing exposing culverted sections of the creek channel. From the northern end of the proposed recreation development area, Alder Creek flows alternately above ground and in culverts for approximately 2,135 feet. The northern, or upstream, portion of Alder Creek begins as a narrow, somewhat incised channel with a substrate of cobbles and large rocks with no floodplain. The creek channel soon grows wider and a modest floodplain is present. After flowing above ground for approximately 63 feet near the park residence, Alder Creek flows underground for approximately 1,263 feet until it reaches the southern end of the Project area. The underground sections of Alder Creek are below annual grasslands, and ruderal and developed habitats.

Within the valley floor, there are two prominent drainage swales (North Swale and South Swale) in addition to Alder Creek. These drainages, located upslope of the level area upon which a metal equipment shed is located also drain into Alder Creek. The lower portions of the two swales are buried by fill placed in association with previous site development activities. The southern channel is referred to herein as Leatherwood Creek.

At the southern terminus of Alder Creek, water flows out of a culvert and into a plunge pool, approximately three feet deep and surrounded by relatively steep rock walls, before flowing under Pinehurst Road through a 35.4-meter length culvert to join San Leandro Creek. When this pool was surveyed in August 2012, Alder Creek supplied 24 gallons of water per minute to San Leandro Creek. By comparison, San Leandro Creek above the Alder Creek tributary had a surface flow of 16.5 gallons per minute. Water quality parameters for Alder Creek, as well as San

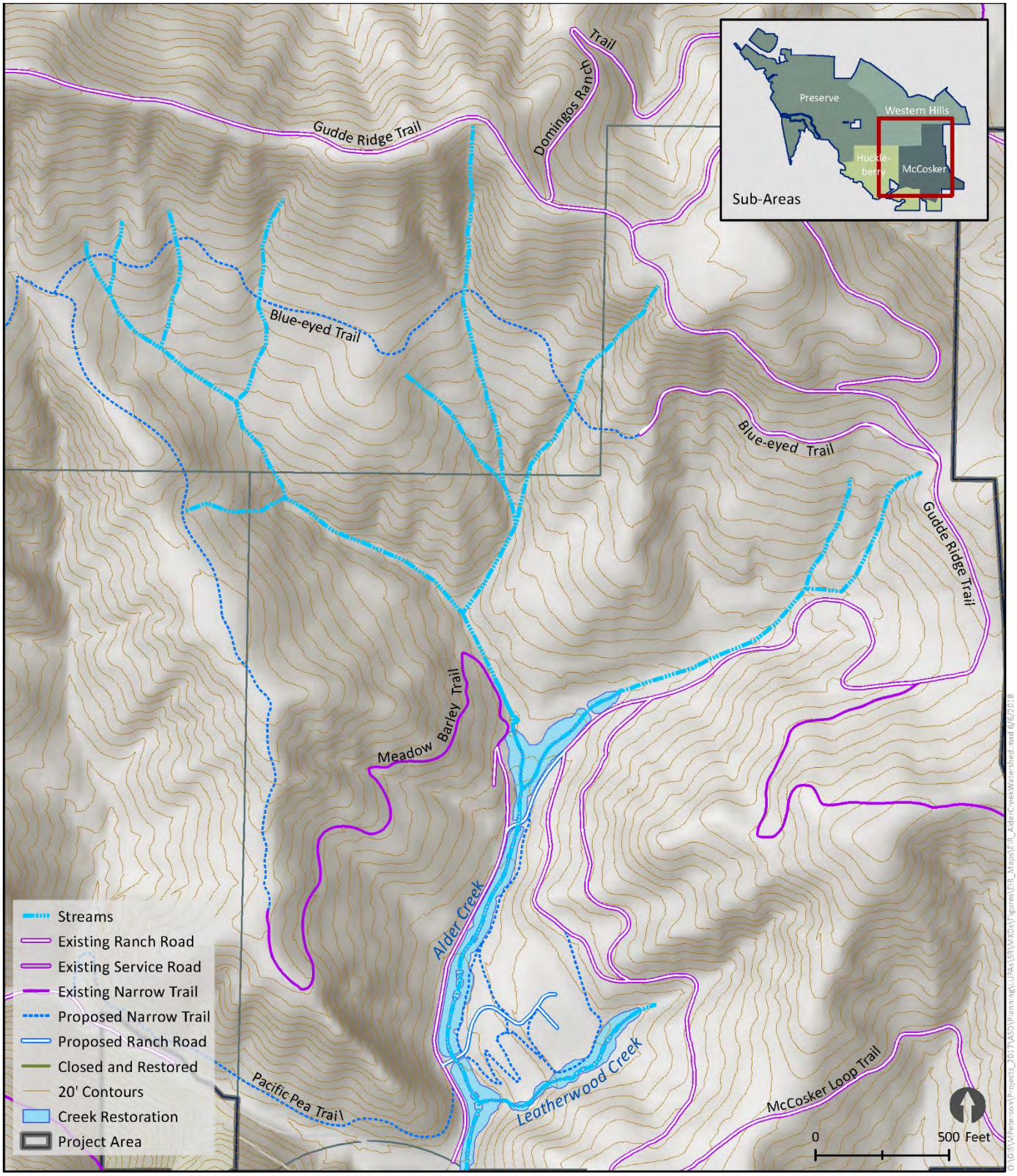

FIGURE 3.9-1: ALDER CREEK WATERSHED

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Leandro Creek (temperature; conductivity; turbidity and dissolved oxygen), were all within a normal range consistent with background levels for the region.

Seeps, Springs and Ponds

Most of the existing springs within the Project Area are concentrated near contacts between the hard volcanics and the impermeable sediments, typically near the bases of the adjacent steep hill fronts on both the east and south facing sides of the valleys.

Within the Western Hills and McCosker sub-areas, channels originate entirely on the lower slopes, within the outcrop of the impermeable sediments, typically near the bases of the adjacent steep hill fronts of the valley floors of both the Wilder residential area and McCosker Valley. Channels originating entirely on the lower slopes, within the outcrop of the impermeable sedimentary rocks, do not have perennial flow. Some channels that extend into the steep valley flanks, across the contact between sedimentary and volcanic bedrock carry small perennial surface flows. These seeps and ponds may be permanent (remaining wet or moist year-round) or intermittent (dry during part of the year).

The Preserve Sub-area contains two springs that have been developed in the past, but are not in use at present. Both are located on the south side (downhill) of the paved road that provides access to the top of Round Top. A seasonal pond, created as a result of quarrying activity, is located at the base of the south quarry and is the only source of water on the east side of the Preserve. The pond is filled by rainfall and slowly evaporates during the spring and summer. Depending on the amount of winter rainfall, the pond may contain water year-round or dry out during the late spring or summer months. The pond provides a source of water for terrestrial wildlife and breeding habitat for amphibians such as Pacific tree frogs and rough-skinned newts.

Groundwater

In general, groundwater resources in the uplifted highlands of the East Bay Hills tend to be located in three types of aquifers and several types of perched compartments. The aquifer types are: 1) within unconsolidated channels fills; 2) within thick alluvial-filled upland valleys, and 3) within compartmented bedrock blocks, usually bound by faults. Perched groundwater is that portion held in underground storage above the perennial groundwater table. Examples of perched groundwater compartments include: 1) pervious strata lying above relatively impervious structures, such as thrust (blind) faults or shale; 2) within shallow landslide complexes (because landslide sip surfaces are relatively impervious); and 3) within deep bedrock landslide complexes (oftentimes, ancient or dormant landslides). Alluvial fills in stream channels and upland valleys are often perched above the perennial groundwater table as well.

Flooding

In general, the uplands of the Project area are not subject to regional storm-related flooding, though limited areas within the valley floors may be subject to short term local flooding hazards due to drainage impediments, structures, and accumulated sediment or debris in drainage conveyances. According to Federal Emergency Management Agency (FEMA) flood zone

mapping, none of the sub-areas include identified 100-year or 500-year flood zones except for the very southern border of the McCosker Sub-area which includes a limited 100-year flood zone around the confines of San Leandro Creek (ABAG, 2017).

Stormwater

The upper watershed in the Project area remains largely natural without any substantive urban pollution sources, however stormwater runoff from hills does contribute sediments to receiving waters. Existing equestrian, biking, and hiking trail uses as well as grazing activities along the drainages, can also contribute to sources of trash and animal wastes. Asphalt parking areas and roadways are relatively limited in the Project area with large areas of open space that generally receive stormwater runoff from these impervious surfaces to percolate into the ground rather than flowing directly into the drainages. Currently, water quality is good within the Project area.

3.9.3 Research Methodologies

The following analysis is based on a review of proposed project plans, existing conditions and drainage patterns, and existing regulatory requirements. The daylighting of buried drainages as well as the introduction of any new impervious surfaces would constitute changes to existing site drainage patterns which are analyzed below for their affects including increases in the rate and amount of stormwater runoff from the project site, as well as potential sources of pollutants.

The implementation of drainage control features provides control of both water quantity during high storm events and thus can be effective in preventing flooding concerns, but can also provide control of water quality as much as these features encourage on-site infiltration of stormwater as further analyzed below.

3.9.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G, Section IX, a project would have a significant impact on hydrology and water quality if it would:

a) Violate any water quality standards or waste discharge requirements;

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;

e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

f) Otherwise substantially degrade water quality;

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows;

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;

j) Inundation by seiche, tsunami, or mudflow.

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below:

b) Deplete Groundwater Supplies. The Project would not require extraction of any groundwater and would only introduce a relatively small amount of new impervious surfaces associated with parking lot expansion, road improvements and other minor improvements. However, runoff from these new impervious surfaces would be directed to adjacent open space areas and thus have no substantive impact to groundwater recharge potential. In addition, groundwater at the Project site is not a local source of water supply. Thus, the Project would not deplete groundwater supplies or interfere substantively with groundwater recharge such that there would be negligible change to the underlying water table. Therefore, this criterion is not addressed further in this EIR.

g) Place Housing in a 100 Year Flood Zone. The Project does not include any residential component and therefore there would be no impact related to this criterion. It is not addressed further in this EIR.

i) Failure of Levee or Dam. The Project area is located atop a ridgeline and not protected by any levee systems. There are no dams located upstream of the Project area and therefore it is not within any dam inundation area. Thus, this criterion is not addressed further in this EIR.

j) Inundation by Seiche, Tsunami, or Mudflow. The Project area is located well inland and is not adjacent to any enclosed or semi-enclosed body of water. As a result, there is no potential for any seiche or tsunami waves to affect the Project area. Mudflows are debris flows with a high volume of water typically associated with catastrophic events such as dam failure, volcanic activity in the vicinity of a snow pack, or with heavy precipitation in areas that have been through a forest fire. The Project area is not located in an area that would be subject to dam failure or volcanic activity near a snow pack that would be subject to mudflows. The Project is in a geologic area (Siesta Formation) is known for its propensity for land sliding, low shear strength, and its expansive nature, evidence of which can be seen along several trail segments within the Western Hills and the McCosker Sub-areas. These landslides consist principally of debris and earthflow slides and, to a lesser extent, slump, slump-flow, and

translational landslides. Shallower landslides are a fairly regular rainy season occurrence. These conditions, and regulation and Best Management Practices for addressing these conditions to reduce impacts to below the threshold of significance area discussed in *Section 3.6, Geology and Soils*. Therefore, conditions indicate that there would be no impact and this criterion is not discussed further in this EIR.

3.9.5 Impact Analysis

The following analysis involves an unnamed perennial tributary, herein referred to as Alder Creek in this report, which joins San Leandro Creek just downstream of Pinehurst Road. Significant portions of this creek and an upstream tributary, herein referred to as Leatherwood Creek, in the Project area were filled and culverted prior to acquisition by the District. Several of these culverts are now failing, causing sinkholes and exposing sections of the creek channel. Investigative boring revealed that groundwater ranges between 12 and 20 feet below the ground surface making the potential for liquefaction minimal.

Preserve Sub-area

Modifications to the existing Sibley Main Staging Area would expand the existing parking capacity from 38 spaces to approximately 73 spaces in accordance with the recommendations in the 1985 LUDP. The expanded area would result in the addition of approximately 2,946 square feet of compacted gravel surface in an area that is currently vegetated, requiring development of a stormwater treatment feature.

Improvements in the Preserve sub-area would involve repairing and repaving 1,100 feet linear feet of an existing service road access off Old Tunnel Road. The paving work would involve grinding up the existing pavement in place, and paving over the top of it. This work would not alter the amount of impervious area at the site. The 272-foot restroom and access pad surrounding the restroom facility would add approximately 675 square feet of impervious areas to the Old Tunnel Road site.

During the short-term grading activities involved to implement these improvements, there could be potential significant short-term construction impacts to water quality. Long-term, accumulated water quality impacts may be related to potential increase in vehicles, horses, and park and trail users. Trash, oil/grease, and animal waste are the common pollutant sources related to the proposed plan.

The proposed Project construction elements would be outside of the 100-year floodplain based on the 100-year floodplain boundaries delineated by FEMA (ABAG, 2017). The plan element would not cause any change in floodplain features such as flood elevations, floodplain boundaries, velocities, and erosion/sedimentation patterns.

Western Hills Sub-area

No impervious improvements are planned for the Western Hills sub-area beyond the Red-tailed Hawk Staging Area previously permitted as part of the Wilder residential development (*2004*

Second Supplemental EIR for the Montanera Project). This staging area design includes stormwater treatment facilities consistent with RWQCB requirements.

McCosker Sub-area

Improvements in the McCosker sub-area would involve improvements to existing roadways, both paved (approximately 410 linear feet) and all-weather gravel surface ranch roads (approximately 1,840 linear feet) to allow permitted visitors and maintenance and emergency vehicle access. These improvements would not alter the amount of impervious area at the site.

Circulation improvements in the McCosker sub-area would include three crossings of Alder Creek: 1) Ninebark Public Vehicle Bridge 2) Fern View Terrace Maintenance Vehicle Bridge, and 3) Alder Creek Maintenance Vehicle Bridge The three structures would be designed as arched bridges with natural creek bottoms. These improvements would be installed as part of the overall creek restoration project that would involve removing culverts buried in fill, thereby adding to the natural stormwater drainage patterns within the riparian zone.

The multi-purpose, informal meadow would be designed to accommodate rustic group camping sites for small to medium size groups and interpretive programs, open play, and other group and non-group activities with access provided for the disabled. During disaster emergencies, the area could to be used as a staging area for fire crews and other emergency support groups.

The group gathering area would include a shade structure that could accommodate six to eight picnic tables for eating and for environmental education. Amenities would include a large group barbecue, preparation table, and campfire. The campfire area would be contained within a concrete surface area and be designed to minimize fire hazard danger. Materials used for the shelter and ancillary amenities would consider ease of maintenance and site aesthetics.

The combined group camp and interpretive program meadow area in Fiddleneck Field would be designed with pervious surfaces. The creation of the meadow areas created from the fill material would result in no net increase in impermeable area. The proposed recreation facility development would result in a net increase in impermeable area from the vault toilets (1,350 square feet), campfire ring (700 square feet), ADA parking area (600 square feet), concrete pad for the 4,000-gallon water tank (100 square feet), totally approximately 2,750 square feet of impermeable area.

The Fern View Terrace would be an informal site for passive day use activities only. Individual picnic tables would be installed on graded pads for individual visitor use and for use during interpretive programs. Existing concrete walls remaining from the construction and quarrying business that formerly operated in this sub-area would be retained and incorporated into the design of the Fern View Terrace. Installation of compacted gravel picnic pads would not add to the impermeable surface area at this site.

The creek restoration work would involve removal of removing approximately 2,720 linear feet of buried culverts ranging in diameter from 12 inches to 60 inches and concrete debris to create an open creek channel that would improve watershed system flows during a storm event.

Excavation of the fill material and deposition of the material to an upland area that would be developed as a group recreation activity area could result in significant short-term construction impacts to water quality. Over the long-term, long-term, the development of the Fiddleneck Field recreation area would add approximately 2,750 square feet of impermeable area to the site and increase visitor use, including vehicles, horses, and park and trail users. These elements could result in accumulated water quality impacts related to a potential increase trash, oil/grease, and animal waste, the common pollutant sources related to the construction of these elements.

The proposed Project construction elements would be outside of the 100-year floodplain based on the 100-year floodplain boundaries delineated by FEMA (ABAG, 2017). The plan element would not cause any change in floodplain features such as flood elevations, floodplain boundaries, velocities, and erosion/sedimentation patterns. Therefore, no significant Floodplain Encroachment Impacts would be expected due to the proposed plan.

Project Area-wide - Trails

The Project would include single use and multi-use trails providing shorter loops and connections to longer, region-wide trails, including the Skyline Trail, and regional trails identified in the District Master Plan. Trail construction would involve development of narrow trails approximately four feet wide. The trail surface would consist of compacted native soils. The trails would be designed to slope to the outside edge of the trail. This would allow water to sheet flow off the trails and would minimize water flows concentrating and collecting sediments within the trail infrastructure. Drainage crossings would be reinforced with native rock in manner that would retain natural hydrologic functions. Trail realignments would be constructed in the same way and closure and restoration of existing alignments would similarly address natural site drainage functions. Trail uses changes would not involve alterations to the permeability of trail surfaces. Therefore, implementation of the trail system improvements would not require construction of new storm water drainage facilities or expansion of existing facilities.

a) Impact HYD-1: The Project would not violate any water quality standards or waste discharge requirements (Less than Significant).

Construction

Trail construction and modification would largely be done with hand tools or light equipment and implement BMPs as outlined in *Appendix B, Trail Construction and Trail Modification Best Management Practices*. However, other Project elements including drainage daylighting, habitat restoration, parking lot expansion, and road construction would require earthwork using a variety of heavy machinery. Earthwork activities would include the stripping of surface vegetation, excavation of soils, and the placement of imported engineered soils on the Project site. During construction, existing impervious surfaces and established groundcover that serves to stabilize site soils currently, would be removed, potentially resulting in increased erosion and sedimentation. Construction would also require the use of gasoline and diesel-powered heavy equipment. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances could be used

during construction. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters.

Construction activities at the Project site would be required to comply with the NPDES General Construction Activities Permit (Order No. 2012-0006-DWQ; NPDES No. CAS000002) and the District Technical Specifications, which require the project applicant to prepare a Stormwater Pollution Prevention Plan (SWPPP). The Project SWPPP would list the specific erosion control and storm water quality Best Management Practices (BMPs) that would be employed to minimize contamination of storm water runoff, along with the proper methods of installation, and maintenance of BMPs. In addition to erosion control BMPs, the SWPPP would include BMPs for preventing the discharge of other NPDES pollutants besides sediment (e.g. paint, solvents, concrete, petroleum products) to downstream waters during and post-construction. In the event that any of these measures fails, the NPDES CGP requirements include requirements for inspection and making corrective actions as necessary. With implementation of these required construction BMPs, and the following mitigation measures: 1) *BIO-1a - Project-wide: General Conservation Measures to Protect Habitat Quality for All Special-status Species*, 2) *Measure BIO-2a - Project-wide: Minimize Disturbance to Riparian Habitat*, and 3) *Mitigation Measure BIO-3a – Project-wide: Avoid and Minimize Impacts to Wetlands and Waters of the U.S. and of the State*, the potential impacts to water quality would be reduced to less than significant levels.

Operation

The proposed Project would include elements that would increase the amount of impervious areas including road construction and expansion of parking areas. Although, the amount of new impervious surfaces would be relatively small compared with the Project Area which will remain predominantly pervious. However, any increase in impervious area has the potential to increase the efficiency by which sediment and other pollutants are delivered downstream. The introduction of new paved areas, parking lots etc., creates the potential for accumulation and release of petroleum hydrocarbons, lubricants, sediments, and metals (generated by the wear of automobile parts), which, if not managed appropriately, could violate water quality standards. These types of common urban pollutants could be transported in runoff, potentially adversely affecting the quality of receiving surface waters or groundwater.

In general, existing stormwater management plans and policies and NPDES MS4 requirements, which implement federal Clean Water Act requirements, contain drainage control requirements that have proven effective in minimizing the transport of stormwater runoff pollutants commonly associated with land uses such as those proposed by the Project. The NPDES MS4 Permit requires both source control measures and low impact design (LID) standards for post-construction stormwater treatment. Source control measures are structural controls and operational procedures to limit pollutants at their source.

New proposed trails would be designed to largely avoid drainage crossings to the extent possible and where necessary, improvements including rock drain causeways and bridges would be constructed. Drainage crossings would be constructed to minimize disturbance to the existing habitat which would include minimizing the potential for scour and erosion.

The regulatory requirements for drainage features of proposed development to include source control measures as appropriate to prevent stormwater discharge from violating water quality requirements. With implementation of these regulatory requirements, proposed improvements would be ensured to include the stormwater treatment features as necessary to protect water quality. As a result, potential water quality impacts would be reduced to *less than significant levels*.

Mitigation: None required.

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b) Impact HYD-2: The Project would alter the drainage patterns at the site which could result in erosion or sedimentation. (Less than Significant)

The Project includes trail construction/modification, road improvements, repaving, parking lot expansion, and restoration and enhancement of Alder and Leatherwood creeks. These two drainages are currently conveying surface water in a deteriorating system of culverts. These activities would alter existing drainage patterns.

As noted above, all construction activities for all elements of the Project would include implementation of BMPs in accordance with NPDES Construction General Permit that would minimize the potential for erosion or sedimentation.

Trail construction and modification would be limited in its disturbance of the Project area. As noted above, new trails would be located to minimize drainage crossings and any potential to adversely affect water quality. To minimize the mobilization of sediment to creeks and other water bodies permanent erosion- and sediment-control measures would be incorporated where trails cross through riparian zones including:

- Armoring the trail surface through the channel
- Providing settling areas along the trail where water could infiltrate and sediment could settle out
- Constructing creek crossings so that they do not greatly alter the cross-sectional shape of the channel
- Sloping the approach to a drainage crossing downward toward the drainage and then climbing upward when traveling away from the drainage bed, so that in the event of a blockage in the channel, the water would not be diverted to flow along the trail.

Thus, there would be negligible potential for any substantive erosion or sedimentation from the trail construction and modification.

Restoration design would include modifications such as internal flow baffles and other fundamental fluvial geomorphic engineering measures such as grade design which are designed to create a dynamically stable flow regime that minimizes erosion. The overall improvements to the currently deteriorating culvert system would result in a more stable balanced manner that by design would be

closer to a natural system. Therefore, with implementation of the fluvial geomorphic engineering measures, the restoration of the two creek channels would reduce impacts relating to erosion and sedimentation.

Other elements of the Project, including the recreation facilities, road improvements, and parking lot expansion would also be required to adhere to NPDES MS4 requirements. These requirements would ensure that stormwater management features are incorporated into the project design such that the potential for erosion or sedimentation is minimized. As a result, the potential for erosion or sedimentation would be *less than significant*.

Mitigation: None required.

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c) Impact HYD-3: The Project would place structures that would impede or redirect flood flows (Less than Significant).

In general, the uplands are not subject to storm-related flooding, although limited areas may be subject to short-term flooding due to drainage impediments such as the buried culverts which the Project would remove. As noted above, the Project Area does not include any flood zones other than a limited area around the San Leandro Creek at the edge of the Project area. Features proposed within the San Leandro Creek would be limited to retrofitting the culvert conveying discharge off the site under Pinehurst Road with internal flow baffles and augmenting the scour pool downstream of this pipe to raise the water level by one foot. Overall, the improvements would be designed such that they to reduce impediments to natural flood flows, improve overall ecosystem functions, and facilitate fish passage between San Leandro Creek and Alder Creek. As a result, the potential for structures to impede or redirect flood flows would be *less than significant*.

Mitigation: None required.

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d) Impact HYD-4: The Project would alter the drainage patterns at the site which could result in flooding on- or off-site (Less than Significant).

As noted above, the Project would alter the existing drainage patterns in the areas of the proposed improvements, which include restoration of the Alder and Leatherwood Creeks and creation of new impervious surfaces with parking lot expansions and road modifications. If not designed appropriately, these activities could alter the drainage patterns such that flooding potential on- or off-site is increased.

The restoration activities are designed to improve overall hydrologic functions of two creek channels, which would include flood storage capacity. Daylighting the two segments of the existing drainages would include channel improvements such as baffles that would create

roughness within the channel to lower peak flows. The proposed restoration activities would also increase floodplain storage capacity.

The Project elements that would introduce new impervious surfaces such as parking lot expansion and road construction would be required to include drainage control features in accordance with the NPDES MS4 requirements. These requirements would include implementation of low impact development (LID) drainage features that would minimize the peak stormwater flow volumes and allow for on-site infiltration of stormwater. Incorporation of these drainage control requirements into the Project design would ensure that the potential for on- or off-site flooding would be minimized.

Therefore, with implementation of the Project design features to improve the hydrologic characteristics of the two creek channels and the existing drainage control requirements, the Project would have a *less than significant impact* related to flooding both on- and off-site.

Mitigation: None required.

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e) Impact HYD-5: The Project could create runoff that would exceed the capacity of existing or planned stormwater infrastructure (Less than Significant).

There are elements of the Project such as trail construction and modification that would not result in any increases in stormwater flow volumes and thus would have no impact on the capacity of existing or planned stormwater infrastructure. The Project Area itself includes a lot of open space with little existing stormwater infrastructure. As noted above, the expansion of the parking lots and road improvements would include creation of new impervious surfaces that would create increased runoff in the Project Area. However, with implementation of the required drainage control requirements of the NPDES MS4 permit, there would be a *less than significant impact* related to the capacity of existing or planned stormwater infrastructure.

Mitigation: None required.

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f) Impact HYD-6: The Project could otherwise degrade water quality. (Less than Significant)

The Project would include the creation of some new impervious surfaces which could introduce typical urban/recreation pollutants, discussed above. However, the Project does not include any other element that might otherwise degrade water quality. Therefore, the potential impact would be *less than significant*.

Mitigation: None required.

3.9.6 Cumulative Effects

Geographic Extent/Context

The geographic extent of cumulative effects with respect to Hydrology would be the San Francisco Bay Hydrologic Region. The Project area includes three different watersheds, all of which eventually drain to the San Francisco Bay.

Existing Cumulative Conditions

The regulatory context of hydrology includes required state and regional requirements that are based on Clean Water Act and Regional Basin Plans to ensure that water quality goals are being achieved through improvements in stormwater management at a local level. The San Francisco Bay and many of the drainages that empty into it have been adversely affected by urban development and industrial land uses over the years.

Past, Present, and Reasonably Foreseeable Projects

Implementation of the Project, together with past, present, and other reasonably foreseeable future projects in the region could cumulatively increase stormwater runoff and pollutant loading to receiving waters. The Project and other future projects in the region would be required to comply with drainage and grading requirements intended to control runoff and regulate water quality at each development site. Any new project would be subject to the same permitting requirements as the Project, and would be required to demonstrate that adequate controls for both stormwater quality and quantity are incorporated into project design specifications. Since the regulatory requirements do not allow for any substantive increase in stormwater quantity or decrease in stormwater quality with individual projects, the cumulative impact from these projects would be *less than significant*.

3.9.7 References

Association of Bay Area Governments (ABAG), *FEMA Flood Zones,* http://gis.abag.ca.gov/website/Hazards/?hlyr=femaZones, accessed November 11, 2017.

East Bay Regional Park District. 2013. *Master Plan 2013.*

ESA Flood Hazard, Sediment Management, and Water Features Analyses.

Orinda City Council Meeting Staff Report Agenda Item I-1, Review of City response to the Army Corps of Engineers Request for Comments regarding the 404(b)(1) application for the Montanera Development, October 16, 2001.

Federal Emergency Management Agency (FEMA) flood zone mapping.

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3.10 Land Use and Planning

This section describes existing land use conditions that could affect or be affected by the Project. This section also describes laws, regulations, plans, and policies related to land use and planning that may be relevant to the Project. Public recreation facilities are discussed in *Section 3.15, Recreation*. Impacts associated with the land alterations resulting from the proposed construction activities are discussed in *Sections 3.3, Air Quality, 3.4, Biological Resources*, *3.6, Geology and Soils*, and *3.9, Hydrology and Water Quality,* along with applicable regulations, standard Best Management Practices, and mitigations that would serve to reduce Project activities to below the level of significance.

3.10.1 Regulatory Setting

Federal, state, and local laws and regulations govern land use planning, development, conservation and use. The Project is subject to legal and regulatory provisions including: 1) the designation of a special district under the State Public Resources Code; 2): established resource protections and permit conditions; and 3) local regulations. Following is a summary of applicable land use plans, policies, and regulations of agencies with jurisdiction over the Project.

Federal and State Conditions

The Western Hills Open Space Conservation Easement is the primary federal and State mechanism guiding the management of this open space. This program is summarized below.

Conservation Easement

The Western Hills Open Space Conservation Easement was established as mitigation pursuant to the USFWS Biological Opinion and CDFW Incidental Take Permit for the Wilder (Montanera) residential development project. Species covered under the easement include: California red-legged frog and Alameda whipsnake. Covered habitat includes: seasonal and seep wetlands, creeks and adjacent riparian habitat, coyote scrub, California oaks, and non-native grassland.

The *Long Term Management Plan (LTMP) for the Western Hills Open Space* will serve as the controlling management plan for the conservation easement. The LTMP, developed in concert with, and approved by, the resource regulatory agencies, addresses the long-term ownership, land management, and funding mechanisms for the Western Hills Open Space Area as authorized by the Resource Agency Permits. Under this plan, 389.1 acres of natural open space will be preserved in perpetuity, as mitigation for the Wilder development-related impacts to natural resources. Two separate endowments have been established in trust to fund the management of this conservation easement (collectively referred to as "Endowments"): 1) the Western Hills Open Space Long Term Management Endowment, and 2) the Western Hills Open Space Management Oversight Endowment, which is the mechanism for receiving money for oversight and enforcement of the easement. A Geological Hazard Abatement District (GHAD) was created to address any landslide or erosion issues, and will be responsible for maintaining developments such as trail connections between the staging areas/trailheads that will pass through GHAD lands.

Maintenance and management of these access points will be coordinated with the City of Orinda as a condition of the land transfer of the Western Hills Open Space to the District.

State Regulations

California Public Resources Code § 5440 and Article 3, 5500 series are the primary State mechanism for assessing land use and planning in the Project area. These programs are summarized below.

Special District

The District is an independent special district under the State Public Resources Code. Under the California Public Resources Code (Article 3, 5500 series), the District has the power to:

> *"...acquire land...to plan...develop...and operate a system of public parks, playgrounds, golf courses, beaches, trails, natural areas, ecological and open space preserves, parkways, scenic drives, boulevards and other facilities for public recreation, for the use and enjoyment of all the inhabitants of the District...to conduct programs and classes in outdoor science education and conservation education...to employ a police force... prevent and suppress fires...and to do all other things necessary or convenient to carry out the purposes of the District."*.

As such, District parklands, including the Project area, are consistent with local zoning, but are otherwise independently managed.

Public Resources Code Section 5540

Under Public Resources Code Section 5540, the District is authorized to dedicate land or property rights for public park land and recreation use in perpetuity. This is a specific process through which the District Board of Directors, by formal resolution of dedications, specifies that certain described and mapped lands are set aside permanently as public parklands or trails. Section 5540.5 of the Public Resources Code provides that the Board may, by unanimous vote, exchange up to ten acres per year of dedicated land under specified circumstances. The District, with the participation of the citizen-based Park Advisory Committee (PAC), annually reviews its undedicated land holdings to determine which may be suitable for dedication in perpetuity. Based on this annual review, staff prepares a resolution recommending suitable land for dedication and presents it to the Board for adoption.

Applicable Policies of Agencies with Jurisdiction over the Project

City and county general plan policies provide guidance on District parklands from planning through project implementation. Relevant city and county general plan policies pertaining to land use and planning in the Project area are described in *Table 3.10-1, City and County General Plan Land Use Goals and Policies.*

TABLE 3.10-1
CITY AND COUNTY GENERAL PLAN GENERAL PLAN LAND USE GOALS AND POLICIES

City of Oakland Goals and Policies	Project Consistency
Approximately 57 acres of the Project area within the Preserve sub-area lie within the City of Oakland and are included in the Open Space, Conservation and Recreation (OSCAR) Element of the City of Oakland's General Plan. This Element indicates that future recreational use of the area should be limited to trails, scenic lookouts, or picnic areas, with a need for ongoing fuel reduction and vegetation management programs.	Project improvements within the Preserve sub-area (within the City of Oakland's boundaries are focused on improving existing recreation infrastructure in areas designated as Recreation/Staging Units, including additional parking in the existing staging areas, and water tank to serve park visitors. The District fuel reduction and vegetation management programs are ongoing consistent with City of Oakland goals and policies.
Contra Costa County Goals and Policies	**Project Consistency**
Approximately 872 acres of the Project area lie within unincorporated Contra Costa County. Recreation and conservation purposes are considered in the Chapter 8 (Conservation Element) and Chapter 9 (Open Space Element) of the Contra Costa County General Plan. Huckleberry Botanic Regional Preserve is identified as an ecologically significant resource area for its chaparral and broadleaf evergreen forest. The County General Plan also references the need to sponsor educational programs with the District to inform students regarding the need to respect agricultural uses in the county. Sibley Volcanic Regional Preserve is referenced in the Open Space Element as a major park and open space area that should be expanded to protect the unique resources of the County.	The Project does not include any actions that would result in a change to the Huckleberry Botanic Regional Preserve designation as an ecologically significant resource area. Project interpretive education programs focused on cultural resources and restoration efforts are consistent with Contra Costa County goals and policies. The Project would incorporate 639 acres of parkland into the 1985 LUDP, nearly doubling the size of Sibley Preserve.
City of Orinda Goals and Policies	**Project Consistency**
Approximately 389 acres of the Project area lie within the City of Orinda. The City of Orinda's General Plan contains guiding policies for recreation and conservation in the Project Area, including the Western Hills Open Space and trail, bikeway, and walkway connections to the Project Area from adjacent neighborhoods and the Wilder Subdivision, as well as connections into Western Hills from Valley View Drive Walkway, Woodland Road Walkway, Don Gabriel Way Sidewalk, and Edgewood Road. The General Plan noted the desirability of an emergency vehicle access (EVA) connecting the Wilder subdivision to the east through Edgewood Road.	Consistent with the City of Orinda's General Plan, the Project would include an emergency vehicle access (EVA) and walk/bike-in access from the southern perimeter of the Western Hills Open Space via the Edgewood Trail and walk/bike-in access at the north from the Wilder City Park via neighborhood streets. The Western Hills Open Space would be retained in a conservation easement in accordance with prior actions of the City and the environmental regulatory agencies.

District Mission and Policies

Master Plan Vision and Mission

The Master Plan adopted in 2013 defines the vision and mission of District with the core mission stated as follows:

> *"Preserve a rich heritage of natural and cultural resources and provide open space, parks, trails, safe and healthful recreation and environmental education. An environmental ethic guides the District in all of its activities."*

Per the District's Vision statement:

> *"The District envisions an extraordinary and well-managed system of open space parkland in Alameda and Contra County counties, which will forever provide the opportunity for a growing and diverse community to experience nature nearby."*

This vision will be achieved by:

- Providing a diversified system of regional parklands, trails and parkland-related services that will offer outstanding opportunities for creative use of outdoor time.
- Acquiring and preserving significant biologic, geologic, scenic and historic resources within Alameda and Contra Costa counties.
- Providing recreational development that fosters appropriate use of parklands while preserving their remoteness and intrinsic value.

Regional Preserve

Robert Sibley Volcanic Regional Preserve is considered one of the District's Regional Preserves. Development and use of the parkland parcels that would be added to this Preserve would adhere to the provisions of this type of parkland as defined in the District Master Plan.

The Master Plan identifies a Regional Preserve as:

> *An area with outstanding natural or cultural features protected for their intrinsic value as well as for public enjoyment and education. The size of a natural or cultural Preserve must be sufficient to ensure that its significant resource(s) can be managed so as to be protected and enjoyed. Significant resources consist of botanical, wildlife, geologic, topographic, archaeological, historic, or other features. The Recreation/Staging Unit(s) providing for public access and services will comprise no more than five percent of the area."*

Master Plan Policies

The District Master Plan contains policies guiding parkland acquisition, parkland dedications, parkland uses, and coordination with local cities and counties. Applicable policies are described in *Table 3.10-2, 2013 District Master Plan Land Use Goals and Policies.*

TABLE 3.10-2
2013 DISTRICT MASTER PLAN LAND USE GOALS AND POLICIES

Goals and Policies	Project Consistency
BPD1: The District will continue to acquire, develop and operate areas and facilities and to provide programs and services with the primary goal of achieving a long-term balance throughout the park system. The District will continue to allocate resources based on the populations from the most current census data for the West Metropolitan, South Metropolitan and Diablo sectors. To make most efficient use of public funds, the District will evaluate and seek to support and enhance the parks, programs and services of other agencies.	Consistent with Master Plan Policy BPD1, the Project includes Project Objective 4: Recreation Facility and Interpretive Program Elements which states: "*Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural pre-history and history.* Implementation of the Project would add to the recreation opportunities and distribute use over a larger segment of the growing West Metropolitan sector that serves a population of over 948,981 or 37 percent of the total District population.

Goals and Policies	Project Consistency
KEP5: The District will work actively with cities, counties, districts and other governmental agencies to assure that they understand and consider District interests. The District will protect its interests when other jurisdictions plan or approve projects that affect the District and will work with them to develop and articulate mutual goals that are consistent with the District's standards. The District will seek to understand the perspectives of other governmental agencies and to resolve conflicts in mutually satisfactory ways.	Consistent with Master Plan Policy KEP5, the District has worked actively with cities, counties, districts and other governmental agencies over many decades to acquire the Project area and to develop connectivity between multiple jurisdictions and, where appropriate, to combine use of facilities.
KEP6: The District will work with local governments and other agencies to develop funding agreements that offset the cost of maintaining and operating open space, parklands and trails accepted by the District in a manner consistent with the District's standards.	Consistent with Master Plan Policy KEP6, the District has worked actively with cities, counties, districts and other governmental agencies to establish endowments in trust to fund the management of the Western Hills conservation easement and McCosker sub-area.
PRPT1: The District will classify existing and potential parklands in the Master Plan. All District parks are categorized into one of the following five classifications: a. Regional Park b. Regional Preserve c. Regional Recreation Area d. Regional Shoreline e. Regional Trail At the time that the District prepares a Land Use Plan for a park, it will review the classification of the park and reclassify the park, if appropriate.	Consistent with Master Plan Policy PRPT1, the Project purpose, in part, is to amend the 1985 LUDP to incorporate the McCosker and Western Hills improvements. These parkland areas would be designated as a Regional Preserve consistent with the current classification for Robert Sibley Volcanic Regional Preserve. Proposed uses for the Project area are consistent with a Regional Preserve classification.
PRPT3: The primary objective of a Regional Preserve is to preserve and protect significant natural or cultural resources. A Regional Preserve must have great natural or scientific importance (for example, it may contain rare or endangered plant or animal species and their supporting ecosystems, significant fossils, unique geologic features, or unusual topographic features) or be of such significant regional historic or cultural value as to warrant preservation.	Consistent with Master Plan policy PRPT3, the Project purpose, is in part to: "*Preserve the rich heritage of natural and cultural resources and provide open space, trails, and safe and healthful recreation and environmental education*" in accordance with the provisions of the 2013 District Master Plan mission statement.
PRPT4: The size of a Natural or Cultural Preserve must be sufficient to ensure that its significant resource(s) can be managed so as to be protected and enjoyed. The significant resource(s) will consist of botanical, wildlife, geologic, topographic, archaeological, historic, or other features. The Recreation/ Staging Unit(s) providing for public access and services will comprise no more than five percent of the area.	Consistent with Master Plan Policy PRPT4, the Project would augment the Sibley Preserve by adding 639 acres to a parkland area bringing the total acreage of Sibley Preserve to 1,318 acres designated as a Regional Preserve. Moreover, 1,295 acres would be reserved as natural units, while Recreation/ Staging Unit(s) providing for public access and services would comprise approximately 12.4 acres, or about one percent of the area.
PRPT10: The District encourages the creation of local trail networks that provide additional access points to the regional parklands and trails in order to provide loop trail experiences and to connect the regional system to the community. The District will support other agencies in completing local trail networks that complement the Regional Trail system and will coordinate with local agencies to incorporate local trail connections into District brochures.	Consistent with Master Plan Policy PRPT10, the Project would provide an array of access points, including opening two access points that provide connections to local trail networks within the City of Orinda Wilder subdivision and city and county bike routes. The combination of added staging and new trail development would serve to improve community connections to the regional system that traverse the East Bay Hills.
PRPT11: Regional trails may be part of a national, state, or Bay Area regional trail system. The District will cooperate with other agencies and organizations to implement these multijurisdictional efforts.	Consistent with Master Plan Policy PRPT11, the Project would include segments of the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail. Added trails and campsites connecting to this regional trail network would help to regional agencies and trail organizations meet their plan objectives.

Goals and Policies	Project Consistency
PRPT12: To protect park resources while providing for regional recreational use and access, the District will prepare plans (Land Use Plans or System-wide Plans) that describe: • The various levels of resource protection and recreational intensity in the parks • Development projects and land management strategies for trails and parks. • Planning efforts will include consideration of proposals from the public. The District will strive to create and maintain up-to-date information about each of its parks. Significant changes or amendments to adopted plans will require further public comment and Board action.	Consistent with Master Plan Policy PRPT12, the Project is a Land Use Plan Amendment updating a 1985 LUDP incorporating lands obtained since the last amendment and new parkland features that would be brought to the public for comment and to the Board for consideration of action.
PRPT13: Land Use Plans will identify future resource management strategies and recreational use for entire parks and establish appropriate Land Use Designations. The District will continue to prepare Land Use Plans for new parks and will amend existing Land Use Plans as needed to accommodate growth and change.	Consistent with Master Plan Policy PRPT13, The Project identifies future resource management strategies and recreational uses and establishes appropriate Land Use Designations for the Project area.
PRPT16: The District will coordinate with other agencies and organizations involved in planning for jointly managed facilities that extend beyond its jurisdiction. When applicable, the District will use planning documents and California Environmental Quality Act (CEQA) documents produced by, or in cooperation with, other agencies for its park and trail planning and development.	The Project would be consistent with Master Plan Policy PRPT16 through the development of the EIR for the Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment Project and incorporation of the findings from the *2004 Montanera Supplemental EIR* for the Wilder development and the U.S. Fish and Wildlife Service Biological Opinion for the Western Hills Open Space, which identify the District as the jurisdiction that is to be the receiver of the Western Hills Open Space.
PRPT18: The District will coordinate with other agencies and organizations involved in planning for jointly managed regional trails or trails that extend beyond the District's jurisdiction. When applicable, the District will use planning and environmental studies done by or in cooperation with other agencies for trail planning and development.	Consistent with Master Plan Policy PRPT18, the Project would incorporate regional trails developed through District coordination with other agencies and organizations involved in planning for jointly managed regional trails, including the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail. The Project also identifies city and county bike and trail routes that connect to the Project area and extend beyond the District's jurisdiction.
PRPT19: The District will establish unit designations (Natural Units, Recreation/Staging Units) and Special Features (Special Protection Features and Special Management Features) in a LUP or a System-wide Plan and will identify these units in appropriate planning documents.	Consistent with Master Plan Policy PRPT19, the Project identifies unit designations (Natural Units, Recreation/ Staging Units) and Special Features (Special Protection Features and Special Management Features), as appropriate.
PRPT20: Natural, open space, or wildland areas with lower intensity recreational uses and facilities (primarily trails) will be designated as Natural Units. Natural Units will generally comprise the majority of parkland acreage, except in Regional Recreation Areas. Parklands will be designated as Natural Units to maintain open space and significant features in a cohesive area. A Natural Unit may contain Special Protection Features and Special Management Features.	Consistent with Master Plan Policy PRPT20, the Project would designate 1,295 acres (99 percent) of the Project area as Natural Units to maintain open space and significant features in a cohesive area and proposes the four-acre creek restoration area in the McCosker to be designated as a Special Protection Feature.
PRPT21: Areas of higher level recreational use and concentrations of service facilities will be designated as Recreation/Staging Units. Where possible, these areas will be clustered and located on the edges of the park.	Consistent with Master Plan Policy PRPT21, the Project concentrates recreational use and service facilities at the Project perimeter in proximity to Skyline Boulevard, Old Tunnel Road, Pinehurst Road, and Wilder Road. The Project would retain existing designations in the Preserve sub-area and add this designation to these sites in the Western Hills and McCosker sub-areas.

Goals and Policies	Project Consistency
PRPT24: The District will seek to locate facilities in a manner that preserves open space whenever possible. The District will design proposed facilities so that their color, scale, style and materials will blend with the natural environment. Park improvements will be designed to avoid or minimize impacts on wildlife habitats, plant populations and other resources.	Consistent with Master Plan Policy PRPT24, higher levels recreational use and concentrations of service facilities would be designated as Recreation/ Staging Units that would be located near the perimeter of the Project area. Recreation features in the Fiddleneck Field and Fern View Terrace would be designed so that their color, scale, style and materials would blend with the natural environment consistent with the following strategies identified Objective 4: Recreation Facility and Interpretive Program Elements: 1) "*combine interpretive and small rustic group camp recreation facilities within the McCosker sub-area into one facility limiting development to previously disturbed areas*;" and 2) "*improve public access routes to facilitate connections to developed recreation areas, while limiting and screening parking so it does not overwhelm the site or interfere with the scenic and visual resources*."
PRPT27: The District will fully comply with the requirements of the California Environmental Quality Act (CEQA) for the development of new facilities. Evidence of CEQA compliance will be provided in the planning document or separately as a project-specific CEQA document. The District will also comply, when appropriate, with National Environmental Policy Act (NEPA).	The Project would be consistent with Master Plan Policy PRPT27 through the development of the EIR for the Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment Project. Compliance with NEPA is not anticipated for this project as none of the property is located on federal lands and federal funding sources are not anticipated for the implementation of this project.

3.10.2 Existing Conditions

District Service Area

The District is comprised of regional parklands located throughout Alameda and Contra Costa counties. The District system now includes over 121,397 acres of District lands comprised of 73 regional parks, recreation areas, shorelines, preserves, wilderness, and land bank areas (*Figure ES-1, Project Location*). This includes 61 parks open and accessible to the public and 12 new parks in land bank status not currently open to the public. Robert Sibley Volcanic Regional Preserve comprises one of the 73 District parklands.

The Project area is located in the East Bay Hills at the boundary of Alameda and Contra Costa Counties between Tilden Regional Park and Redwood Regional Park. The Project includes three sub-areas totaling 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve: 1) Robert Sibley Volcanic Regional Preserve (Preserve); 2) Western Hills Open Space (Western Hills); and 3) the McCosker Parcel (McCosker), along with the 240-acre Huckleberry Regional Preserve.

Surrounding Land Uses

The area surrounding the Project is comprised of wildland-urban interface areas located on steep slopes within the East Bay Hills. The steep slopes and ridges of the East Bay Hills define the boundaries between the Preserve and Western Hills sub-areas and separate the City of Oakland from the Lafayette, Orinda and Moraga (Lamorinda) area.

The predominant land uses outside District-parklands north, south and west of the Preserve Sub-area and east of the Western Hills and McCosker sub-areas are low-density, single-family residential and protected watershed lands owned by EBMUD. The North Oakland Regional Sports Center lies to the south of the

Preserve sub-area and east of the McCosker sub-area. Where the City of Oakland borders the Preserve sub-area to the west and south, single family residential uses are the primary land use.

The City of Orinda lies to the east of the Western Hills sub-area. City of Orinda open space lands rise steeply from the Wilder residential development that will contain 245 home sites at full build out. These ridges generally separate the valley from previously developed residential neighborhoods within the City of Orinda including to the east, Brookside and Crestview, and to the south, Edgewood/Lost Valley. City of Orinda public serving facilities include small commercial areas, schools, parks, a library and government offices. Private facilities include golf courses and churches.

The unincorporated community of Canyon and the Town of Moraga are located to the south and east of the McCosker parcel. Canyon is a small rural residential community. Public facilities include Canyon Elementary School and a post office. In the Town of Moraga single family and townhouse developments are the primary land uses. Public-serving facilities include parks, small commercial areas, schools, and government offices. The Lafayette-Moraga Trail connects neighborhoods schools, businesses, and other amenities within the Town of Moraga. Private facilities include golf courses, churches and Saint Mary's College.

In-holdings within the Preserve sub-area located at the summit of Round Top contain communication facilities owned by EBMUD and Skyline Partners.

Refer to *Figure 3.10-1, Existing Public Facilities in the Project Vicinity* for the location of public facilities in the Project vicinity. Refer to *Figure 3.10-2, Easements, Agreements and Licenses* for the location of the conservation easement, inholdings, and other licenses and agreements.

3.10.3 Methodology and Assumptions

The methodology used to conduct the impact analysis included an evaluation of current conditions and actions recommended in the Project, a review of federal, state land use lands and polices, a review of local general plan policies of cities and counties with jurisdiction over the Project area, and a study of District plans, policies, and programs.

3.10.4 CEQA Significance Criteria

CEQA Significance Criteria

Based on the CEQA Guidelines Appendix G Section X, a project would cause adverse impacts related to public services if it would:

a) *Physically divide an established community?*

b) *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

c) *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

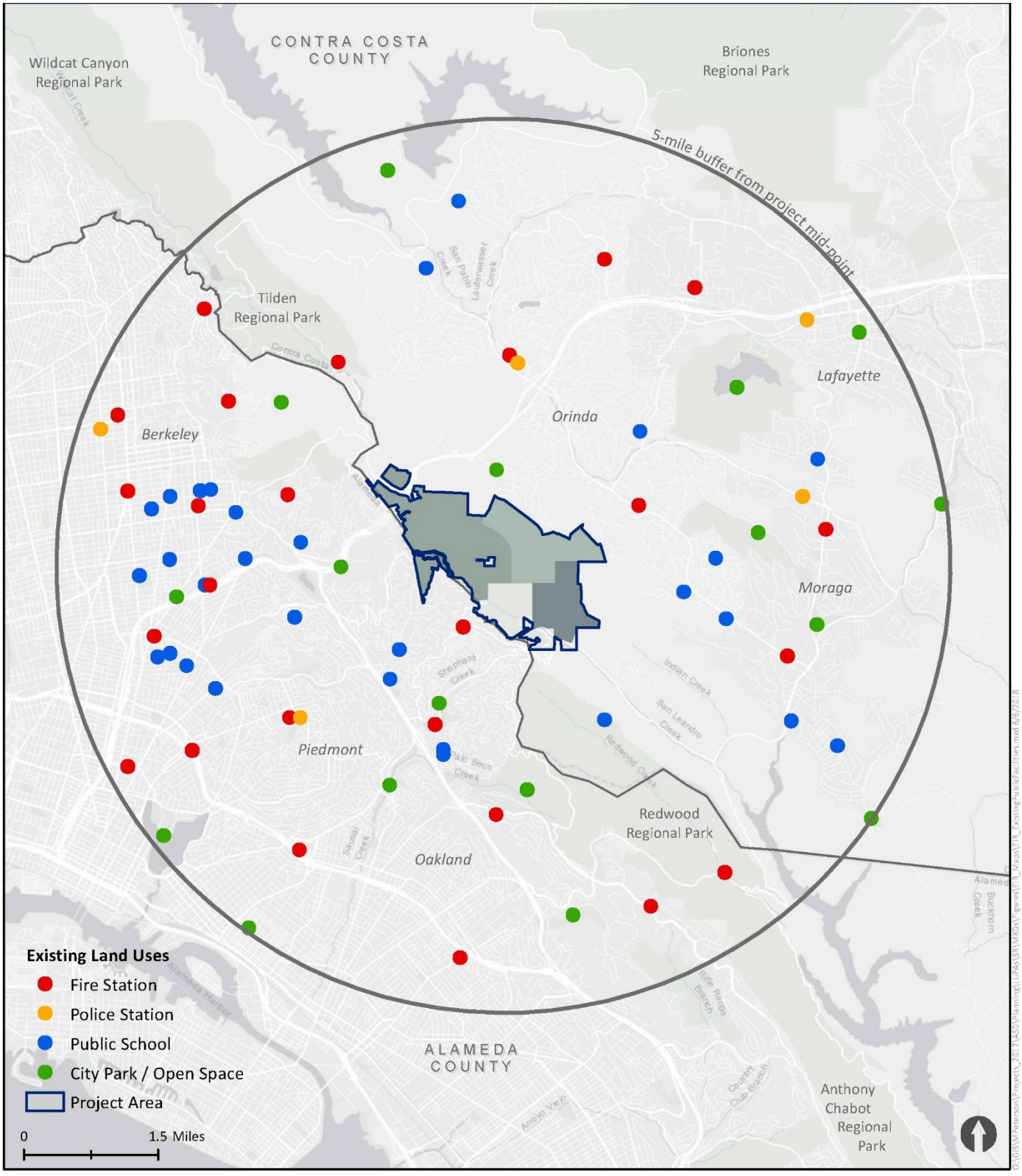

FIGURE 3.10-1: EXISTING PUBLIC FACILITIES IN PROJECT VICINITY

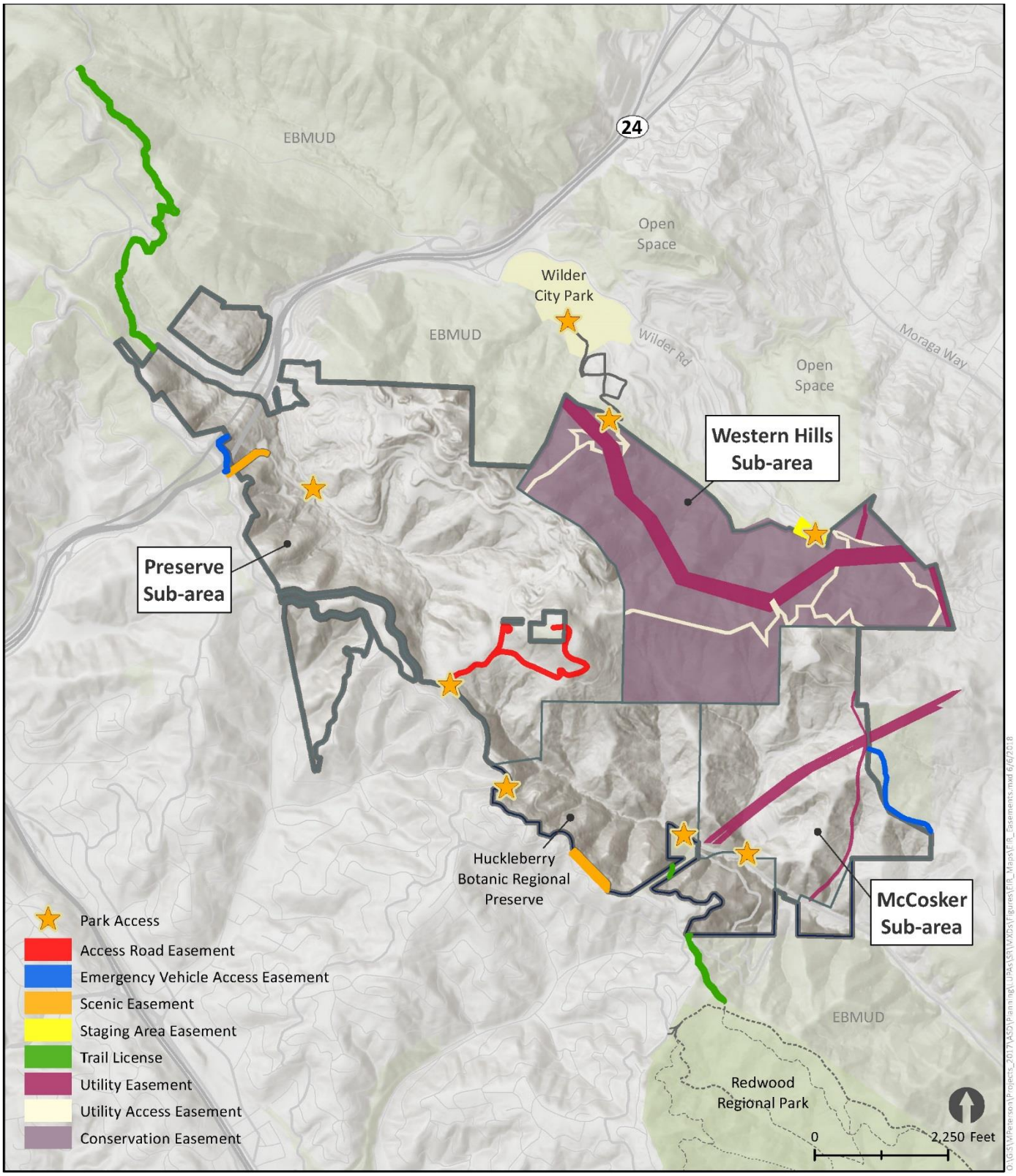

FIGURE 3.10-2: EASEMENTS, AGREEMENTS AND LICENSES

Criteria and Thresholds with No Impact or Not Applicable

Because of the nature of the Project and its physical setting, the Project would not result in impacts related to the following significance criteria; these criteria are not discussed in the impact analysis for the reasons described below.

a) Physically divide an established community. The Project area is comprised of contiguous parcels of land in the East Bay Hills referred to as: Robert Sibley Volcanic Regional Preserve (Preserve); Western Hills Open Space (Western Hills); the McCosker Parcel (McCosker) and Huckleberry Botanic Regional Preserve. The Project would add 639 acres to the 1985 Robert Sibley Volcanic Regional Preserve LUDP area and describes actions specific to the three sub-areas encompassing Sibley Preserve and actions within Huckleberry Preserve.

Access points into the Project area include easy entry from state highways and access from local neighborhoods helping to distribute use to communities on both sides of the East Bay Hills. The expanded trail system described as part of the Project would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities. Additionally, the Project would add to the parkland area adjoining the EBMUD protected watershed lands that provide a permanent open space corridor crossing over the Caldecott Tunnel /Highway 24, thereby providing continuity for both wildlife and park visitors that would otherwise be divided by Highway 24. As such, the Project would expand public recreational services and provide trail linkages that would connect communities currently divided by the physical geography of the East Bay Hills.

Therefore, the Project would add to connectivity between communities and augment services to those communities; not divide or disrupt the physical arrangement of an established community. Therefore, no significant impacts to an established community are anticipated. Thus, this criterion is not analyzed further in this EIR.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. The District is an independent, special district under the California Public Resources Code (Article 3, 5500 series). As such, District parklands, including the Project area, are consistent with local zoning, but are otherwise independently managed.

Consistent with District Master policy PRPT16 and PRPT18, the District coordinates with other agencies and organizations involved in planning and when applicable, the District uses planning and environmental studies done by or in cooperation with other agencies for trail planning and development, including the City of Orinda's *2004 Montanera Supplemental EIR* for the Wilder development and the *U.S. Fish and Wildlife Service Biological Opinion for the Western Hills Open Space*, which identify the District as the jurisdiction that is to be the receiver of the Western Hills sub-area.

As the Project is within the jurisdiction of the District, an independent special district, and conveyance of the Western Hills sub-area to the District was previously considered and previously analyzed under the provisions of CEQA and the *U.S. Fish and Wildlife Service Biological Opinion for the Western Hills Open Space*, the Project would be consistent with prior actions and not conflict with any applicable local land use plan, policy, or regulation of an agency with jurisdiction over the Project. Neither would it produce a significant impact on applicable land use plans or policies adopted by federal, state, or local agencies. Therefore, this criterion is not analyzed further in this EIR.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan. Although, the Western Hills Sub-area is largely contained within a conservation easement extending eastward from the ridgelines of the East Bay Hills to the western boundary of the Wilder residential development, the Project would not be within an area covered by a habitat conservation plan or natural community conservation plan. Additionally, management of the Western Hills Open Space is clearly laid out in the 2004 *U.S. Fish and Wildlife Service Biological Opinion*, and the *2006 Final Resource Management Plan for the Montanera Project*. Therefore, this criterion is not analyzed further.

3.10.5 Impact Analysis

a, b, c) The parklands that make up the Project area are a part of the East Bay Regional Park system operated by the District in accordance with the provisions of this special district including the power to *"...acquire land...to plan...develop...and operate a system of public parks…."* As such, there are no established communities located within the Project site and the Project would not introduce new land uses that would conflict with established or intended uses for these lands. Additionally, *the Long Term Management Plan for the Western Hills Open Space* that will govern use and management of the Western Hills Open Space specifically identifies conservation and recreation uses.

Implementation of the Project would not divide an established community or impede access to any established communities. The incorporation of additional staging areas and trails into the Project area would improve connections from local neighborhoods to this recreation area. The Project would not divide or disrupt the physical arrangement of an established community; neither would it produce a significant impact on applicable land use plans or policies adopted by state and federal agencies. Implementation of the Project would result in the District assuming responsibility for management of the established Western Hills Open Space Conservation Easement in accordance with the *2004 Montanera Supplemental EIR* for the Wilder development, the 2004 *U.S. Fish and Wildlife Service Biological Opinion*, and the *2006 Final Resource Management Plan for the Montanera Project* previously permitted and approved by the environmental regulatory agencies. Therefore, there would be *no impact* related to Land Use and Planning and no mitigation would be required.

Mitigation: None required.

3.10.6 Cumulative Effects

Geographic Extent/Context

The Project area is comprised of contiguous parcels of land or sub-areas in moderately steep to steeply sloping terrain within the East Bay Hills with prominent northwest-trending ridges bisected by interior valleys and side canyons. Implementation of the Project would not divide an established community, but would distribute use and provide better connectivity between communities through development of local trails, and extension of regional trail systems.

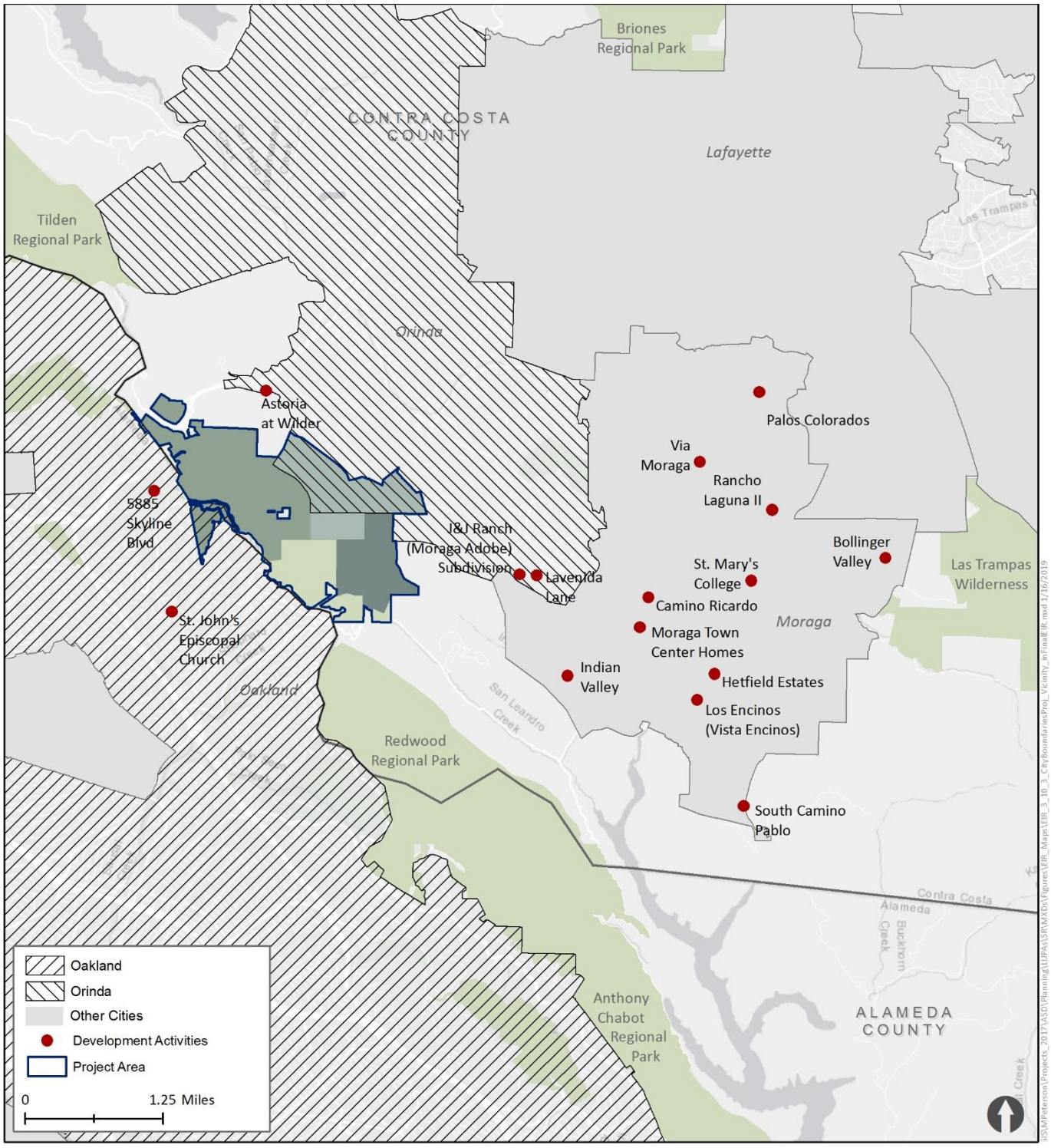

FIGURE 3.10-3: CITY BOUNDARIES IN PROJECT VICINITY

Past, Present, and Reasonably Foreseeable Projects

In the Project vicinity, there are several projects proposed that are listed in *Table 3.10-3, Pending Projects in the Project Vicinity* with locations provided in *Figure 3.10-2, Proposed Development Projects in Project Vicinity*. None of these planned projects are contiguous with the Project. All the pending projects, except one church project, are small-scale residential infill projects. As such, while the added parkland area and additional access points may benefit these projects by providing recreation opportunities in close proximity, none of them are expected to alter the status of the Project area as parkland and open space. Therefore, potential cumulative impacts related to land use and planning are likewise anticipated to be *less than significant*.

TABLE 3.10-3
PENDING PROJECTS IN THE PROJECT VICINITY

Project	Address/Locations	Land Use	Size	Status
Astoria at Wilder	1 Wilder Road, Orinda, CA	Residential	30 units on 1.1 acres (55,462-square-foot, 3-story senior assisted living facility)	Notice of Preparation of EIR posted on May 2, 2014.
J & J Ranch (Moraga Adobe) Subdivision	24 Adobe Lane, Orinda, CA	Low Density Residential	13 residential units on 20.33 acres	Approved in 2015; undergoing construction.
Lavenida Lane	Lavenida Lane and Donna Maria Way, Orinda, CA	Low Density Residential	8 residential units on a subdivided 12.2 acres	Approved in 2012; undergoing construction.
Camino Ricardo	North edge Moraga Center Specific Plan, between Camino Ricardo and Moraga Rd., Moraga, CA	Single Family Residential	26 units on 14.3 acres	Approved in 2014; grading and construction underway.
Via Moraga	489 Moraga Road, Moraga, CA	Single Family Residential	18 units on 1.9 acres	Approved in 2014; grading and construction underway.
Moraga Town Center Homes	Within Moraga Center Specific Plan Area between Moraga Way and Country Club Drive, Moraga, CA	Townhome Residential	36 units on 3.1 acres	Approved in 2016; undergoing construction.
Rancho Laguna II	Rheem Boulevard (South), Moraga, CA	Single Family Residential	27 units on 180 acres	Approved in 2011. Onsite grading began in 2015.
Hetfield Estates	Sanders Drive at Hetfield Drive, Moraga, CA	Single Family Residential	7 units on 65 acres	Approved in 2014, development not started.
Palos Colorados	Between Moraga Road and St. Mary's Road, Moraga, CA	Single Family Residential	123 units on 460 acres	Approved in 2016. Applicant preparing grading permit.
Bollinger Valley	Bollinger Valley, Moraga, CA	Single Family Residential	126 units on 186 acres	Final EIR released January 2017.
Los Encinos (Vista Encinos)	63-70 Vista Encinos, Moraga, CA	Single Family Residential	10 units	Approved in 2002. Design currently under review.
St. Mary's College	1928 St. Mary's Road, Moraga, CA	Institutional Project	Approximately 420 acres	Campus Master Plan Update in progress.
South Camino Pablo	Camino Pablo and Tharp Avenue, Moraga, CA	Single Family Residential	13 units on a 7-acre subdivision	Application submitted April 2015.
Indian Valley	Canyon Road, southwest of Indian Ridge, Moraga, CA	Single Family Residential	71 units on 140.9 acres	Conceptual development plan submitted December 2016.
5885 Skyline Blvd	5885 Skyline Boulevard, Oakland, CA	Single Family Residential / Mixed Use	50 units (senior housing facility)	Pre-application Discussion.
St. John's Episcopal Church	5928 Thornhill Dr. and 1707 Gouldin Rd, Oakland, CA	Church and Sanctuary	5,000 square-foot sanctuary	Application approved as of September 2016.

3.10.7 References

Alta Planning and Design. 2011. *City of Orinda Bicycle, Trails and Walkways Master Plan. Prepared for City of Orinda*.

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Town of Moraga. 2017. Major Projects Matrix. Accessed December 2017 http://www.moraga.ca.us/dept/planning/Major%20Projects/major-projects-matrix.

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Wetlands Research Associates (WRA), Inc. 2006. *Final Resource Management Plan for the Montanera Project*. Prepared for Orinda Gateway, LLC, Orinda California. April 21, 2006. Final Conforming Changes, June 23, 2006.

Wetlands Research Associates (WRA), Inc. 2006. *Long-Term Management Plan for the Montanera Preserve Areas: Western Hills Open Space Area*. June 27, 2006.

3.11 Mineral Resources

This section describes existing mineral resources within and in the vicinity of the Project area, and evaluates potential impacts to mineral resources that could result from implementation of the Project.

3.11.1 Regulatory Setting

Federal Regulations

No federal laws or regulations pertaining to mineral resources are applicable to the Project.

State Regulations

The Surface Mining and Reclamation Act (SMARA) is the primary State mechanism for defining mineral resources in the Project area. SMARA is summarized below.

Surface Mining and Reclamation Act of 1975

The SMARA was enacted in 1975 to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. SMARA includes a process called "classification-designation." The purpose of this process is to provide local agencies with information about the location, need and importance of various mineral resources within their jurisdiction, and to ensure this information is used in local land use decisions.

In accordance with SMARA, all mining activities in operation as of January 1976 and those placed in operation after that date shall be required to submit a surface mining and reclamation plan that provides for appropriate measures to rehabilitate the site prior to its abandonment. The California Department of Conservation's Division of Mine Reclamation and the State Mining and Geology Board (SMGB) jointly ensure proper administration of the Surface Mining and Reclamation Act's requirements. The SMGB promulgates regulations to clarify and interpret the Act's provisions, and serves as a policy/appeals board. The Office of Mine Reclamation provides an ongoing technical assistance program for lead agencies and operators, maintains a database of mine locations and operational information statewide, and is responsible for compliance related matters.

The California Geological Survey has produced a report and a series of Mineral Land Classification Maps for the area that designate Mineral Resources Zones (MRZs), established by the State Mining and Geology Board (SMGB), as follows:

- **MRZ-1** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.

- **MRZ-3** Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4** Areas where available information is inadequate for assignment to any other MRZ zone.

Applicable Policies of Agencies with Jurisdiction over the Project

City and county general plan policies provide guidance on District parklands from the planning through project implementation. Relevant city and county general plan policies pertaining to mineral resources are described in *Table 3.11-1, City and County General Plan Goals and Policies Relating to Mineral Resources.*

TABLE 3.11-1
CITY AND COUNTY GENERAL PLAN GOALS AND POLICIES RELATING TO MINERAL RESOURCES

City of Oakland Goals and Policies	Project Consistency
CO-3.2: Quarry Operations: Require existing and abandoned mineral extraction activities to mitigate the effects of their operations on surrounding areas, including the clean-up and reclamation of mining sites. Prohibit new quarrying activity in Oakland except upon clear and compelling evidence that the benefits will outweigh the resulting environmental, health, safety, aesthetic, and quality of life costs.	In the 1940s-1960s Kaiser Sand and Gravel Company operated a quarry in the Preserve sub-area and the McCosker family operated quarrying and construction businesses in the 1950s and 1960s. Both operations were non-operational by the time the District acquired these lands in 1977 and 2010 respectively. Since then, several reclamation projects affiliated with an old, abandoned quarry pit in the Preserve sub-area were completed to mitigate the effects of prior operations. EBMUD accomplished a substantial amount of this reclamation work between 2000 and 2003. The District has continued with site reclamation work as site-specific erosion problems have been identified. The McCosker sub-area was cleaned up by private parties prior to the land being transferred to the District.
Contra Costa County Goals and Policies	**Project Consistency**
8-60: Opportunities to recycle resources and materials related to quarrying operations shall be encouraged where they are compatible with adjacent land uses.	Consistent with Policy 8-60, existing concrete walls remaining from the construction and quarrying business that formerly operated in the McCosker sub-area would be retained and incorporated into the design of the Fern View Terrace, along with interpretive elements describing the rock crushing operation. These exhibits would provide opportunities for visitors to learn about the history of the area and to understand the prior use of remnant features.
City of Orinda Goals and Policies	**Project Consistency**
4.1: Mineral Resources: The Orinda Planning Area contains two areas that may be designated by the State Mining and Geology Board as resources sections for construction aggregate… the City of Orinda has officially protested the possible designation of these sites as significant regional mineral resources, and the General Plan policies prohibit mineral resource extraction.	Significant regional mineral resources are not indicated to be within the Project Area based on the Mineral Resources Sectors Map in the Orinda General Plan.

District Mission and Policies

There are no specific Master Plan policies pertaining to mineral resources.

3.11.2 Existing Conditions

Historically, the extraction of mineral resources played an important historical role of the lands now contained within the Project area.

Kaiser Sand and Gravel Company operated the quarry in the Preserve sub-area sometime during the 1940s-1960s. This quarry was non-operational by the time the District acquired the land in 1977. Since then, several reclamation projects affiliated with an old, abandoned quarry pit were completed in the Preserve sub-area to mitigate the effects of prior operations. EBMUD accomplished a substantial amount of this reclamation work between 2000 and 2003. The District has continued with site reclamation work as site-specific erosion problems have been identified.

The Upton Quarry was located on lands adjacent to, but not within, the Western Hills sub-area (now Wilder residential development). This quarry was worked by Kaiser Industries from 1944 to 1954. Kaiser obtained gravel from surface mining of the basalts, using a ripping technique to excavate (Montanera EIR). Visual scars from these operations are still visible from the Western Hills sub-area when looking east to the Orinda Open Space parcels.

The McCosker family operated quarrying and construction businesses within the McCosker sub-area between 1953 and 1971. Personal communication with Dwayne McCosker (2013 – 2014) established that Alfred McCosker began a rock crushing operation in the 1950s after Caltrans proposed to construct the Shepard Canyon freeway through the McCosker sub-area to connect Highway 13 in the East Bay to the City of Walnut Creek. Mr. McCosker's intent was to supply the highway project with rock. Although the Caltrans project never materialized, the crushed rock was used to produce gravel for roads and as stream fill throughout the McCosker sub-area, in addition to supplying gravel for local construction projects. The McCosker sub-area was largely cleaned up by private parties prior to the transfer to the District, although remnant concrete walls and some other features remain from the construction and rock crushing business.

3.11.3 Research Methodologies

In accordance with CEQA, this analysis of mineral was conducted to determine whether there are known mineral resources within the Project area based on state and local guidelines governing their protection, extraction and remediation.

3.11.4 Significance Thresholds

CEQA Significance Criteria

Based on the CEQA Guidelines Appendix G Section XI, a project would cause adverse impacts related to mineral resources if the project would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Criteria and Thresholds with No Impact or Not Applicable

Because of the nature of the Project and its physical setting, the Project would not result in impacts related to the following significance criteria; these criteria are not discussed in the impact analysis for the reasons discussed below.

a) Result in the loss of availability of a known mineral resource. The Project is identified as within or near a State-designated, regionally significant mineral resource site with the designation of MRZ-2, or areas where adequate information indicates significant mineral resources are present, or where it is judged that a high likelihood for their presence exists. As depicted in the California Department of Conservation, Division of Mines and Geology's 1996 Designated Areas Update Map for the Oakland East Quadrangle, portions of the Project area are within or near Resource Sector U, which is situated on the northwestern half of Gudde Ridge and contains basalt and andesite of the Moraga Formation (Refer to *Figure 3,11-1, Regionally Significant Aggregate Resource Areas*). Extensive quarrying previously occurred in this sector to mine the basalt and andesite for ballast, road base and fill, evidently in connection with the construction of Highway 24 and the Bay Area Rapid Transit (BART); however, there are no presently active quarries and there are no Project activities proposed to occur in this area.

As no known mineral resources of value to the region or the State would be affected by development of the Project, the 1985 LUDP designates the former quarry site as a special geological protection feature (refer to *Figure 2-4, Special Protection Features*), and the Project includes interpretive program actions directed at interpreting former quarrying actions, the Project would not result in an impact to known mineral resources of value to the region or the State. Therefore, this criterion is not discussed further in this EIR.

b) Result in the loss of availability of a locally important mineral resource recovery site. The Project site is not designated in the Contra Costa County General Plan as an area of locally-important mineral resource recovery site. Locally-important mineral resources comprised of construction aggregate are located approximately 12 miles north of the Project area in Port Costa, as indicated in the Contra Costa County General Plan. The Project does not include activities that would affect these mineral resources. Implementation of the Project would not interfere with current or future mineral extraction activities within the vicinity. Furthermore, the site is located within an open space preserve in an area surrounded by open space lands and residential properties. No mining activities are occurring or would occur in the future at or within the vicinity of the Project site. Interpretation of past quarrying uses area in the Project area is currently covered in programming for the Preserve sub-area and would be expanded upon in District interpretive programs and exhibits with implementation of the Project. Therefore, the Project would not result in the loss of availability of a known mineral resource of value to the region or residents of the State. As no impact to a known mineral resource recovery site would occur, this criterion is not discussed further in this EIR.

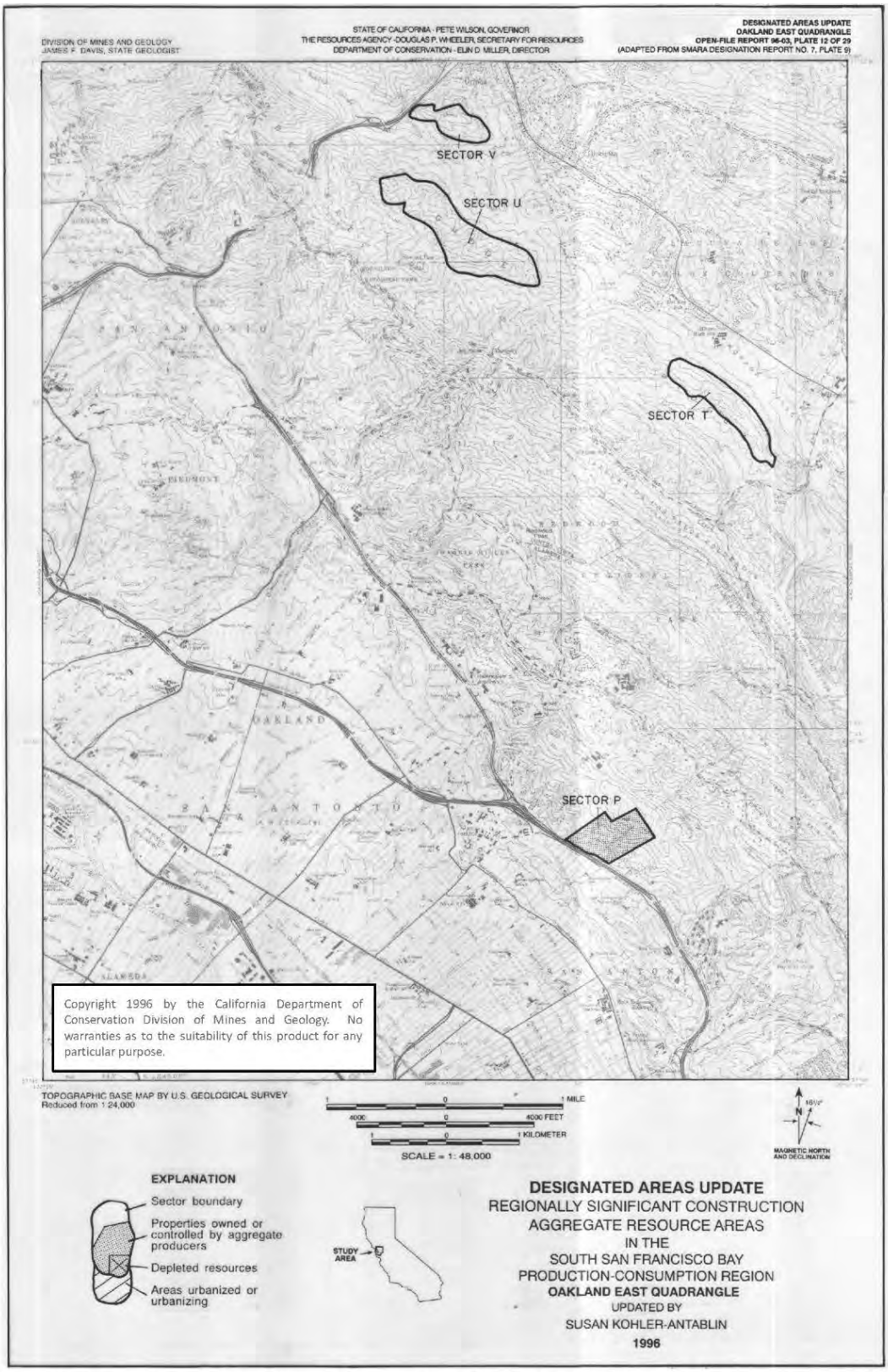

FIGURE 3.11-1 REGIONALLY SIGNIFICANT CONSTRUCTION AGGREGATE RESOURCE AREAS (Source: California Department of Conservation Division of Mines and Geology)

3.11.5 Impact Analysis

a), b) Although extraction of mineral resources has played an important historical role of the lands now contained within the Preserve, there are currently no mining activities within the Project area and the Project does not propose any mineral extraction activities in the future. Interpretation of past mineral extraction activities currently covered for the Preserve sub-area would be expanded upon in District interpretive programs and exhibits in the future. Reestablishment of mining operations for the extraction of mineral resources is not a part of the Project. Therefore, there would be *no impact* to mineral resources.

3.11.6 Cumulative Effects

Geographic Extent/Context

The geographic extent/context of the cumulative analysis for the Project area is Contra Costa County and the Cities of Orinda and Oakland. The State Mining and Geology Board typically designates Mineral Resource Zones at the county level, and the Contra Costa County General Plan analyzes mineral availability county-wide. The nearest active mining operation to the Project area is the Tidewater Sand and Gravel, located in Richmond, California, approximately ten miles southwest of the Project area. There are presently no active mining sites at or within the Project area, and no mining activities are occurring or would occur in the future at or within the vicinity of the Project site.

Past, Present, and Reasonably Foreseeable Projects

The Project, when considered in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable impact to mineral resources. As shown in *Table 3.10-3, Pending Projects in the Project Vicinity* and in *Figure 3.10-2, Proposed Development Projects in Project Vicinity* in *Section 3.10, Land Use and Planning*, projects within the general vicinity of the site are generally limited to small-scale residential infill projects. Furthermore, foreseeable projects would be designed or conditioned, in accordance with County or City policies, to avoid significant adverse effects to mineral resources and development of mining operations in surrounding areas is generally not permitted. Therefore, present, and future projects in the area are not expected to result in a significant cumulative impact to mineral resources. Therefore, impacts to mineral resources would be *less than significant*.

3.11.7 References

California Department of Conservation. 1996. *Designated Areas Update, Regionally Significant Construction Aggregate Resource Areas in the South San Francisco Bay Production-Consumption Region, Oakland East Quadrangle Map.* Updated by Susan Kohler-Antablin.

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3.12 Noise

3.12.1 Regulatory Framework

The setting section begins with an introduction to several key concepts and terms that are used in evaluating noise. This section also includes a description of current noise sources that affect the Project site and the noise conditions that are experienced in the Project vicinity. The federal, State, and local framework for noise standards is also outlined below.

Characteristics of Sound

Noise is usually defined as unwanted sound and consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect our ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves, combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be measured precisely with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses (e.g., residences, nursing homes, schools).

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units (e.g., inches or pounds), decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) are 10 times more intense than 1 dB; 20 dB are 100 times more intense than 1 dB; and 30 dB are 1,000 times more intense than 1 dB. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dBA for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If

noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dBA for each doubling of distance in a hard-site environment, and the sound decreases 4.5 dBA for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average level (L_{dn}) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as evening hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable.

Other noise rating scales that are important when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half of the time the noise level exceeds this level, and half of the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater since this level has been found to be the lowest audible change perceptible to humans in outdoor environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB, which is only noticeable in laboratory environments. The last category includes changes in noise levels of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure (typically more than 8 hours, as defined by the Occupational Safety and Health Administration [OSHA]) to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions (thereby, affecting blood pressure and functions of the heart and the nervous system). In comparison, extended periods of noise

exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dB, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dB, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dB will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas.

TABLE 3.12-1
DEFINITIONS OF ACOUSTICAL TERMS

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.

SOURCE: Harris, Cyril M., *Handbook of Acoustical Measurements and Noise Control*, 1991.

TABLE 3.12-2
COMMON SOUND LEVELS AND THEIR NOISE SOURCES

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations [a]
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a few feet away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as oud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	Reference Level
Near Freeway Auto Traffic	70	Moderately Loud	
Average Office	60	Moderate	1/2 as loud
Suburban Street	55	Moderate	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	1/4 as loud
Large Transformer	45	Quiet	
Average Residence Without Stereo Playing	40	Faint	1/8 as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing

Note:
[a] The threshold of hearing is the baseline.
SOURCE: Compiled by LSA, 2015.

Characteristics of Groundborne Vibration

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may be perceptible from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. When assessing annoyance from groundborne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second.

To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Groundborne vibrations are almost never annoying to people who are outdoors. Although the motion of the ground may be perceived,

without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

Common sources of groundborne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in *Table 3.12-3 - Typical Vibration Source Levels for Construction Equipment*. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data provides a reasonable estimate for a wide range of soil conditions. In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. For buildings considered of particular historical significance or that are particularly fragile structures, the damage threshold is approximately 96 VdB; the damage threshold for other structures is 100 VdB.[1]

TABLE 3.12-3
TYPICAL VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment		PPV at 25 ft (in/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
Pile Driver (impact)	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
Pile Driver (sonic)	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Notes:
PPV = peak particle velocity
In/sec = inches per second

SOURCE: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

[1] Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control.*

TABLE 3.12-4
SUMMARY OF U.S. EPA NOISE LEVELS

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq$ dB	Other indoor areas with human activities such as schools, etc.

SOURCE: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

Federal Regulations

In 1972 Congress enacted the Noise Control Act. This act authorized the (U.S. EPA) to publish descriptive data on the effects of noise and establish levels of sound *requisite to protect the public welfare with an adequate margin of safety*. These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in *Table 3.12-4 – Summary of U.S. EPA Noise Levels*. The U.S. EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq(24)}$ of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The U.S. EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in *Table 3.12-5 – Summary of Human Effects in Areas Exposed to 55 dBA CNEL*. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no community reaction. However, one percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

TABLE 3.12-5
SUMMARY OF HUMAN EFFECTS IN AREAS EXPOSED TO 55 dBA CNEL

Type of Effects	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 1.4 feet. 99 percent sentence intelligibility (average) at 3.2 feet. 95 percent sentence intelligibility (average) at 11.5 feet.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

SOURCE: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

State of California Regulations

The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the *State Noise Insulation Standard*, it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL. The Project would not include any new buildings; therefore, these regulations are not applicable to the Project and are provided for informational purposes only.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses.

Regional and Local Policies

City and county general plan policies provide guidance on District parklands from planning through implementation. Relevant city and county general plan policies pertaining to noise in the Project area are described in *Table 3.12-6 – City and County General Plan Noise Policies.*

TABLE 3.12-6
CITY AND COUNTY GENERAL PLAN NOISE POLICIES

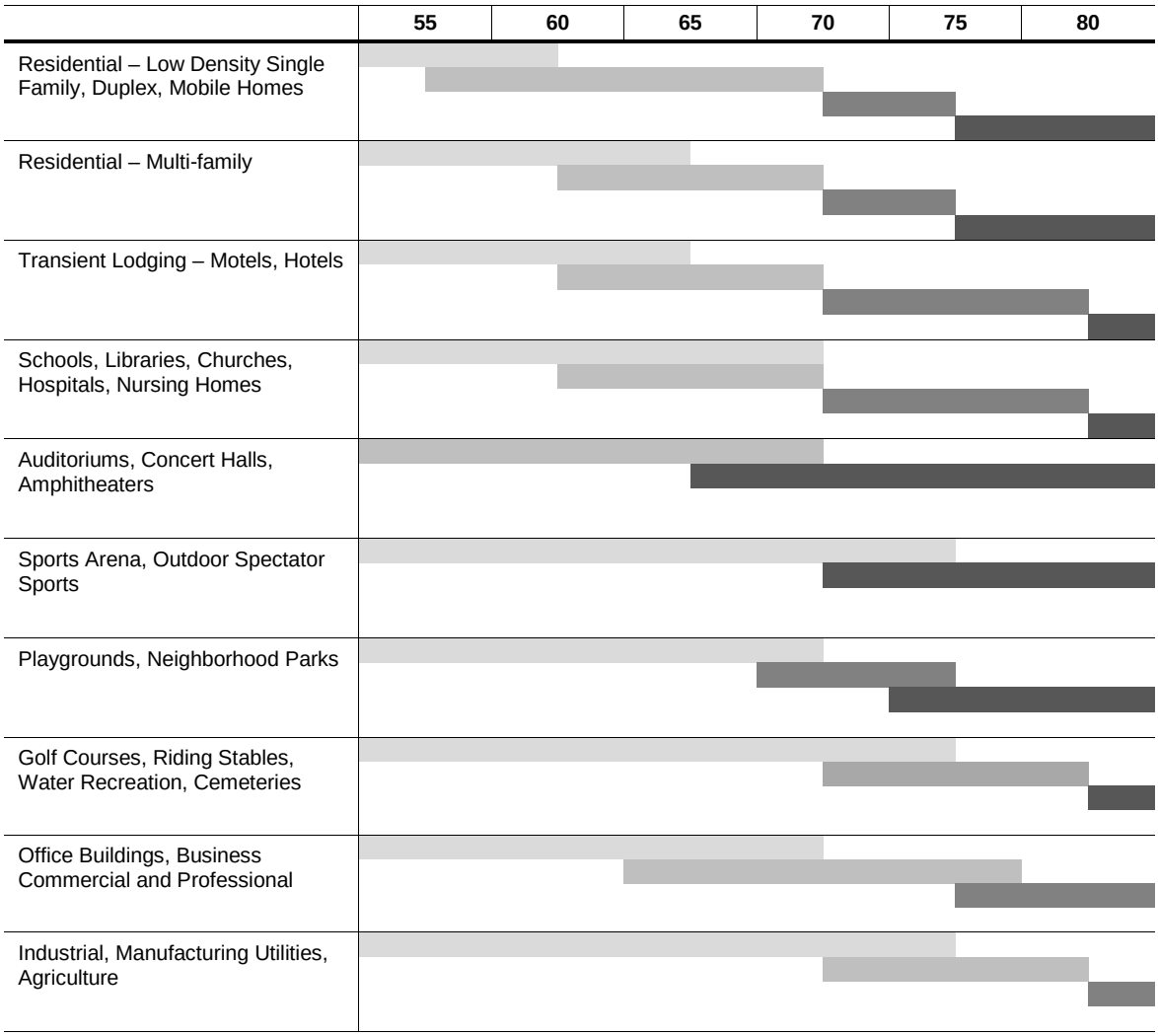
Contra Costa County Goals and Policies	Project Consistency
Policy 11-1: New projects shall be required to meet acceptable exterior noise level standards as established in the Noise and Land Use Compatibility Guidelines contained in *Table 3.12-7 - Community Noise Exposure Ldn or CNEL, dB*. These guidelines, along with the future noise levels shown in the future noise contours maps, should be used by the county as a guide for evaluating the compatibility of "noise-sensitive" projects in potentially noisy areas.	Based on the long-term noise monitoring conducted, the Project's noise environment is consistent with Contra Costa County noise and land use compatibility standards.
Policy 11-2: The standard for outdoor noise levels in residential areas is a DNL of 60 dB. However, a DNL of 60 dB or less may not be achievable in all residential areas due to economic or aesthetic constraints. One example is small balconies associated with multi-family housing. In this case, second and third story balconies may be difficult to control to the goal. A common outdoor use area that meets the goal can be provided as an alternative.	The Project would not result in any permanent increase in ambient noise levels where an area is currently below the maximum "normally acceptable" noise level up to the maximum. In addition, the Project would not result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the Project vicinity that are currently exposed to noise levels above the County of Contra Costa normally acceptable threshold for that type of land use.
Policy 11-6: If an area is currently below the maximum "normally acceptable" noise level, an increase in noise up to the maximum should not be allowed necessarily.	The Project would not result in any permanent increase in ambient noise levels where an area is currently below the maximum "normally acceptable" noise level up to the maximum.
Policy 11-7: Public projects shall be designed and constructed to minimize long-term noise impacts on existing residents.	The proposed Project would include the implementation of Mitigation Measure 3.12-1 which would ensure that construction of projects associated with the proposed Project would not result in adverse noise impacts from construction activities and would ensure that construction activities occur during the less sensitive hours of the day.
Policy 11-8: Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.	The Project would not result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the Project vicinity that are currently exposed to noise levels above the County of Contra Costa normally acceptable threshold for that type of land use.
Policy 11-11: Noise impacts upon the natural environment, including impacts on wildlife, shall be evaluated and considered in review of development projects.	The Project would not result in any permanent increase in ambient noise levels where an area is currently below the maximum "normally acceptable" noise level up to the maximum. In addition, the Project would not result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the Project vicinity that are currently exposed to noise levels above the County of Contra Costa County normally acceptable threshold for that type of land use.

City of Orinda Goals and Policies	Project Consistency
Policy 4.3.1-A: Where practical, mitigate traffic noise to all acceptable levels.	The Project would not increase traffic noise above the normally acceptable range at the nearby residential land uses.
Policy 4.3.1-B: Prevent unnecessary noise from all sources.	The proposed Project would not result in any permanent increase in ambient noise levels where an area is currently below the maximum "normally acceptable" noise level up to the maximum. In addition, the proposed Project would not result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the Project vicinity that are currently exposed to noise levels above the City of Orinda normally acceptable threshold for that type of land use.
City of Oakland Goals and Policies	**Project Consistency**
Policy 1: Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.	Based on the long-term noise monitoring conducted, the Project's noise environment is consistent with City of Oakland noise and land use compatibility standards.
Policy 2: Protect the noise environment by controlling the generation of noise by both stationary and mobile noise sources.	The Project would not result in any permanent increase in ambient noise levels where an area is currently below the maximum "normally acceptable" noise level up to the maximum. In addition, the proposed Project would not result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the Project vicinity that are currently exposed to noise levels above the City of Oakland normally acceptable threshold for that type of land use.
Policy 3: Reduce the community's exposure to noise by minimizing the noise levels that are received by Oakland residents and others in the City.	Based on the long-term noise monitoring conducted, the Project's noise environment is consistent with City of Oakland noise and land use compatibility standards.

The Contra Costa County Noise Element sets noise and land use compatibility guidelines, as shown in *Table 3.12-7 – Contra Costa County Community Noise Exposure L_{dn} or CNEL, dB.* [2]

[2] Contra Costa, County of, 2010. *Contra Costa County General Plan 2005 – 2020.* July.

TABLE 3.12-7
CONTRA COSTA COUNTY COMMUNITY NOISE EXPOSURE L_{DN} OR CNEL, DB



NOTES:

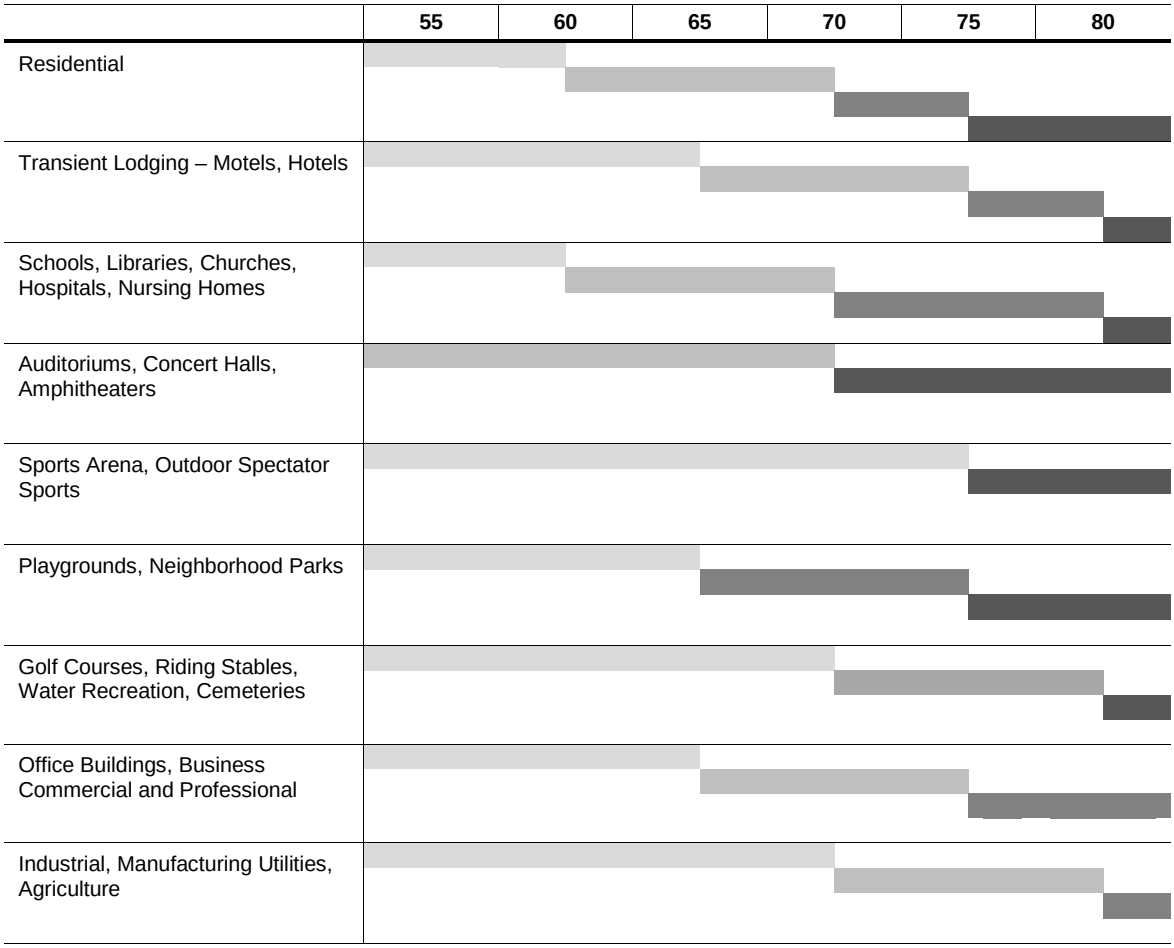
Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved meet conventional construction standards, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development clearly should not be undertaken.

SOURCE: Contra Costa County, 2010.

The City of Oakland Noise Element sets noise and land use compatibility guidelines, as shown in *Table 3.12-8 – City of Oakland Community Noise Exposure L_{dn} or CNEL, dB.* [3]

3 Oakland, City of, 2005. *City of Oakland General Plan Noise Element.* March. .

TABLE 3.12-8
CITY OF OAKLAND COMMUNITY NOISE EXPOSURE L_{DN} OR CNEL, DB



NOTES:

Normally Acceptable	Development may occur without an analysis of potential noise impacts to the proposed development (though it might still be necessary to analyze noise impacts that the project might have on its surroundings).
Conditionally Acceptable	Development should be undertaken only after an analysis of noise-reduction requirements is conducted, and if necessary noise-mitigating features are included in the design. Conventional construction will usually suffice as long as it incorporates air conditioning or forced fresh-air-supply systems, though it will likely require that project occupants maintain their windows closed.
Normally Unacceptable	Development should generally be discouraged; it may be undertaken only if a detailed analysis of the noise-reduction requirements is conducted, and if highly effective noise insulation, mitigation or abatement features are included in the design.
Clearly Unacceptable	Development should not be undertaken.

SOURCE: City of Oakland, 2005.

City of Orinda Municipal Code

The City of Orinda also addresses noise in the City's Municipal Code.[4] Chapter 17.39 – Noise Control states that no person shall cause or permit noise on property owned, leased, occupied or otherwise in the control of that person which exceeds 60 dB as measured at a listening point on any other property. However, the Municipal Code also states that construction noise is exempt from the 60 dB limit when activities occur between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 10:00 a.m. and 5:00 p.m. on Saturdays. No construction is allowed on Sundays or holidays. The Project would not include any construction work within the City of Orinda; therefore, this regulation is not applicable to the Project and is provided for informational purposes only.

City of Oakland Municipal Code

The City of Oakland's Municipal Code[5] includes various provisions intended to reduce nuisance noise impacts to noise-sensitive receptors associated with existing noise sources and events. The code also regulates noise from construction activity by establishing maximum allowable daytime average receiving noise levels as measured at receiving property lines. The maximum allowable construction noise levels are shown in Table 3.12-9 below.

TABLE 3.12-9
CITY OF OAKLAND CONSTRUCTION NOISE STANDARDS AT RECEIVING PROPERTY LINE, DBA

Receiving Land use	Maximum Allowable Noise Level	
	Weekdays 7:00 a.m. to 7:00 p.m.	**Weekends 9:00 a.m. to 8:00 p.m.**
Less Than 10 Days		
Residential	80	65
Commercial	85	70
More Than 10 Days		
Residential	65	55
Commercial	70	60

NOTES:
If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

SOURCE: *City of Oakland Planning Code Section 17.120.050.*

Municipal Code 17.120.060 also outlines the City of Oakland's performance standards with regards to residential development exposed to groundborne vibration. The code restricts all activities outside of the M-40 and M-30 zones from creating a vibration that would be perceptible without instruments by the average person at or beyond any property line of the lot containing

[4] Orinda, City of, 2017. *Orinda Municipal Code.* November 22.
[5] Oakland, City of, 2018. *Oakland Municipal Code.* May 8.

such activities. Groundborne vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempt from this standard.

Municipal Code Section 8.18.020 restricts emission of annoying human, animal, or mechanical noise levels between the hours of 9:00 p.m. and 7:00 a.m. that would result in disturbing the peace or comfort of any persons. This section also outlines compliance provisions for noise emitting construction equipment. The proposed project would not include any construction work within the City of Oakland; therefore, this regulation is not applicable to the proposed project and is provided for informational purposes only.

East Bay Regional Park District

Master Plan

The District's 2013 Master Plan contains policies for achieving the highest standards of service in resource conservation, management, interpretation, public access, and recreation. The goal of the Master Plan is to maintain a careful balance between the need to protect and conserve resources and the need to provide opportunities for recreational use of the parklands. There are no specific Master Plan policies addressing noise.

Park Rules and Regulations: Ordinance 38

Portions of EBRPD Ordinance 38 address noise. This section is briefly summarized in *Table 3.12-10, Relevant Ordinance 38 Sections* below.

TABLE 3.12-10
RELEVANT ORDINANCE 38 SECTIONS

Section 908.2 This section states that, "it is the policy of the District to prohibit unnecessary, excessive, annoying noises from all sources subject to its police power, including within the sleeping quarters of campgrounds of the District between the hours of 10:00 p.m. and 7:00 a.m. daily."
Section 908.3 This section states that, "it unlawful to install use or operate within the District a loudspeaker or sound-amplifying equipment… for the purpose of transmitting music to any persons or assemblages of persons without filing a registration statement with and obtaining approval from the General Manager. Furthermore, such approval may be granted to operate such devices or equipment only within designated amphitheater areas maintained by the District for such purposes, or other such similar areas as the Board may from time to time so designate."
Section 908.7 This section states that, "The use of sound-amplifying equipment shall be subject to the following regulations: a) The operation of sound-amplifying equipment shall only occur between the hours of 10:00 a.m. and 8:00 p.m. each day, and b) the volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jarring, disturbing or a nuisance to reasonable persons of normal sensitiveness within the area of audibility."
Section 908.8 This section states that, "it is unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary or unusual noise which disturbs the peace or quiet within any area within the District or which causes discomfort or annoyance to any reasonable person of normal sensitiveness utilizing any facility of the District."

3.12.2 Existing Conditions

This section describes the existing noise environment in the Project vicinity. Noise monitoring, traffic modeling, and noise modeling were used to quantify existing and future noise levels at the Project site.

Ambient Noise Levels

The primary noise source impacting the Project area results from traffic on Skyline Drive. Other noise sources not related to vehicles include birds and airplanes. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust systems. Airport related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. The Oakland International Airport is the closest airport and is located approximately 9 miles southwest of the Project site. Buchannan Field Airport is located approximately 11 miles northeast of the Project and San Francisco International Airport is located approximately 18 miles southwest of the Project. Aircraft noise is occasionally audible at the Project site; however, no portion of the Project area lies within the 65 dBA CNEL noise contours of these airports.

To assess existing noise levels, LSA conducted a short-term noise measurement on the Project site on October 6, 2017 between 12:42 p.m. and 12:57 p.m. LSA also conducted two long-term noise measurements on the Project site between October 3, 2017 and October 6, 2017. The long-term noise measurements captured hourly L_{eq} data as well as CNEL data, which incorporates the nighttime hours. Noise measurement data collected during the short-term and long-term noise monitoring is summarized in *Table 3.12-11 - Ambient Noise Monitoring Results, dBA*. The meteorological data conditions at the time of the short-term noise monitoring are shown in *Table 3.12-12 – Meteorological Conditions During Ambient Noise Monitoring*. The noise measurement sheets are included in Appendix H. Noise measurement locations are shown in *Figure 3.12-1, Noise Measurement Locations.*

As shown in *Table 3.12-11 - Ambient Noise Monitoring Results, dBA*, the short-term noise measurements indicate that ambient noise in the Project vicinity is approximately 47.2 dBA L_{eq}. The long-term noise measurements indicate that noise in the Project vicinity ranges from approximately 50.4 dBA to 65.7 dBA CNEL. Traffic on Skyline Drive was reported as the primary noise source.

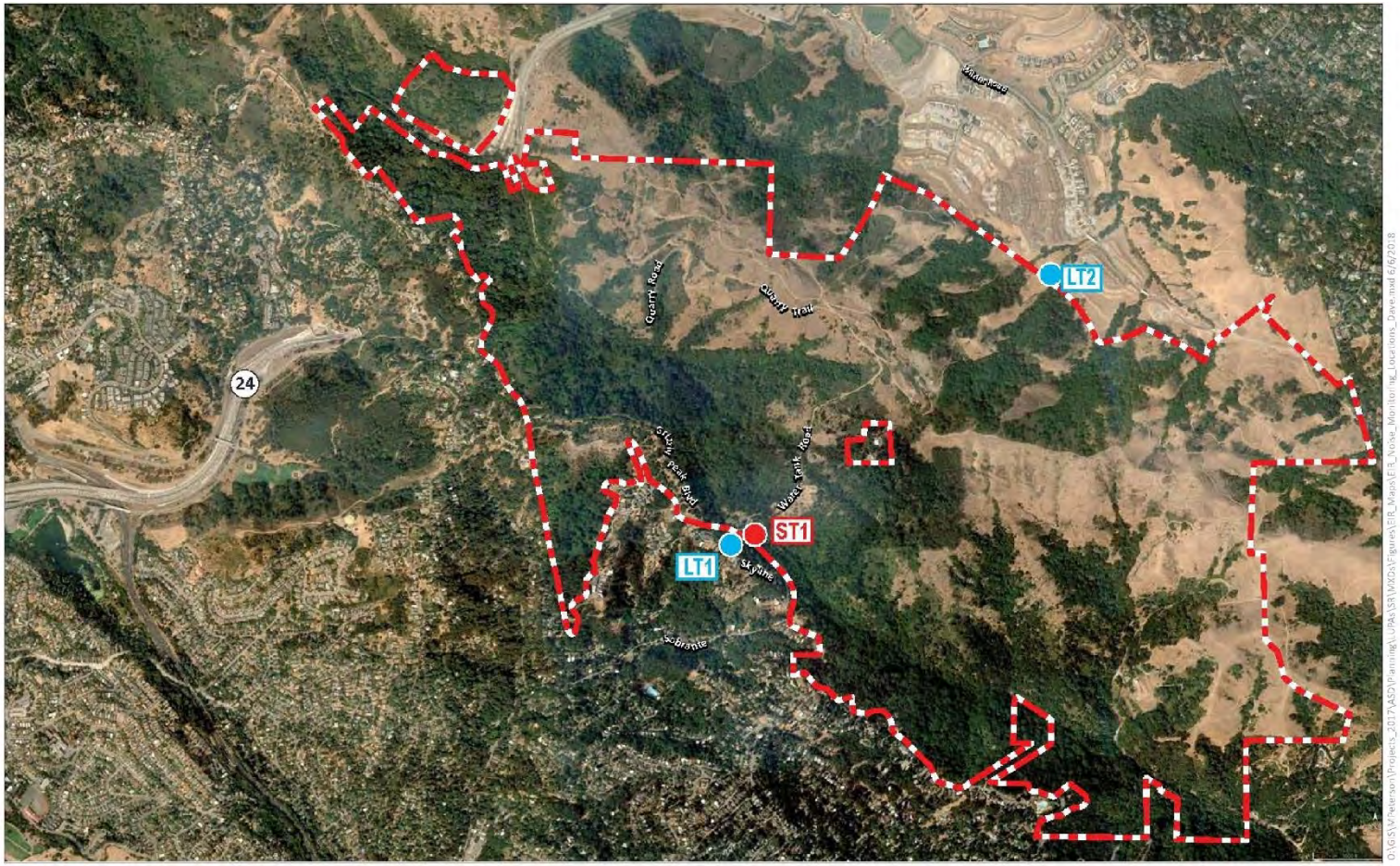


Figure 3.12-1

LSA

0 1000 2000 4000
FEET

ST# Short-Term Noise Monitoring Locations

LT# Long-Term Monitoring Location

Project Site

SOURCES: GOOGLE EARTH, AUGUST 2017; LSA, 2018.

I:\RAI1601 Sibley Land Use\figures\Fig_x.ai (4/26/18)

Sibley Land Use Plan Amendment Project
Noise Monitoring Locations

FIGURE 3.12-1: NOISE MEASUREMENT LOCATIONS

TABLE 3.12-11
AMBIENT NOISE MONITORING RESULTS, dBA

Location Number	Location Description	Start Time	L_{eq}/ CNEL[a]	L_{max}[b]	L_{min}[c]	Primary Noise Sources
ST-1	East side of existing parking lot near picnic table and water fountain, approximately 40 feet from centerline of Skyline Drive	12:42 p.m.	47.2	61.4	28.5	Traffic on Skyline Drive, birds
LT-1	Across from existing parking area, west of entrance, southbound side of road, approximately 25 feet from centerline of Skyline Drive	1:00 p.m.	66.4/ 65.7	81.7	41.0	Traffic on Skyline Drive, birds, airplanes
LT-2	Near future site, in-line with existing gate on Wilder Road	1:00 p.m.	46.6/ 50.4	61.1	41.5	Nearby construction, birds, airplanes, distant traffic

NOTES:
[a] L_{eq} represents the average of the sound energy occurring over the measurement time period for the short-term noise measurements. CNEL is the Community Noise Equivalent Level (CNEL) which is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as evening hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours).
[b] L_{max} is the highest sound level measured during the measurement time period.
[c] L_{min} is the lowest sound level measured during the measurement time period.

SOURCE: LSA, October 2017.

TABLE 3.12-12
METEOROLOGICAL CONDITIONS DURING AMBIENT NOISE MONITORING

Location Number	Average Wind Speed (mph)	Maximum Wind Speed mph)	Temperature (˚F)
ST-1	1.0	3.0	70

SOURCE: LSA, October 2017.

Vehicular Traffic Noise

Motor vehicles with their distinctive noise characteristics are a major source of noise in the Project area. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Major contributing roadway noise sources in the Project vicinity include Skyline Drive and Wilder Road, as well as other arterial and collector roadways throughout the County.

Existing roadway traffic noise levels in the Project vicinity were assessed using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77- 108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Existing traffic noise contours along modeled roadway segments are shown in *Table 3.12-13 – Existing Traffic*

Noise Levels Without Project. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. *Appendix H* provides the specific assumptions used in developing these noise levels and model printouts.

TABLE 3.12-13
EXISTING TRAFFIC NOISE LEVELS WITHOUT PROJECT

Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Skyline Drive - north of Sibley Preserve Driveway	1,970	< 50	< 50	< 50	53.7
Sibley Preserve Driveway - east of Skyline Boulevard	750	< 50	< 50	< 50	49.5
Skyline Drive - south of Sibley Preserve Driveway	1,760	< 50	< 50	< 50	53.2
Old Tunnel Road - north of Quarry Road	220	< 50	< 50	< 50	44.1
Wilder Road - south of Western Hills Red-tailed Hawk Staging Area	80	< 50	< 50	< 50	39.8
Orinda Fields Lane - south of Wilder Road	1,070	< 50	< 50	< 50	51.0
Wilder Road - east of Orinda Fields Lane	380	< 50	< 50	< 50	46.5
Wilder Road - west of Orinda Fields Lane	1,460	< 50	< 50	< 50	52.4
Skyline Drive - north of Huckleberry Trail Parkway Driveway	1,730	< 50	< 50	< 50	53.1
Skyline Boulevard - south of Huckleberry Trail Parkway Driveway	1,740	< 50	< 50	< 50	53.1

NOTES:
Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
ADT= average daily traffic
CNEL= Community Noise Equivalent Level
dBA = A-weighted decibels
SOURCE: LSA, May 2018.

Existing Sensitive Land Uses in the Project Area

Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The Project is located within an area that is predominantly open parkland and is surrounded by open space and residential uses. The closest sensitive receptor includes the single-family residence along Skyline Boulevard, which is located approximately 55 feet south of the proposed parking lot at the main Sibley staging area in the Preserve Sub-area. Sensitive receptors are also located near the McCosker Sub-area, including a residence located approximately 1,000 feet east of the proposed new staging area along Pinehurst Road. In addition, the proposed new trails would be located over 1,000 feet south of the nearest residences located in the Wilder development.

3.12.3 Research Methodologies

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located.

This analysis examines potential noise impacts associated with implementation of the Project within the District. The Project could result in short-term noise impacts due to construction and long-term impacts related to Project operations, as described below. Evaluation of noise impacts associated with the Project includes the following:

- Determine the short-term construction noise levels at off-site noise sensitive uses and compare to the County of Contra Costa and City of Orinda General Plan and Municipal Code Ordinance requirements;
- Determine the long-term noise levels at off-site noise sensitive uses and compare the levels to the County of Contra Costa, City of Oakland, and City of Orinda pertinent noise standards; and
- Determine the required mitigation measures to reduce long-term on-site noise impacts from all sources.

3.12.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G Section XII, a project would have a significant impact on the environment related to noise and vibration if it would:

a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b) Expose persons to or generate excessive groundborne vibration and noise levels;

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

e) Be located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, so that the project would result in exposure of people residing or working in the project area to excessive noise levels; or

f) Be located within the vicinity of a private airstrip, so that the project would expose people residing or working in the project area to excessive noise levels.

Criteria and Thresholds with No Impact or Not Applicable

Because of the nature of the Project and its physical setting, the Project would not result in impacts related to the following significance criteria; these criteria are not discussed in the impact analysis for the reasons presented below.

e) Be located within an airport land use plan, or, where such a plan has not been adopted. As noted in the existing conditions discussion above, aircraft noise in the Project vicinity is primarily related to the Oakland International Airport, located approximately 9 miles southwest of the Project area. In addition, Buchannan Field Airport is located approximately 11 miles northeast of the Project and San Francisco International Airport is located approximately 18 miles southwest of the Project. Aircraft overflights associated with these airports are audible from the Project, however no portion of the Project area is within 65 dBA CNEL noise contours of these airports nor does any portion of the Project lie within 2 miles of any private airfield or heliport. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels and impacts and this criterion is not discussed further in this EIR.

f) Be located within the vicinity of a private airstrip. As discussed above, the Project site is not located within the vicinity of a private airstrip. Therefore, the Project would not expose people residing or working in the project area to excessive noise levels. Therefore, this criterion is not discussed further in this EIR.

3.12.5 Impact Analysis

a) Impact NOI-1: The Project would not expose persons to or generate noise levels in excess of established standards. (Less than Significant)

The dominant source of noise in the Project vicinity is traffic on Skyline Drive. As shown in *Table 3.12-11 – Ambient Noise Monitoring Results, dBA*, the long-term noise monitoring measured between 50.4 dBA and 65.7 dBA CNEL. The Project is within the jurisdiction of Contra Costa County, City of Oakland, and City of Orinda. As discussed above, Contra Costa County General Plan and City of Oakland General Plan set forth normally acceptable noise level standards for land use compatibility and outdoor exposure of new projects. The City of Orinda General Plan only identifies normally acceptable noise level standards for residential land uses; therefore, County of Contra Costa and City of Oakland noise standards were used to evaluate potential noise impacts associated with the Project.

As shown in *Table 3.12-7 – Contra Costa County Community Noise Exposure L_{dn} or CNEL, dB*, and *Table 3.12-8 – City of Oakland Community Noise Exposure L_{dn} or CNEL, dB*, the normally acceptable exterior noise level for recreational uses is up to 70 dBA CNEL under Contra Costa County and City of Oakland noise standards. As identified above, the long-term noise monitoring identified noise levels of between 50.4 dBA and 65.7 dBA CNEL which indicates noise levels on the site would be below 70 dBA CNEL. In addition, noise levels would attenuate based on distance from Skyline Drive and other nearby roadways and noise levels along the proposed trails would be expected to be much lower. The Project's noise environment is consistent with Contra Costa County and City of Oakland noise and land use compatibility standards. This impact would be considered *less than significant* and no mitigation is required.

Mitigation: None required.

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b) Impact NOI-2: The Project would not expose persons to or generate excessive groundborne vibration and noise levels. (Less than Significant)

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads. In general, groundborne vibration from standard construction practices is only a potential issue when within 25 feet of sensitive uses. Groundborne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. With the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The streets surrounding the Project area are paved, relatively smooth, and unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause groundborne noise or vibration problems. It is, therefore, assumed that no such vehicular vibration impacts would occur and, therefore, no vibration impact analysis of on-road vehicles is necessary. Additionally, once constructed, the Project would not contain uses that would generate groundborne vibration.

Construction Vibration. The nearest sensitive receptor to the primary areas of construction is the single-family residence along Skyline Boulevard, which is located approximately 55 feet south of the proposed parking lot at the main Sibley staging area in the Preserve Sub-area. In addition, sensitive receptors are also located near the McCosker Sub-area, including a residence located approximately 1,000 feet east of the proposed new staging area along Pinehurst Road. However, the following analysis evaluates the worst-case scenario of potential construction vibration impacts at the closest sensitive receptors. This construction vibration impact analysis discusses the level of human annoyance using vibration levels in VdB and will assess the potential for building damages using vibration levels in PPV (in/sec) because vibration levels calculated in RMS are best for characterizing human response to building vibration, while vibration level in PPV is best used to characterize potential for damage. The Federal Transit

Administration's (FTA) *Transit Noise and Vibration Impact Assessment*[6] guidelines indicate that a vibration level up to 102 VdB (an equivalent to 0.5 in/sec in PPV) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster), and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction vibration damage criterion is 94 VdB (0.2 in/sec in PPV).

Table 3.12-14- Vibration Source Amplitudes for Construction Equipment, shows the PPV and VdB values at 25 feet from a construction vibration source. As shown in *Table 3.12-15 - Vibration Source Amplitudes for Construction Equipment*, bulldozers and other heavy-tracked construction equipment (except for pile drivers and vibratory rollers) generate approximately 87 VdB of groundborne vibration when measured at 25 feet, based on the Transit Noise and Vibration Impact Assessment. At this level, groundborne vibration would result in potential annoyance to residences and workers, but would not cause any damage to the buildings. Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of residences and commercial/office buildings in the Project vicinity). Outdoor site preparation for the Project is expected to use a bulldozer and loaded truck. The greatest levels of vibration are anticipated to occur during the site preparation phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the Project boundary (assuming the construction equipment would be used at or near the Project boundary) because vibration impacts occur normally within the buildings. The formula for vibration transmission is provided below.

$$L_v dB\ (D) = L_v dB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

For typical construction activity, the equipment with the highest vibration generation potential is the large bulldozer, which would generate 87 VdB at 25 feet. The closest residence is located approximately 55 feet from the Project construction boundary. Based on distance attenuation, the closest residence would experience vibration levels of up to 77 VdB (0.027 PPV [in/sec]). This vibration level at the closest residential structure from construction equipment or would not exceed the FTA threshold of 94 VdB (0.2 in/sec PPV) for building damage when bulldozers and loaded trucks operate within 50 feet of the Project construction boundary. This level is also below the FTA's "barely perceptible" human response criteria of 0.04 PPV for transient sources of vibration events. Therefore, groundborne vibration impacts from Project-related construction activities would be considered *less than significant* and no mitigation is required.

Mitigation: None required.

[6] Federal Transit Administration (FTA). 2006. Office of Planning and Environment. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. May.

TABLE 3.12-14
VIBRATION SOURCE AMPLITUDES FOR CONSTRUCTION EQUIPMENT

Equipment	Reference PPV/L_v at 25 feet	
	PPV (in/sec)	L_v (VdB)[a]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer	0.003	58

NOTES:
[a] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[b] Equipment shown in **bold** is expected to be used on site.
µin/sec = micro-inches per second
FTA = Federal Transit Administration
in/sec = inches per second
LV = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

SOURCE: *Transit Noise and Vibration Impact Assessment* (FTA 2006).

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c) Impact NOI-3: Operation of the Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the project. (Less than Significant)

The Project is located in a relatively quiet area with noise levels falling within the normally acceptable category according to the Contra Costa County and City of Oakland noise compatibility guidelines, as there are no substantial noise generators in the area and existing pass-through traffic levels produce low levels of noise. Implementation of the Project could expose existing nearby residences to noise generated from mobile source noise and stationary source noise. Mobile source noise would be attributable to the additional trips that would be a result of the Project. Stationary source noise would noise generated by parking lot activities.

Mobile Source Noise. To assess traffic noise impacts, the traffic noise levels along major roadway segments within the Project vicinity were projected using FHWA modeling to predict traffic noise level conditions with and without the Project. FWHA modeling was based on existing traffic conditions, FWHA modeling results are summarized in *Table 3.12-15, Existing and Future Traffic Noise Levels with and without Project*. The table includes projected traffic noise levels as measured at 50 feet from the centerline of the outermost traveled lane along the

modeled roadway segments. The model does not account for existing sound walls or terrain features that could reduce traffic noise levels at adjacent land uses, but rather assumes a reasonable worst-case direct line-of-sight over hard surface to the modeled traffic noise sources. Appendix H provides the specific assumptions used in developing these noise levels and model printouts.

Table 3.12-15, Existing and Future Traffic Noise Levels with and without Project, shows a minor change in the traffic noise levels associated with the implementation of the Project. The largest increases in traffic-related noise as a result of the Project would be at the Eastport Staging Area (currently named Wilcox Staging Area), located off Pinehurst Road, with a 29.3 dBA increase. The next largest increases in noise would be along Wilder Road, south of Western Hills Red-tailed Hawk Staging Area, with a 7.5 dBA increase, along Old Tunnel Road, north of Quarry Road, with a 3.9 dBA increase, and along Pinehurst Road, north of the Eastport Staging Area, with a 3.2 dBA increase. These increases in traffic would occur due to added use at staging areas and park access trailheads. These noise level increases would exceed the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment. However, the resulting noise levels would be 50.0 dBA CNEL at the Eastport Staging Area, off Pinehurst Road, 47.3 dBA CNEL along Wilder Road, south of Western Hills Red-tailed Hawk Staging Area, 48.0 dBA CNEL along Old Tunnel Road, north of Quarry Road, and 50.4 dBA CNEL along Pinehurst Road, north of the Eastport Staging Area. The resulting noise levels associated with these four roadways would be lower than existing noise associated with other surrounding roadways and would be within the normally acceptable range at nearby residential land uses. The next largest noise level increases associated with implementation of the Project would be on the Sibley Preserve Driveway, east of Skyline Drive, with an approximately 2.6 dBA increase over existing conditions. This noise level is less than the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and the resulting noise level would be 52.1 dBA CNEL, which would be similar to existing noise associated with other surrounding roadways and would be in the normally acceptable range at the nearby residential land uses. Therefore, no significant traffic noise impacts would occur for off-site land uses. As a result, no mitigation is required to address traffic-related noise.

TABLE 3.12-15
EXISTING AND FUTURE TRAFFIC NOISE LEVELS WITH AND WITHOUT PROJECT

	Existing Volumes					Existing Plus Future Projects Volumes				
	Without Project		With Project			Without Project		With Project		
Roadway Segment	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	ADT	CNEL (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Pinehurst Road – north of the Eastport Staging Area	440	47.2	920	50.4	3.2	440	47.2	920	50.4	3.2
Eastport Staging Area –east of Pinehurst Road	0	20.7	850	50.0	29.3	0	20.7	850	50.0	29.3
Skyline Drive - north of Sibley Preserve Driveway	1,970	53.7	2,380	54.5	0.8	1,970	53.7	2,380	54.5	0.8
Sibley Preserve Driveway - east of Skyline Drive	750	49.5	1,380	52.1	2.6	750	49.5	1,380	52.1	2.6
Skyline Drive - south of Sibley Preserve Driveway	1,760	53.2	1,980	53.7	0.5	1,760	53.2	1,980	53.7	0.5
Old Tunnel Road - north of Quarry Road	220	44.1	540	48.0	3.9	220	44.1	540	48.0	3.9
Wilder Road - south of Western Hills Red-tailed Hawk Staging Area	80	39.8	450	47.3	7.5	80	39.8	450	47.3	7.5
Orinda Fields Lane - south of Wilder Road	1,070	51.0	1,630	52.8	1.8	3,070	55.6	3,630	56.3	0.7
Wilder Road - east of Orinda Fields Lane	380	46.5	380	46.5	0.0	2,660	55.0	2,660	55.0	0.0
Wilder Road - west of Orinda Fields Lane	1,460	52.4	2,020	53.8	1.4	5,470	58.1	6,300	58.7	0.6
Skyline Drive - north of Huckleberry Trail Parkway Driveway	1,730	53.1	1,950	53.6	0.5	1,730	53.1	1,950	53.6	0.5
Skyline Drive - south of Huckleberry Trail Parkway Driveway	1,740	53.1	1,960	53.6	0.5	1,740	53.1	1,960	53.6	0.5

NOTES:
Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
While this analysis includes the Western Hills, it is important to note that the Red-tailed Hawk Staging Area is referenced throughout the EIR as covered under the 2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05.ADT= average daily traffic
CNEL= Community Noise Equivalent Level
dBA = A-weighted decibels
SOURCE: LSA, May 2018.

Stationary Source Noise. Implementation of the Project could expose existing nearby sensitive receptors to noise generated from parking lot activities at staging and parking areas. Parking lot noise, including engine sounds, car doors slamming, car alarms, and people conversing, could occur as a result of the Project at the Project site. Typical parking lot activities, such as people conversing or doors slamming, generates noise levels of approximately 60 dBA to 70 dBA L_{max} at 50 feet.

The Project would add 3,061 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer day use spaces, one new walk-in access, one new camping area, a new nature trail and an interpretive gathering area. The Project would also include approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

The total acreage devoted to recreation/staging area units would be approximately 12.4 acres (including approximately 5 acres of public access and recreation features in the McCosker subarea) or approximately one percent of the total Project acreage. This would represent an increase of 5.5 developed acres to the current developed area of 6.9 acres.

The nearest sensitive receptors to construction activities include the single-family residence along Skyline Drive, which is located approximately 55 feet south of the proposed parking lot at the main Sibley staging area in the Preserve Sub-area. At 55 feet, there would be a decrease of approximately 1 dBA from the increase distance compared to the noise reference level measured at 50 feet. Therefore, based on distance attenuation, the closest receptor may be subject to parking lot noise levels of approximately 59 to 69 dBA L_{max} at 55 feet. In addition, sensitive receptors are also located near the McCosker Sub-area, including a residence located approximately 1,000 feet east of the proposed new staging area along Pinehurst Road. At 1,000 feet, there would be a decrease in approximately 26 dBA. Therefore, based on distance attenuation, the closest receptor to the McCosker Sub-area would be subject to parking lot noise levels of approximately 34 to 44 dBA L_{max} at 1,000 feet, which would be lower than existing noise levels. Therefore, the following analysis evaluates the worst-case scenario of parking lot noise level increases at the closest sensitive receptors.

The proposed recreational uses, staging areas, and trails are located within the jurisdiction of Contra Costa County. The Project would expand parking at an existing staging area, but would not construct new uses or trails at the portion of the Project site located within the City of Oakland. In addition, the construction of the Red-tailed Hawk Staging Area was evaluated under the 2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05. Therefore, the noise environment in Oakland and Orinda would not change with implementation of the project.

Therefore, County noise standards were used to evaluate potential noise impacts associated with the proposed staging areas. The Contra Costa County addresses noise in terms of community noise equivalent levels; therefore, to analyze the 24-hour noise impact of the Project, park open-hours were used. With implementation of the Project, noise levels would be approximately 65.8

dBA CNEL at the nearest residential property line. *Table 3.12-16 - Operational Noise Levels with and without Project at Nearest Receptor,* identifies noise levels with and without implementation of the Project. Calculations are provided in *Appendix H.*

TABLE 3.12-16
OPERATIONAL NOISE LEVELS WITH AND WITHOUT PROJECT AT NEAREST RECEPTOR

	Existing Noise Levels	Parking Lot Noise Levels	Existing Plus Project Noise Levels	Noise Level Increase
January 1 – February 13 (8:00 a.m. – 5:30 p.m.)	65.7 dBA CNEL	69 dBA L_{max}	65.8 dBA CNEL	0.1 dBA
February 14 – March 8 (8:00 a.m. – 6:00 p.m.)	65.7 dBA CNEL	69 dBA L_{max}	65.8 dBA CNEL	0.1 dBA
March 8 – May 20 (8:00 a.m. – 7:00 p.m.)	65.7 dBA CNEL	69 dBA L_{max}	65.8 dBA CNEL	0.1 dBA
May 21 – September 3 (8:00 a.m. – 8:00 p.m.)	65.7 dBA CNEL	69 dBA L_{max}	65.8 dBA CNEL	0.1 dBA
September 4 – November 1 (8:00 a.m. – 7:00 p.m.)	65.7 dBA CNEL	69 dBA L_{max}	65.8 dBA CNEL	0.1 dBA
November 2 – December 31 (8:00 a.m. – 5:30 p.m.)	65.7 dBA CNEL	69 dBA L_{max}	65.8 dBA CNEL	0.1 dBA

NOTES:
CNEL is the Community Noise Equivalent Level (CNEL) which is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly Leq for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as evening hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours).
SOURCE: LSA, May 2018.

As shown in *Table 3.12-16 - Operational Noise Levels with and without Project at Nearest Receptor,* above, due to the intermittent nature of parking lot activity, when averaged over a 24-hour period, noise levels associated with parking lot activity would result in a minimal increase of 0.1 dBA. This noise level is well below the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and less than the established significance criteria of a 3 dBA permanent increase in ambient noise levels. Noise levels would remain within the conditionally acceptable exterior noise level for residential land uses under Contra Costa County's land use compatibility standards. Maximum noise levels from cars passing were recorded at approximately 61.4 dBA to 81.7 dBA L_{max}, therefore door slamming noise levels ranging from 59 dBA to 69 dBA L_{max} would be consistent with existing noise levels and would not result in a substantial increase in noise. Therefore, this impact would be considered less than significant. In addition, the Project would expand the existing parking capacity at this staging area from 38 spaces to 53 spaces and therefore would not be expected to substantially increase parking lot noise over existing noise levels.

In addition, Robert Sibley Volcanic Preserve is an existing open space use and park visitors would generate noise intermittently while visiting the Project, but would not generate noise levels that would exceed the applicable standards. In addition, the proposed new trails would be located over 1,000 feet south of the nearest residences located in the Wilder development. Voices from trail users may be audible at the nearest residences on occasion, but due to the distance and the minimal noise generated by hikers, the noise impact would be expected to be minimal. Therefore,

the Project would not expose persons to noise in excess of local standards. This impact would be *less than significant* and no mitigation is required.

Mitigation: None required.

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d) Impact NOI-4: Construction of the Project would result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. (Less than Significant with Mitigation)

The closest area of construction associated with the Project would be located approximately 55 feet from single-family residences. In addition, sensitive receptors are also located near the McCosker Sub-area, including a residence located approximately 1,000 feet east of the proposed new staging area along Pinehurst Road. However, the following analysis evaluates the worst-case scenario of potential construction noise impacts at the closest sensitive receptors.

Construction activities associated with the Project could result in substantial temporary or periodic increases in ambient noise levels at staging, parking, access, and trail sites throughout the Sibley Preserve. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. *Table 3.12-17 - Noise Emission Reference Levels and Usage Factors*, lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the FHWA Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the Project area but would no longer occur once construction of the Project is completed.

Two types of short-term noise impacts could occur during construction of the Project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site for the Project, which would incrementally increase noise levels on Skyline Drive and Wilder Road leading to the sites. As shown in *Table 3.12-17 - Noise Emission Reference Levels and Usage Factors*, there would be a relatively high single-event noise exposure potential at a maximum level of 79 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on the Project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and

size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table 3.12-17 - Noise Emission Reference Levels and Usage Factors, lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels can range up to 87 dBA L_{max} at 50 feet during the noisiest construction phases, when pile driving and rock drills are not used. It is not anticipated that construction of Project would require the use of rock drills or pile drivers. The site preparation phase, which includes excavation and grading, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

As identified above, the nearest sensitive receptor is the single-family residence located approximately 55 feet south of the proposed parking lot and staging area at the main Sibley staging area in the Preserve Sub-area. Project construction would result in short-term noise impacts on this adjacent receptor. At a distance of 55 feet, there would be a decrease of approximately 1 dBA compared to the noise reference level calculated as 50 feet from the active construction area. Therefore, the closest sensitive receptor may be subject to short-term construction noise reaching 86 dBA L_{max} when construction is occurring at the staging area boundary. Based on this maximum noise level and assuming a crane, forklift, tractor, welder, and air compressor would be operating simultaneously, construction of the Project would result in noise levels of approximately 81 dBA L_{eq} at the nearest sensitive receptor. This noise level would be higher than the existing measured ambient noise levels of approximately 47.2 dBA to 66.4 dBA L_{eq}. However, the total construction period at the parking lot and staging area is assumed to be approximately 6 months and construction equipment would operate at various locations within the Project site and would only generate this maximum noise level when operations occur at the boundary of the staging area closest to the receptor.

New narrow trails would be constructed using a combination of small, mechanized equipment and hand tools. In addition, trail construction work may be augmented by volunteer crews and work groups. Work crews would generally range from two to twenty in a single work crew. Special volunteer activities may bring up 60 volunteers for a one to three-day event. The proposed new trails would be located over 1,000 feet south of the nearest residences located in the Wilder development. Therefore, based on the distance between receptors from the trails and the type of construction activities, construction of the trails would not be expected to result in the exposure of sensitive receptors to noise levels in excess of standards.

TABLE 3.12-17
NOISE EMISSION REFERENCE LEVELS AND USAGE FACTORS

Equipment Description	Acoustical Usage Factor[a]	L_{max} at 50 feet (dBA)[b]	Actual Measured L_{max} at 50 feet (dBA)[c]
All Other Equipment	50	85	N/A[d]
Backhoe	40	80	78
Compactor (ground)	20	80	83
Compressor (air)	40	80	78
Concrete Mixer Truck	40	85	79
Concrete Pump Truck	20	82	81
Crane	16	85	81
Dozer	40	85	82
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front-End Loader	40	80	79
Generator	50	82	81
Gradall	40	85	83
Grader	40	85	N/A
Grapple (on backhoe)	40	85	87
Man Lift	10	85	75
Paver	50	85	77
Pickup Truck	40	55	75
Pneumatic Tools	50	85	85
Pumps	50	77	81
Roller	20	85	80
Scraper	40	85	84
Sheers (on backhoe)	40	85	96
Tractor	40	84	N/A
Vacuum Excavator (Vac-Truck)	40	85	85
Vacuum Street Sweeper	10	80	82
Ventilation Fan	100	85	79
Welder/Torch	40	73	74

NOTES:

[a] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

[b] Maximum noise levels were developed based on Specification (Spec.) 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

[c] The maximum noise level was developed based on the average noise level measured for each piece of equipment during the CA/T program in Boston, Massachusetts.

[d] Since the maximum noise level based on the average noise level measured for this piece of equipment was not available, the maximum noise level developed based on Spec 721.560 would be used.

dBA = A-weighted decibels
HP = horsepower
L_{max} = maximum instantaneous noise level
kVA = kilovolt-amperes
N/A = not applicable
RCNM = Roadway Construction Noise Model
VMS = variable message sign
Noise levels reported in this table are rounded to the nearest whole number.

SOURCE: FHWA Highway Construction Noise Handbook, Table 9.1 (FHWA 2006).

Construction noise is permitted by Contra Costa County when activities occur during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods. Construction noise is also permitted by the City of Orinda when activities occur between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 10:00 a.m. and 5:00 p.m. on Saturdays. No construction is allowed on Sundays or holidays. Construction noise is permitted by the City of Oakland when construction activities occur on weekdays between the hours 7:00 a.m. and 7:00 p.m. and noise levels do not exceed 65 dBA L_{max} and on weekends between the hours of 9:00 a.m. and 8:00 p.m. and noise levels do not exceed 55 dBA L_{max}. Major construction activities, including construction of the parking lots, staging areas, and trails, would occur within Contra Costa County.

As discussed above, construction noise would result in a temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. Implementation of Best Management Practices for Project construction, as identified as Mitigation Measure 3.12-1 below, would reduce potential construction period noise impacts for the indicated sensitive receptors.

Mitigation Measure NOI-1: Project-wide - Basic Construction Mitigation Measures

The Project contractor shall implement the following Best Management Practice measures during construction of the Project:

- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active Project site.
- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all Project construction.
- Prohibit extended idling time of internal combustion engines.
- The hours of work shall be any 8.5-hour block as mutually agreed upon between the Contractor and the EBRPD between 7:00 a.m. and 5:00 p.m., Monday through Friday. No night work shall be permitted.
- Designate a "disturbance coordinator" at EBRPD who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.

Significance after Mitigation: *Less than Significant*.

3.12.6 Cumulative Effects

CEQA defines cumulative impacts as "two or more individual effects, which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively significant. These impacts can result from the Project alone, or together with other projects. The CEQA Guidelines state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

The Project would not create a cumulatively considerable contribution to regional noise conditions. The largest increase in traffic-related noise as a result of the Project would be at the Eastport Staging Area, east of Pinehurst Road, with a 29.3 dBA increase. The next largest increases in noise would be along Wilder Road, south of Western Hills Red-tailed Hawk Staging Area, with a 7.5 dBA increase, along Old Tunnel Road, north of Quarry Road, with a 3.9 dBA increase, and along Pinehurst Road, north of the unnamed road, with a 3.2 dBA increase. These increases in traffic would occur due to added staging areas and park access trailheads. These noise level increases would exceed the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment. However, the resulting noise levels would be 50.0 dBA CNEL at the Eastport Staging Area, east of Pinehurst Road,47.3 dBA CNEL along Wilder Road, south of Western Hills Red-tailed Hawk Staging Area, 48.0 dBA CNEL along Old Tunnel Road, north of Quarry Road, and 50.4 dBA CNEL along Pinehurst Road, north of the at the Eastport Staging Area. The resulting noise levels associated with these four roadways would be lower than existing noise associated with other surrounding roadways and would be within the normally acceptable range at nearby residential land uses. The next largest noise level increases associated with implementation of the Project would be on the Sibley Preserve Driveway, east of Skyline Drive, with an approximately 2.6 dBA increase over existing conditions. This noise level is less than the 3 dBA increase considered to be perceptible by the human ear in an outdoor environment and the resulting noise level would be 52.1 dBA CNEL, which would be similar to existing noise associated with other surrounding roadways and would be in the normally acceptable range at the nearby residential land uses. Therefore, no significant traffic noise impacts would occur.

Implementation of the Project would also generate on-site stationary noise sources associated with parking lot activities. A significant cumulative impact would also occur if the implementation of the Project would result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the project site vicinity that are currently exposed to noise levels above the normally acceptable threshold for that type of land use. As discussed above, the Project would not result in any permanent increase of 3 dBA or more in ambient noise levels at the existing sensitive receptors in the project vicinity that are currently exposed to noise levels above the County of Contra Costa, City of Orinda, or City of Oakland normally acceptable threshold for that type of land use.

In addition, implementation of Mitigation Measure 3.12-1 would ensure that construction of projects associated with the Project would not result in adverse noise impacts from construction activities. In addition, construction-related noise impacts would be temporary and would no longer occur once construction of projects associated with the proposed LUPA are completed. Therefore, construction activities would not be considered a cumulatively considerable contribution to the total noise environment in the project area and this impact would be *less than significant* and no mitigation is required.

3.12.7 References

Contra Costa, County of, 2010. *Contra Costa County General Plan 2005 – 2020.* July.

Oakland, City of, 2005. *City of Oakland General Plan Noise Element.* March.

Oakland, City of, 2018. *Oakland Municipal Code*. May 8.

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East Bay Regional Park District, 2016. *Ordinance 38 – Rules and Regulations.* Revised April 2016.

Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment. May.

Harris, C.M., 1998. *Handbook of Acoustical Measurements and Noise Control.*

U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

3.13 Population and Housing

This section considers population and housing elements that could that could affect or be affected by the Project. This section also describes laws, regulations, plans, and policies related to population and housing that may be relevant to the Project.

3.13.1 Regulatory Framework

Federal, state, and local laws and regulations govern housing, although none are applicable to the District, whose mandate as an independent special district under the State Public Resources Code does not include housing. Under the California Public Resources Code (Article 3, 5500 series), the District's authority is to:

> "*...acquire land...to plan...develop...and operate a system of public parks, playgrounds, golf courses, beaches, trails, natural areas, ecological and open space preserves, parkways, scenic drives, boulevards and other facilities for public recreation, for the use and enjoyment of all the inhabitants of the District...to conduct programs and classes in outdoor science education and conservation education...to employ a police force... prevent and suppress fires...and to do all other things necessary or convenient to carry out the purposes of the District.*"

Local Resource Protection Ordinances and Policies

The Project area shares its boundary with other District parklands, EBMUD properties, the Geological Hazard Abatement District (GHAD) associated with the Wilder residential development in the City of Orinda, and several private properties. Most of the Project area is in unincorporated Contra Costa County with smaller portions of the Project area lying within the cites of Orinda and Oakland.

City and County General Plan Policies

While none of the city and county general plan policies directed at managing population growth and housing needs are applicable to the Project, there are policies that provide guidance on the importance of open space to benefit surrounding communities. These are listed below in *Table 3.13-1, City and County Population and Housing Goals and Policies.*

TABLE 3.13-1
CITY AND COUNTY GENERAL PLAN POPULATION AND HOUSING GOALS AND POLICIES

Contra Costa County General Plan	Project Consistency
Goal LU 3.8-3-A: To coordinate land use with circulation, development of other infrastructure facilities, and protection of agriculture and open space, and to allow growth and the maintenance of the County's quality of life. In such an environment, all residential, commercial, industrial, recreational and agricultural activities may take place in safety, harmony, and to mutual advantage. Policy 3-12: Preservation and buffering of agricultural land should be encouraged as it is critical to maintaining a healthy and competitive agricultural economy and assuring a balance of land uses. Preservation and conservation of open space, wetlands, parks, hillsides and ridgelines should be encouraged as it is crucial to preserve the continued availability of unique habitats for wildlife and plants, to protect unique scenery and provide a wide range of recreational opportunities for County residents.	Consistent with Goal LU 3.8-3-A and Policy 3-12, implementation of the Project would incorporate the Western Hills and McCosker sub-areas and developed local trails into Robert Sibley Volcanic Regional Preserve, bringing the total protected open space for this Preserve to 1,318 acres and ensuring the continued availability of habitats for wildlife and plants, protection of scenery, and provision of a wide range of recreational opportunities for County residents.

East Bay Regional Parks

2013 District Master Plan

As the District's mandate does not include housing, there are no housing policies relating to the general public in the 2013 District Master Plan. However, the District's mission acknowledges the need to protect open space to serve a growing population as stated below.

> "*The District envisions an extraordinary and well-managed system of open space parkland in Alameda and Contra Costa Counties, which will forever provide the opportunity for a growing and diverse community to express nature nearby.*"

2013 District Master Plan policies that recognize the importance of acquiring lands and adapting services and programs to serve a growing population are described in *Table 3.13-2, 2013 District Master Plan Population and Housing Goals and Policies* below.

TABLE 3.13-2
2013 DISTRICT MASTER PLAN POPULATION AND HOUSING GOALS AND POLICIES

Goals and Policies	Project Consistency
BPD1: The District will continue to acquire, develop and operate areas and facilities and to provide programs and services with the primary goal of achieving a long-term balance throughout the park system. The District will continue to allocate resources based on the populations from the most current Census data for the West Metropolitan, South Metropolitan and Diablo sectors. To make the most efficient use of public funds, the District will evaluate and seek to support and enhance the parks, programs and services of other agencies.	Consistent with Master Plan Policy BPD1, implementation of the Project would add facilities and provide programs that consider population data and recreation trends, as well as provide connections to the parks, trails and bike routes of other neighboring agencies.
PS1: The District will continue to adapt its services and programs in response to changes in the East Bay's resident population, recognizing that the cultural diversity of the District is expected to increase.	Consistent with Master Plan Policy PS1, implementation of the Project would add services and programs considering population data and recreation trends, including increasing cultural diversity.
BPD1: The District will continue to acquire, develop and operate areas and facilities and to provide programs and services with the primary goal of achieving a long-term balance throughout the park system. The District will continue to allocate resources based on the populations from the most current census data for the West Metropolitan, South Metropolitan and Diablo sectors. To make most efficient use of public funds, the District will evaluate and seek to support and enhance the parks, programs and services of other agencies.	Consistent with Master Plan Policy BPD1, the Project includes Project Objective 4: Recreation Facility and Interpretive Program Elements which states: "Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural pre-history and history. Implementation of the Project would add to the recreation opportunities and distribute use over a larger segment of the growing West Metropolitan sector that serves a population of over 948,981 or 37 percent of the total District population.

2013 District Residence Policy

While the District does not have any housing policies relating to the general public, the District does have a District residence policy. The District maintains park residences to serve as rental residences for park employees, caretakers and concessionaires who provide additional security for a specific building, facility, or parkland area; provide extended public contact opportunities at strategic locations in a parkland for park users involved in or reporting emergencies; provide quick response to parkland problems, such as accidents, parkland fires, vandalism, and other operational and maintenance problems, which cannot be handled by "on duty" employees; and

provide on-site living accommodations for operators of a park to properly manage and protect valuable equipment, animals, and improvements. There are currently three park residences in the Project area: two within the Preserve sub-area and one within the McCosker sub-area.

3.13.2 Existing Conditions

Population

Population Growth Projections

The California Department of Finance has prepared long-range population growth projections that show the San Francisco Bay Area growing over the next 50 years by another 1.8 million new residents between 2010 to 2060. This population growth is anticipated to be led by Contra Costa County, which will gain about 533,000 people. With another 162,000 residents in the more built-out Alameda County, the District is expected to grow by almost 700,000 people by 2060.

The ethnic and cultural composition of California's population is expected to continue to shift, and these statewide trends will be felt within the District as well between now and 2060. The ethnic segment of the population expected to grow most dramatically is Hispanic or Latino, adding over half a million people to the District's population. The second fastest-growing population is expected to be people of Asian descent, adding over 175,000 new residents to the District service area.

Due to the size of the "baby boom" generation, the recent trend has been the increasing average age of the population, especially within slower-growing Alameda County. This is not permanent, however, and in the 2025 – 2040 period there is likely to be a resurgence of growth in families, especially in faster-growing Contra Costa County.

Some communities are relatively built out and are not expected to grow significantly according to projections developed by the Association of Bay Area Governments (ABAG). On the other hand, some smaller communities have room to grow, such as Brentwood, Oakley, Dublin and San Ramon. Some of the larger communities also have strong potential for higher density infill development, which is expected by ABAG to lead to significant growth in such established cities as Oakland, Fremont, Concord, and Richmond.

Under Served Populations

Relative to outdoor education, there is growing evidence that a majority of the population, and certainly children and young adults, is underserved. Over the last decade concerns have arisen in popular culture about trends in recreation participation in general, and the ways America's youth spends its time as a specific subset.

Academic studies have concluded that "nature-based" recreation appears to be declining somewhat in per capita terms. In the 2005 book *Last Child in the Woods*, author Richard Louv hypothesized a "nature deficit disorder" is growing in America's youth. While it is beyond the scope of this analysis to address some of the controversies surrounding these concerns, a consensus exists within the District's constituency that these trends are real, and that part of the

prescription is to have more opportunities for District residents, especially young people, to participate in nature-based recreation.

Regional Demographics

Regionally, a wide diversity of ethnicities, races, and ages are distributed throughout Alameda-Contra Costa Counties' population of 2,681,051, with approximately 40 percent of the population speaking a language other than English at home.

Locally, the City of Oakland (population 408,073), the City of Orinda (population 18,703), the Town of Moraga (population 16,787), and the unincorporated community of Canyon (population 186), have the most direct access to the Project area providing a local community base of 443,749 residents. Most of this population is non-Hispanic white (approximately 30 percent). Other populations include Asian (approximately 16 percent), Latino (approximately 25 percent), African-American (approximately 24 percent), and Native American (approximately 0.7 percent). The majority of this population is between 18 and 64 years of age.

District Service Area

The District is comprised of regional parklands located throughout Alameda and Contra Costa counties. The District system now includes over 121,397 acres of District lands comprised of 73 regional parks, recreation areas, shorelines, preserves, wilderness, and land bank areas (*Figure ES-1, Project Location*). This includes 61 parks open and accessible to the public and 12 new parks in land bank status not currently open to the public. Robert Sibley Volcanic Regional Preserve comprises one of the 73 District parklands.

The District strives to provide a balanced system of regional parks, trails and services for all District residents. The District Master Plan divides the District into three sectors: West Metropolitan Sector, South Metropolitan Sector, and Diablo Sector. The Project is within the West Sector, which has a population of approximately 948,981 or 37.1 percent of the total District population.

The Project includes three sub-areas totaling 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve: 1) Robert Sibley Volcanic Regional Preserve (Preserve); 2) Western Hills Open Space (Western Hills); and 3) the McCosker Parcel (McCosker), along with the 240-acre Huckleberry Regional Preserve.

Approximately 2,321 people live within one-half-mile of the park and would have opportunities to access this site by hiking, bicycling or riding horses on trails that would connect to the Project site.

3.13.3 Research Methodologies

This impact analysis focuses on potential effects on population and housing associated with the Project. The evaluation considers current conditions in the Project area, a review of data available from the U.S. Census and Association of Bay Area Governments (ABAG), District data, plans, policies, and programs, and applicable regulations and guidelines.

3.13.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G Section VIII, the Project would have a significant impact on population and housing if it would result in the following:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Criteria and Thresholds with No Impact or Not Applicable

a) ***Induce substantial population growth in an area, either directly or indirectly.*** The Project considers a set of improvements that include improvements to existing roadways and utilities and trail system expansion Road and utility improvements would be contained within existing District parklands and designed to service recreation facilities within this parkland area. Additionally, the expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands and adjoining residential communities reducing neighboring communities' dependence on the existing roadway system to access local recreation opportunities. These infrastructure improvements are not anticipated to lead to a growth in population or housing in the surrounding area. No new residential homes are planned as a part of the Project, and no new roads or infrastructure are proposed beyond the internal systems designed to connect existing and proposed Project amenities; these elements are wholly contained within the Project area.

As the Project would not induce population growth in the area, through the addition of new housing or businesses, or expand roads or infrastructure beyond the Project boundaries and the proposed improvements would only service park visitors and District staff, these activities are not expected to impact population and housing growth in the area. Nor, are they anticipated to affect existing housing or create demand for additional housing. As no significant impacts to population and housing are anticipated, this criterion will not be discussed further in this EIR.

b) ***Displace existing housing.*** The Project site is contained within existing designated open space boundaries. Implementation of the Project would not displace existing housing necessitating the construction of replacement housing elsewhere as the Project is focused on creek restoration, recreation facility, public access and infrastructure improvements and these activities would be wholly contained within District parklands. Therefore, this criterion will not be discussed further in this EIR.

c) ***Displace substantial numbers of people.*** The Project site is contained within existing designated open space boundaries where housing is limited to park security residences for use by District staff and associated caretakers. Implementation of the Project would not displace anyone from existing housing for park staff nor necessitate the construction of replacement housing elsewhere. As the Project would not displace anyone from their home, this criterion will not be discussed further in this EIR.

3.13.5 Impact Analysis

a, b, c) The Project is located within parklands owned and operated by the District for parkland purposes. As such, the Project is not anticipated to have an effect on population or housing. Implementation of the Project would not involve the development of any new residential homes as a part of the Project. Implementation of the Project would not displace any existing housing. The Project elements would be wholly contained within District lands and would result in implementation of restoration, public access and recreation activities that are consistent with the District Master Plan and local general plan policies. Project internal roadway and infrastructure improvements would be designed to service recreation facilities within this parkland area. Proposed trail improvements would expand opportunities to access this parkland area from existing and developing residential communities. None of these activities are expected to impact the existing population base in the area. Nor, are improvements within the Project area expected to affect existing housing or create demand for additional housing. Therefore, there would be *no impact* related to population and housing.

Mitigation: None required.

3.13.6 Cumulative Effects

Geographic Extent/Context

The Project area is located within defined areas of East Bay Regional Park District that serves a two-county area with a population of approximately 2,681,051 with projections that there will be an increase in population numbers and diversity into the next decade. The expansion of Robert Sibley Regional Preserve by 639 acres and the expanded trail system would help to accommodate this growth without directly or indirectly adding to the population or the demand for housing. Therefore, potential impacts related to population and housing in the Project area are anticipated to be *less than significant.*

Past, Present, and Reasonably Foreseeable Projects

In the Project vicinity, there are several projects proposed that are listed in Section 3.10, Land Use and Planning, *Table 3.10-3, Pending Projects in the Project Vicinity* with locations provided in *Figure 3.10-2, Proposed Development Projects in Project Vicinity*. None of these planned projects are contiguous with the Project. All the pending projects, except one church project, are small-scale residential infill projects. As such, while the added parkland area and additional access points may benefit these projects by providing recreation opportunities in close proximity, none of them are expected to alter the status of the Project area as parkland and open space and none of the Proposed Project improvements would directly or indirectly add to the population or the demand for housing or displace anyone from existing housing. Therefore, cumulative impacts related to population and housing are anticipated to be *less than significant*.

3.13.7 References

Contra Costa County. 2005. Contra Costa County General Plan 2005-2020, Chapter 3. Land Use Element. Website: http://www.co.contra-costa.ca.us/DocumentCenter/View/30913. Accessed December 2017.

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3.14 Public Services

This section describes existing public services that could affect or be affected by the Project. This section also describes laws, regulations, plans, and policies related to public services that may be relevant to the Project. Public recreation facilities are discussed in *Section 3.15, Recreation*. Impacts associated with the land alterations resulting from the proposed construction activities are also discussed in *Sections 3.3, Air Quality, 3.4, Biological Resources, 3.5, Cultural and Cultural Tribal Resources, 3.6, Geology and Soils*, and *3.9, Hydrology and Water Quality*, along with applicable regulations, standard Best Management Practices, and mitigations that would serve to reduce Project activities to below the level of significance.

3.14.1 Regulatory Setting

Federal, state, and local laws and regulations govern public services during Project construction and operation. Following is a summary of regulatory framework associated with providing services to the public.

Federal Regulations

The Americans with Disabilities Act of 1990 is the primary federal mechanism for assessing public services in the Project area. This program is summarized below.

Americans with Disabilities Act of 1990

The Americans with Disabilities Act (ADA) is a civil rights law that prohibits discrimination against individuals with disabilities in areas of public life, including jobs, schools, transportation, and public and private places that are open to the public. The purpose of the law is to make sure that people with disabilities have the same rights and opportunities as everyone else.

State Regulations

California Public Resources Code § 4102, Title 24, and the California State Park Accessibility Guidelines are the primary State mechanisms for assessing public services in the Project area. These programs are summarized below.

California Public Resources Code (PRC)

As defined in California Public Resources Code § 4102, a "State Responsibility Area" (SRA) is an area of the state where the State of California Department of Forestry and Fire Protection, or CAL FIRE, is financially responsible for the prevention and suppression of wildfires. Portions of the Project area are included within a SRA.

California Code of Regulations, Title 24

California and Federal regulations provide a comprehensive set of standards covering important areas of accessibility for persons with physical and sensory disabilities. California's Building Standards Codes (Physical Access Regulations) are found in Title 24 of the California Code of Regulations (CCR), and are designed to comply with the requirements of the Americans with Disabilities Act and State statutes.

California State Parks Accessibility Guidelines

The 2015 California State Parks Accessibility Guidelines present principles for providing accessibly in park settings. The Guidelines embody a compilation of accessibility standards, recommendations and regulations for compliance with accessibility laws in natural settings where people come to experience nature. More specifically, the guidelines provide recommendations directed at providing services and experiences to visitors of all abilities while maintaining the intrinsic natural qualities of a parkland area. The District policies state that the District will comply with these standards.

Applicable Policies of Agencies with Jurisdiction over the Project

Refer to *Section 3.10, Land Use and Planning, Table 3.10-1, City and County General Plan Land Use and Planning Goals and Policies* for city and county general plan policies guiding the planning and development of public recreation amenities.

East Bay Regional Parks

2013 Master Plan Vision

The long-term vision for lands managed by the District as set forth in the 2013 District Master Plan states,

> "*The District envisions an extraordinary and well-managed system of open space parkland in Alameda and Contra Costa Counties, which will forever provide the opportunity for a growing and diverse community to express nature nearby*."

Master Plan Policies

The 2013 District Master Plan provides a decision-making framework, and identifies policies that will achieve District-wide objectives. These include policies directed at ensuring equitable access to public recreation programs and services throughout the District. Applicable policies are described in *Table 3.14-1, 2013 District Master Plan Public Services Goals and Policies.*

Table 3.14-1
2013 DISTRICT MASTER PLAN PUBLIC SERVICES GOALS AND POLICIES

Goals and Policies	Project Consistency
PA6: The District will comply with the requirements of the Americans with Disabilities Act and use the current edition of the California State Parks Accessibility Guidelines as its standard for making the improvements necessary to create accessible circulation, programs and facilities throughout the Park District.	Consistent with Policy PA6, the Project would comply with the requirements of the Americans with Disabilities Act and use the current edition of the California State Parks Accessibility Guidelines in the developed Recreation/Staging Units including expanded parking areas, the Fiddleneck Field recreation area and the Alder Creek Nature Trail.
PA8: The District will endeavor to assist individuals and groups who require special assistance with programs or facilities because of physical disability or economic circumstances.	Consistent with Policy PA8, the Project would include ADA-compliant recreation features that would facilitate programming events for individuals and groups that require special assistance with programs or facilities because of physical disability. Provisions of a group area for camping and interpretive programs would also provide opportunities to expand the recreation and interpretive program opportunities, that the District offers, including programs

Goals and Policies	Project Consistency
	that provide economic assistance, to this new facility. Additionally, while many of the trails exceed vertical grade requirements set forth in the ADA, park usage accommodations would conform to the District policy on use of Other Power-Driven Mobility Devices (OPDMD) – 2011 to help offset the challenging access to the steep, rugged terrain leading to ridge tops. Trails would be rated according to the Universal Trail Assessment Process (UTAP) and the State Park Accessibility Standards when evaluating trail difficulty and presence of obstacles (e.g., boulders, low overhanging limbs).
IRS1: The District will provide a variety of interpretive programs that focus attention to the region's natural and cultural resources. Programs will be designated with sensitivity to the needs and interests of people of all ages and backgrounds. Programs will enhance environmental experiences and foster values that are consistent with conserving natural and cultural resources for current and futures generations to enjoy. The District will pursue and encourage volunteer support to assist in meeting these objectives.	Consistent with Policy IRS1, the Project would provide a variety of interpretive programs that focus attention to the region's natural and cultural resources through the implementation of Project Objective 4: Recreation Facility and Interpretive Program Elements which states: "*Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural pre-history and history*". Additionally, the Project would incorporate existing volunteer programs and establish new volunteer opportunities into the implementation plan for the Project.

District Ordinance 38

Portions of District Ordinance 38 address public health and safety. Relevant sections are briefly summarized in *Table 3.14-2, Applicable Ordinance 38 Provisions* below.

TABLE 3.14-2
APPLICABLE ORDINANCE 38 PROVISIONS

Section 400.5 This section states that, "All persons at a campsite may be removed if there is a violation of state law, this Ordinance or campground rules at the campsite. For 15 days following the removal, the person removed may not reserve or occupy a campsite within the District. Persons removed are not eligible for refunds for unused camping, vehicle or other fees. It shall be unlawful to refuse to vacate a campground and leave District parklands when requested under this Section (rev 4/16)."
Section 403.1 Restriction. This section states that, "Except as provided in subsection 403.2 of this Section (exceptions would generally not be applicable to the Project Area as there no designated existing or proposed sites for these activities), no person shall have in his/her possession within the District, nor shall any person fire or discharge, or cause to be fired or discharged, across, in, or into any portion of the District any gun or firearm, spear, bow and arrow, cross bow, sling shot, air or gas weapon, or any other dangerous weapon. Further, no person shall possess, discharge or use any other dangerous weapon, including practice swords, spears, nunchakus and throwing stars, regardless of intent."
Section 404.3 Smoke-Free Parks. This section states that, "Smoking is prohibited in the East Bay Regional Park District with the exception of in overnight campsites."
Section 407. Unacceptable Conduct**.** This section states that, **"**No person shall continue to engage in any course of conduct in any Park after he or she is advised by a Public Safety Officer or other Park employee, agent or concessionaire having authority to regulate or manage the area, that such conduct unreasonably or unnecessarily interferes with or obstructs the lawful use and enjoyment of such facility or area by other persons, or impairs the ability of any Park District employee, agent or concessionaire to perform his or her authorized duties and activities."
Section 906. Curfew**.** This section states that, **"**No person other than the house guests of the concessionaire-resident or an employee renting a house from the District, persons fishing in parks designated for nighttime fishing, or person possessing valid written permission to camp, shall enter upon or otherwise remain within the District for any purpose whatsoever between the hours specifically posted as curfew hours at the entrance to the particular District parkland, or where no hours are posted, between the hours of 10:00 p.m. to 5:00 a.m. Those persons possessing a valid permit shall be allowed to remain and use parklands and facilities as specified in their permit, after which time they shall leave the District without any appreciable delay."
Section 907 Prohibited or Restricted Area. This section states that, "The General Manager or his designee may from time to time upon such finding declare an area closed, entry prohibited, entry regulated, or limited to further entry, and specify the period to insure the safety and health of persons, to avoid interference in development, construction, management, and operations to protect the lands of the District and its neighbors during high risk fire weather, or to provide for the security, safeguarding and preservation of persons and property in the District and portions thereof."

3.14.2 Existing Conditions

District Park Facilities

The Project area is located in the East Bay Hills at the boundary of Alameda and Contra Costa Counties between Tilden Regional Park and Redwood Regional Park. This site serves as a recreational, educational, and cultural venue for residents in the two-county area serviced by the District, including the residents of the nearby communities of Oakland, Orinda, Moraga and Canyon. The Project includes three sub-areas totaling 1,318 acres that would constitute Robert Sibley Volcanic Regional Preserve: 1) Robert Sibley Volcanic Regional Preserve (Preserve); 2) Western Hills Open Space (Western Hills); and 3) the McCosker Parcel (McCosker), along with the 240-acre Huckleberry Regional Preserve.

Preserve Sub-area

The Preserve sub-area lies in the East Bay Hills and includes staging areas, trails for hiking, dog-walking, jogging, cycling, and equestrian use, an interpretive pavilion, public restrooms, a backpack campsite, two park security residences, a park staff office, remnants from prior quarrying activities, and infrastructure for sustaining a livestock grazing program.

McCosker Sub-area

The McCosker sub-area is located within Contra Costa County adjacent to Huckleberry Preserve and in proximity to the unincorporated community of Canyon. This sub-area includes a staging area with a chemical toilet, two miles of multi-use trails for hiking, jogging, cycling, and equestrian use, infrastructure for sustaining a livestock grazing program, a park security residence, an equipment shed, vacated underground storage tanks, and various remnants from the former construction and ranching enterprises.

Western Hills Sub-area

The Western Hills sub-area is located within Contra Costa County in the City of Orinda adjacent to Sibley Preserve. Development in the Western Hills sub-area consists of a 0.5-acre staging area and three miles of existing trails. These improvements were considered in the *2004 Second Supplemental EIR for the Montanera Project* and *City of Orinda Resolution 13-05*. They will become available for public use when the land is transferred to the District.

Huckleberry Botanic Regional Preserve

Huckleberry Botanic Regional Preserve comprises a 240-acre area, owned and managed by the District, that borders portions of each of the three sub-areas. It includes staging areas, and trails primarily oriented to walking.

Other Public Facilities

Wilder Park

Northeast of the Western Hills sub-area is Wilder Park, managed by the City of Orinda. At full build-out this park will contain five ball fields, restrooms and 273 parking spaces with ten spaces dedicated to Sibley Preserve access. Wayfinding signs at Wilder Park would direct visitors to

Robert Sibley Volcanic Regional Preserve via neighborhood trails, pathways and streets identified in the 2018 Wilder Circulation Plan. Regulatory signs would inform visitors of the rules and courtesies to be observed when visiting District and City lands.

The sports fields, which are owned and operated by the City of Orinda, are open to the public and local sports organizations. Permanently preserved recreational open space located along the eastern boundary of the Wilder residential development is managed by the Geologic Hazard Abatement District (GHAD). Maintenance, operations and incident response would be provided by the City and the Homeowners Association.

City of Orinda Art + Garden Center

The Art + Garden Center currently under construction will be a 6,600-square foot, public facility for event rentals, classes, demonstrations, lectures, special uses and other public events that will include outdoor gathering spaces. This facility, which is located adjacent to Wilder Park, will be owned and operated by the City of Orinda.

Wilder Subdivision Trails

The Wilder residential development includes a network of trails managed by the Wilder Homeowners Association. This neighborhood trail system provides connections between the residential neighborhoods in the Wilder Subdivision and connections to other City of Orinda neighborhoods via Brookside and Edgewood Drives. Access to the trails in Western Hills sub-area from the local neighborhoods will be via a trailhead in Wilder Park and from the Red-tailed Hawk Staging Area at the southern terminus of Wilder Road.

Regional Trails and Bike Routes in the Vicinity

The Lafayette-Moraga Regional Trail links the City of Lafayette to the Town of Moraga and EBMUD lands via a paved trail that connects neighborhoods to schools and businesses. This regional trail is maintained by the East Bay Regional Park District. Allowable uses include hiking, biking, dog walking, and horseback riding.

The Lafayette-Moraga Regional Trail is a bicycle route that links the Town of Moraga and the Cities of Lafayette and Orinda. As this route is located largely on residential streets where as sidewalks are intermittent, and shoulders do not safely accommodate pedestrian or equestrian travel for much of the route, this route should be considered a bike-only loop.

The EBMUD trail system in the East Bay Hills includes a 1.5-mile section of the Skyline Trail between Tilden Regional Park and Robert Sibley Volcanic Regional Preserve, sections of trail linking the separate parcels of Huckleberry Botanic Regional Preserve, and trails associated with the San Leandro Reservoir that connect to the Lafayette-Moraga Regional Trail at the Valle Vista Staging Area.

Schools

There are 29 schools located within approximately five miles of the Project area. The nearest school is Canyon Elementary School, located approximately one mile south of the McCosker sub-area at 187 Pinehurst Road in Canyon.

There are five high schools within five miles of the Project area. Miramonte High School is located approximately three miles east of the Project area at 750 Moraga Way in the City of Orinda. Campolindo High School is located approximately five miles east of the Project area at 300 Moraga Road in the Town of Moraga. Oakland Technical High School is located approximately five miles west of the Project area at 4351 Broadway in the City of Oakland. Oakland International High School is located approximately five miles west of the Project area at 4521 Webster Street in the City of Oakland. Maybeck High School is a private school located approximately four miles west of the Project area at 2727 College Avenue in the City of Berkeley.

There are 23 elementary and intermediate schools within five miles of the Project area. City of Orinda and Town of Moraga elementary and intermediate schools include: Glorietta Elementary School, Wagner Ranch Elementary School, Sleepy Hollow Elementary School, Del Rey Elementary School, Camino Pablo Elementary School, Orinda Intermediate School, and Joaquin Moraga Intermediate School. City of Oakland elementary and intermediate schools include: Joaquin Miller Elementary School, Thornhill Elementary School, Montclair Elementary School, Kaiser Elementary School, Chabot Elementary School, Hillcrest Elementary School, Peralta Elementary School, Emerson Elementary School, Piedmont Avenue Elementary School, Sankofa Academy, Montera Middle School, and Claremont Middle School. City of Berkeley elementary and intermediate schools include: John Muir Elementary School, Emerson Elementary School, LeConte Elementary School, and Willard Middle School.

The University of California, Berkeley is less than five miles away from the Project area. Educational programs include geological mapping field exercises for graduate students.

California Shakespeare Company

North of the Preserve and Western Hills sub-areas, and approximately one-quarter mile north of Highway 24, the California Shakespeare Company seasonally operates the 500-seat outdoor Bruns Theater. The theater is located on EBMUD San Pablo Reservoir Watershed land in Siesta Valley, in unincorporated Contra Costa County.

Refer to *Figure 3.10-1, Existing Public Facilities in the Project Vicinity* for the location of nearby fire and police stations, public schools, and parks/open space.

District Staff

Presence and Operations

Staff from the District's Operations and Public Safety Departments provide for the safety and protection of park visitors and staff, management of natural resources, and maintenance of park facilities. Interpretive and Recreation Services Department staff offer educational and interpretive

programs to the public. Public Safety and Trails Development Group staff offer programs directed at public safety and trail development and maintenance, respectively.

Park staff serve as the primary presence in the park on a day-to-day basis. On-site staffing for this parkland unit is currently provided by five positions: one Park Supervisor, two 12-month Park Ranger IIs, and two 9-month Park Ranger IIs. They are responsible for patrolling and maintaining the Preserve and McCosker sub-areas, Huckleberry Botanic Regional Preserve, and Claremont Canyon Regional Preserve (Refer to *Figure 3.14-1, Project Area Operation Unit*). District staff would also be responsible for Western Hills Sub-area when this property is incorporated into this unit as part of Robert Sibley Volcanic Regional Preserve. As the primary interface with park visitors, park staff provide information about the park and park regulations, and ensure public safety through routine patrol and by acting as first responders for public safety emergencies, and crime, vandalism, and fire incidents.

Park Staff Responsibilities

Basic District operational and maintenance services generally consist of: opening and closing staging and trailhead gates at park opening and closing; litter pick-up; pavilion and restroom facility maintenance; trail maintenance; installing and maintaining signs, benches, and other park infrastructure, including fences and gates; managing the parkland's natural features, and biological, and cultural resources; and overseeing day-to-day activities associated with the parkland vegetation management programs, including integrated pest management programs, grazing, and the implementation of the fuel management treatment areas identified in the *East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan* adopted in 2010.

Routine trail maintenance tasks are directed at keeping the system in a safe and operable condition, including minimizing soil erosion where sedimentation is threatening water quality of stream channels and adversely impacting aquatic habitat from road/trail-related erosion. Activities typically include: trail monitoring to identify sub-standard road and trail conditions; and repair through various means incorporating, as appropriate, grading and/or mowing the trail surface, replacement of existing culverts, installation of new drainage structures, trenching, backfilling and minor realignment resulting from erosion and/or slope instability. In addition, ancillary facilities along the trails are repaired or replaced as needed, including benches and picnic tables. This work generally is performed by the District's Operations park staff, and supplemented by the District's Maintenance and Skilled Trades (MAST) staff, and trails crews overseen by the Trails Development Group.

District Interpretive and Recreation Services

The District's Interpretive and Recreation Services Department seeks to connect visitors to the natural environment through stimulating experiences that instill an appreciation of the region's resources, and motivate participants to conserve and protect them. In this effort, the District provides a variety of programs and services for school groups, families, and adult visitors. Naturalists offer regional interpretive programs based from ten District Visitor Centers, while Outdoor Recreation staff operates from the Tidewater Boating Center in Oakland. Interpretive services include natural and cultural historical walks, hikes, and talks, environmental restoration

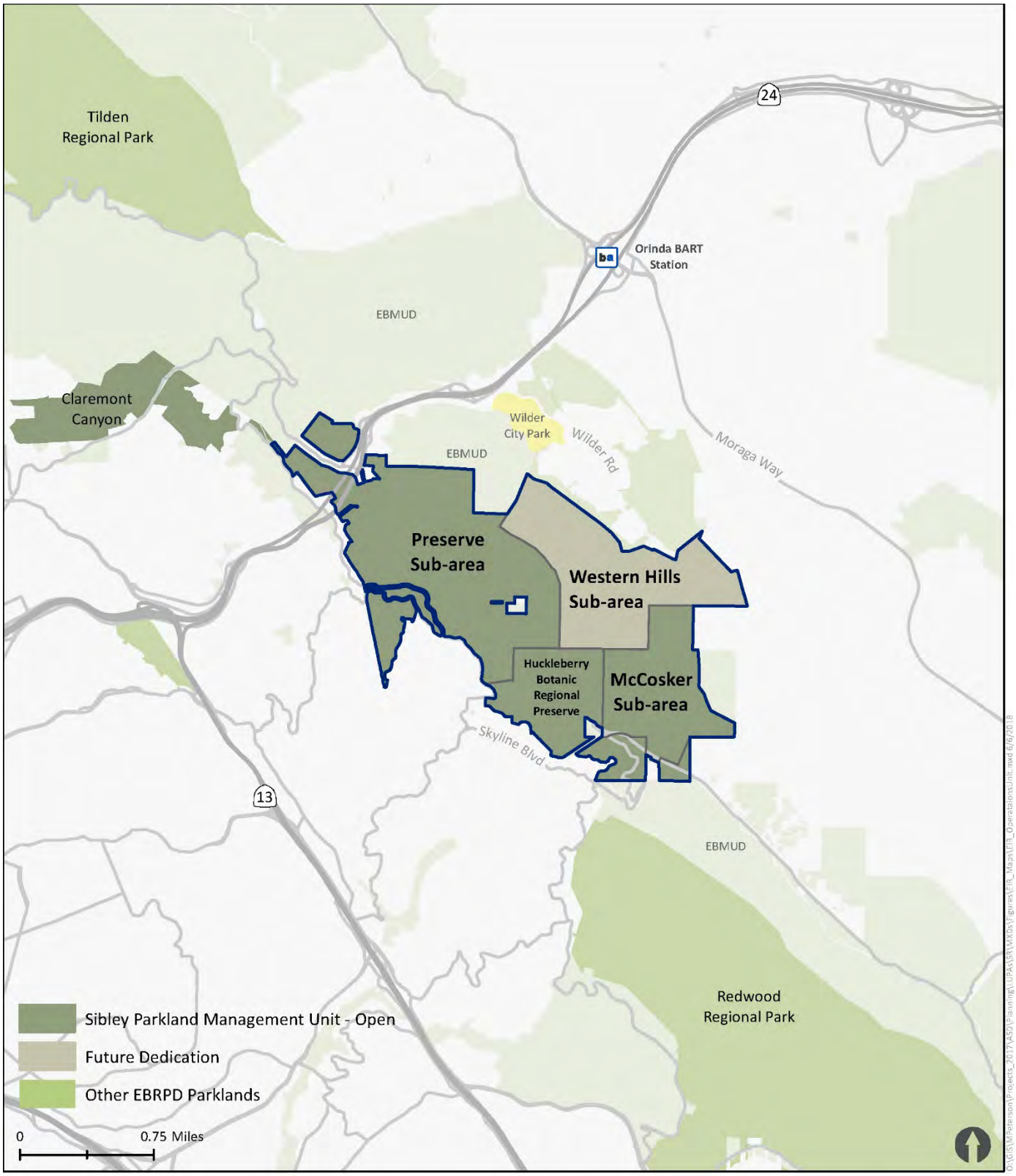

FIGURE 3.14-1: PROJECT AREA OPERATIONS UNIT

projects. They also provide wayside interpretive panels and self-guiding brochures. Recreation staff lead camping, hiking, biking, and summer day camp programs in the area. The Project area is served by the District's Central Interpretive Sector at Crab Cove Visitor Center in Alameda.

District Police Protection Services

The District provides police protection services to the Project area. The District maintains a full-time staff of police officers, dispatchers and fire responders based out of its Headquarters at Lake Chabot Regional Park in Castro Valley. Local city and District police classify Robert Sibley Volcanic Regional Preserve, Huckleberry Botanic Regional Preserve, and Claremont Regional Preserve as urban parks. Based on the geographic proximity to the adjacent cities, the parks share much of the same policing issues with their municipal counterparts. District police vehicles and helicopters patrol these parks daily.

Police Infrastructure

The District Police Department operates a two-county radio communications network and a fleet of patrol vehicles. The Police Department protects public safety via crime prevention activities, community outreach, patrols, emergency responses, and criminal investigations. The Police Department has an Air Support Unit (ASU) which consists of two helicopters. The ASU is staffed seven days a week and is strategically positioned at the Hayward Airport. The ASU is equipped to handle various missions depending on the need (law enforcement, medical, and fire).

Initial Response

The District Operations Staff and Public Safety Department work closely to address issues in the parks. Park Rangers often comprise the initial response and reporting of incidents while they are undertaking routine maintenance and/or other duties. However, the public sometimes reports incidents directly to local law enforcement or fire departments (e.g., Oakland Fire Department and Moraga-Orinda Fire Protection Services). The presence of Park staff helps to provide a deterrent to vandalism, auto burglaries, and potential trespassing onto adjoining private lands. In addition to Park Operations staff, the District has a grazing program that both the grazing tenant and District staff monitor on a routine basis providing an additional District presence on site.

Incidents

Calls for service in the Project area have included medical responses, lost and/or missing persons, marijuana growing issues, auto burglaries, and vandalism. Many of these calls are time, resource, and labor intensive. In addition to the calls for service that the District Police Department routinely handles in the area, on occasion, some calls in the Preserve sub-area have required outside agencies responses.

This area is also prone to illegal marijuana growing operations. These grows typically occur in the early spring through the end of summer. Addressing these types of operations can be labor intensive, involving Operations, Police, Fire and EBMUD. Issues associated with these operations include public safety, destruction of natural resources, hazardous materials, and extensive staff time to eradicate and restore the growing site.

District records from the Emergency Communications Center (Dispatch) show that from 2013 – March 2017, there were a total of 878 calls for service to which Public Safety personnel responded in Robert Sibley Volcanic, Huckleberry Botanic, and Claremont Canyon Regional Preserves as shown in *Table 3.14-3, 2013 – March 2017 Incident History*.

Public Safety personnel also respond to EBMUD joint powers agreement properties. Calls in the EBMUD service area frequently include medical responses, lost and/or missing persons, marijuana growing issues, auto burglaries, and vandalism. Many of these calls are also time, resource, and labor intensive requiring outside agency support.

Compared with other District parks, this area is ranked medium to high based on its proximity to other moderately used hiking parks and the local area population.

TABLE 3.14-3
2013 – MARCH 2017 INCIDENT HISTORY

PRESERVE	INCIDENT			
	Law	Citation	Fire	Total Calls by Area
Robert Sibley Volcanic Regional Preserve	267	112	27	322
Huckleberry Botanic Regional Preserve	55	12	5	64
Claremont Canyon Regional Preserve	194	9	25	215
EBMUD South Watershed	174	220	6	218
EBMUD Upper San Leandro Reservoir	34	65	2	59
			TOTAL CALLS	**878**

SOURCE: East Bay Regional Park District Police Department, March 14, 2017

Fire Protection Services

District Services

The District provides fire prevention, fire suppression, and life safety services to the Project area. Dispatchers and fire responders are based out of its Headquarters at Lake Chabot Regional Park in Castro Valley. The closest District fire substation to Sibley Preserve is located at Tilden Regional Park.

The District fire chief decides when to set level 1 or level 2 restrictions in accordance with the District's "fire danger operating plan." The Project area would be in the "west" rating area. Level 2 is the higher fire danger rating. Per the fire danger operating plan, the rating is based on the observed weather, temperature, winds, and moisture level in the air and the potential fuels (the natural vegetation). During level 1 or 2 fire ratings, the fire departments sends out an email to all park staff that are affected. A Level 1 restriction relating to camping and interpretive programs, is a "warning" level where campfires and barbecues in developed areas would still be allowable. Under Level 1 restrictions, parks operations staff do not use any gas-powered tools, unless there is an essential need, in which case staff is required to have fire suppression equipment on hand (e.g., water pump on a pickup), and possibly even a fire engine stationed at the site. Under a Level 2 restriction, campers would be allowed to camp, but they would not be allowed to have

any open fires or barbecues. The District fire chief also has the authority to close parkland areas in situations where public safety is at risk.

Mutual Response Area

In addition to District staff, the District has entered into a Mutual Response Area (MRA) Agreement with the Moraga-Orinda Fire Protection District (MOFD). This Agreement sets forth plans for coordinated responses to emergencies and service requests in defined areas of the District and the Moraga-Orinda Fire Protection District, including those designated as MRAs. Lands, which lie within the boundaries of the MOFD, include the following East Bay Hills Parks: Robert Sibley Volcanic Regional Preserve, Huckleberry Botanic Regional Preserve, Tilden Regional Park, and Redwood Regional Park. Under this Mutual Response Agreement, the District will immediately notify the Contra Costa Fire Communications Center of incidents that warrant a fire, Emergency Medical Service (EMS) or rescue response believed to be occurring within MOFD boundaries at the parklands listed above. Likewise, MOFD will immediately notify the District Communications Center of incidents that warrant a fire, EMS or rescue response believed to be occurring within these District parklands. Additionally, no language in this agreement is intended to preclude responses into the MRA by third party state or municipal agencies when resources are available from those agencies that can provide more rapid response and intervention to incidents that occur proximate to those agencies' boundaries. Such responses are considered by the respective Fire Chiefs and are included in relevant dispatch protocols and communications plans.

District Emergency Response and Evacuation Procedures

In the event of an emergency that could require evacuation of park visitors and/or adjacent neighbors, the District would employ the following procedures for disseminating coordinated information and resources with partner and contract agencies: 1) contact partner fire departments (e.g., MOFD) who would provide notification to residents in their areas using their standard protocols; 2) contact the District contracted agencies to assist with the evacuation; 3) employ the District helicopter(s) to the emergency hazard area and use the helicopter PA system to provide notification and directions for evacuating the site depending on the source/type of emergency; and 4) deploying District staff to escort people out of the emergency area.

Also refer to *Section 3.8 Hazards and Hazardous Materials, 3.8.1 Regulatory Framework*, for a discussion of emergency measures that are in place at the State and local level, including, *California Office of Emergency Service* regarding hazardous spills and releases, *Emergency Preparedness Plans* for coordination of information and resources within the region to ensure effective and efficient support to local response, *Fire Weather Operating Plan – Controlling Use in High Fire Hazard Areas* for District use restrictions and park closures, and *Emergency Operations Plan* for extraordinary emergency situations requiring planned, coordinated responses by multiple agencies and jurisdictions.

City of Oakland

The City of Oakland maintains Fire Station #24 in the Montclair District at 5900 Shepard Canyon Road, approximately 2.2 miles from Huckleberry Botanic Regional Preserve Trailhead on Skyline Boulevard.

District Volunteer Programs

Volunteer Trail Safety Patrol

The Police Department also deploys volunteers with the Volunteer Trail Safety Patrol Program (VTSP) into the parks to address public safety issues to augment the park staff's presence. VTSP members educate park visitors about District resources, programs, facilities, and rules. They operate in an observe-and-report role, working to foster positive relationships among user groups. Volunteers also assist with other related services within the parks. Volunteer patrol members participate in this program in the parkland areas that are open to the public.

Ivan Dickson Volunteer Trail Maintenance Program

The Ivan Dickson Volunteer Trail Maintenance Program, managed by the District's Regional Trails Department, offers trail maintenance and construction projects throughout its two-county jurisdiction. Volunteer projects are offered beginning in the spring and continuing into the late fall. Volunteers work under close supervision of District staff. Projects include pruning vegetation, removing invasive plant species, tread maintenance, trail reroutes, and the construction of rock walls and drainage structures.

3.14.3 Research Methodologies

This impact analysis focuses on potential effects on public services associated with the Project. The evaluation considers current conditions in the Project area, a review of mutual aid operating agreements, District plans, policies, and programs, applicable regulations and guidelines, interviews with service providers, Project construction and operations requirements, and visitor expectations based on recreation trends and District visitor data.

3.14.4 Significance Thresholds

CEQA Significance Criteria

Based on the CEQA Guidelines Appendix G Section XIV, a project would cause adverse impacts related to public services if it would:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities?

Criteria and Thresholds with No Impact or Not Applicable

Because of the nature of the Project and its physical setting, the Project would not result in impacts related to the following significance criteria; these criteria are not discussed in the impact analysis for the reasons presented below.

a) Police and Fire Protection. The Project area is currently covered, and would continue to be covered by the District's Public Safety and Fire Department and no changes to the MRA services or service area are anticipated. The on-site park security residence program that would provide an additional presence within the Project area would remain intact. Additionally, the Project would add emergency ingress and egress routes as part of the trail circulation system. Site improvements at the McCosker site would include additional water storage tanks and emergency phones within the developed recreation site allowing for improved communications and public safety in the event of an emergency. As a result, impacts from the Project improvements would not have a substantial adverse effect on service ratios, response times or other performance objectives for relating to fire and police protection. Therefore, this criterion is not discussed further in this EIR.

b) Schools. There are 29 schools located within approximately five miles of the Project area. The nearest school is Canyon Elementary School, located approximately one mile south of the McCosker sub-area at 187 Pinehurst Road in Canyon. While the Project would not have a direct impact on any of these schools, the Project would provide added opportunities for nearby schools to extend their recreational, educational, and cultural outdoor programs to new development sites and trails, thus providing a potential benefit for students in existing private and public school systems in the surrounding area. The Project would not physically alter any school facility or have substantial adverse effect on service ratios or other performance objectives at nearby schools. Therefore, this criterion is not discussed further in this EIR.

c) Western Hills sub-area Parks. The Western Hills sub-area, which would provide a connection between the Preserve Sub-area and McCosker Sub-area, will contain a staging area with a public restroom, and multi-use trails for walking, jogging, cycling, and equestrian use that would be completed prior to transferring the land to the District. These facilities and uses were established through prior planning efforts, including the 2004 *Second Supplemental Environmental Impact Report for the Montanera Project,* City of Orinda Resolution 13-05, and permit conditions. These provisions will add recreational opportunities and expand the overall park acreage of Robert Sibley Volcanic Regional Preserve consistent with District objectives. Management of this area by the District would be funded through a pre-determined resource management endowment established to augment service operations resources. As this parkland area was established under prior conditions and management responsibilities and the funding to cover those responsibilities have been addressed, this criterion is not discussed further in this EIR.

3.14.5 Impact Analysis

a) Impact PUB-1- The project could result in substantial adverse physical impacts associated with parks facilities, service ratios, response times or other performance objectives for Parks (Less than Significant with Mitigation).

Implementation of the Project elements in the Preserve sub-area, including additional parking at the Main Staging Area and Old Tunnel Road would improve existing public visitor services in the

Preserve sub-area, improve existing access to the staff resident/park office, and facilitate maintenance of the backpack campsite, but would not add to the staff responsibilities for this unit.

Implementation of the Project elements at the McCosker sub-area, including creek restoration activities, public access and recreation facility development, would result in physical alterations to the parkland landscape and add parkland uses that would enhance the visitors' experiences by improving the visual quality of creek channel and augmenting existing recreation and interpretive opportunities consistent with District objectives. Moreover, implementation of the ADA compliant Fiddleneck Field recreation area and Alder Creek Nature Trail would benefit park visitors with mobility limitations consistent with District park objectives for creating accessible circulation, programs, and facilities.

Project staffing has been allocated for the Operations unit that includes the Preserve and McCosker sub-areas, Huckleberry Botanic Regional Preserve, and Claremont Canyon Regional Preserve. District staff would also be responsible for Western Hills sub-area when this property is incorporated into Robert Sibley Volcanic Regional Preserve. To cover the added park acreage and anticipated park improvements, in 2016, the District Operations budget funded a 9-month ranger position when the McCosker property was being prepared to be opened to the public. In accordance with the District staffing "pipeline" an additional 9-month ranger position would be scheduled to come on-line to serve the Project area once the McCosker sub-area public access and recreation improvements are built and operational. Also, as described above, management responsibilities for the additional parkland area and facilities would also be partially covered by a pre-determined endowment.

Moreover, the proposed Project improvements include several elements that would help to facilitate staff operations and enhance public safety. These include: 1) incorporating an all-weather access roadway system to service the developed recreation sites and maintaining emergency vehicle and maintenance access throughout the Project area; 2) providing equipment storage facilities to facilitate maintenance of the recreation sites; and 3) maintaining and augmenting the on-site park security residence program with emergency response features, including additional water storage tanks, emergency phones, and creation of an area that could be dedicated to emergency response within the developed recreation site located in the McCosker sub-area.

So, while these improvements to existing facilities would have a beneficial effect on public park services in the long term and there are provisions in place to add staffing to cover the added maintenance and operations of the proposed Project improvements, over the short term, construction activities would disrupt current recreational use of the site through temporary closure of park access points at the Main Staging Area, Old Tunnel Road and Pinehurst Road, requiring mitigation.

The following mitigation would be required to minimize disruptions to visitors' access to District park facilities, programs and services during construction activities.

Mitigation Measure PUB-1-1: Project-wide - Noticing and Outreach Plan

Temporary impacts to recreation uses resulting from temporary closure of existing recreational facilities, including staging area, trailheads and trails, during: 1) repair and

maintenance work in the Preserve sub-area; and 2) construction of the creek restoration project and development of recreational facilities within the McCosker sub-area shall be minimized through advance communication and redirection to the nearest comparable facilities. Noticing and outreach shall include the following components:

- The District shall post notices at key access points in the Project area that identify the closure area and provide information on the nature of the closures and the anticipated duration.
- Public Affairs staff shall be briefed as to Project construction-related closures and disruptions, such as added noise and dust in a normally tranquil setting, occasional traffic disruptions, or potential reduction in available parking at park staging areas and access points.
- The District shall provide notice of construction activities on its website as the Project is implemented.
- Prior to acceptance of construction documents, the District shall review the plans and specifications ensure that they contain language requiring the construction contractor to post signs at entrances in the Project area at least one month in advance of construction, indicating the construction schedule and alternative recreation facilities (including location and hours of operation) located in the service area that can be used during the construction period. This measure will be monitored and enforced by the District.

Significance after Mitigation: *Less than significant.*

3.14.6 Cumulative Effects

Geographic Extent/Context

The Project area is in the East Bay Hills, where there are several District parklands that provide similar trail and camping experiences that could compensate for the temporary disruption of services in the Project area with the proper notifications provided through mitigation. In the long-term, the Project area is within a defined MRA area and the District has made provisions for additional staffing as Project elements are put into operation. Moreover, in the long-term, the added public access points, and expansion of the trail system and camping opportunities would benefit the objectives of regional trail networks and add to public park services in the geographic area.

Past, Present, and Reasonably Foreseeable Projects

Acquisitions beginning in 1936 and continuing in 2010 with the donation of the McCosker parcel and the anticipated transfer of the Western Hills Open Space have served to expand the Robert Sibley Volcanic Regional Preserve northeast towards the City of Orinda and south into the unincorporated area of Canyon adding to the public recreation services available to the East Bay, Lamorinda and Canyon communities consistent with District park objectives.

In the Project vicinity, there are several public serving projects proposed or in progress that would beneficially contribute to the overall recreation opportunities within and adjacent to the Project area. These include City of Orinda facilities that would be managed by the City of Orinda.

In cases of emergency, existing mutual aid agreements would enable the first responder to respond to incidents within and adjacent to the Project area. Therefore, cumulative impacts related to providing quality public services, including emergency response, at existing and proposed public facilities in the Project area are anticipated to be *less than significant*.

3.14.7 References

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3.15 Recreation

This section describes existing recreation conditions that could affect or be affected by the Project. This section also describes laws, regulations, plans, and policies relevant to the development and use of recreation facilities. Policies affecting land use designations are described in *Section 3.10, Land Use and Planning. Section 3.14, Public Services* describes recreation services, and programs, and staff presence and responsibilities. Regional demographics are covered in *Section 3.13, Population and Housing*. Impacts associated with the land alterations resulting from the proposed construction activities are also discussed in *Sections 3.3, Air Quality, 3.4, Biological Resources, 3.5, Cultural and Cultural Tribal Resources, 3.6, Geology and Soils,* and *3.9, Hydrology and Water Quality,* along with applicable regulations, standard Best Management Practices, and mitigations that would serve to reduce Project activities to below the level of significance.

3.15.1 Regulatory Framework

The Project is subject to legal and regulatory provisions including: 1) the designation of a special district under the State Public Resources Code; 2): established resource protections and permit conditions; and 3) local regulations. Following is a summary of applicable land use plans, policies, and regulations of agencies with jurisdiction over the Project.

Federal Regulations

There are no federal regulations governing recreation facility development or recreation uses.

State Regulations

Refer to *Section 3.10, Land Use and Planning* for State regulations defining provisions for Special Districts.

Local Resource Protection Policies

Refer to *Section 3.10, Land Use and Planning, Table 3.10-1, City and County General Plan Land Use and Planning Goals and Policies* for city and county general plan policies guiding the planning development of public recreation amenities.

District Mission and Policies

The 2013 District Master Plan defines the long-term vision for lands managed by the District. The Master Plan provides a decision-making framework, and identifies policies that will achieve District-wide objectives. Development objectives, land use classifications, and planning and management guidelines are established by the Master Plan.

Master Plan Vision and Mission

The Master Plan adopted in 2013 defines the vision and mission of District with the core mission stated as follows:

"*Preserve a rich heritage of natural and cultural resources and provide open space, parks, trails, safe and healthful recreation and environmental education. An environmental ethic guides the District in all of its activities.*"

Master Plan Policies

The District Master Plan contains policies offering a wide range of public recreation facilities and services with the intent of providing safe and healthful recreation and environmental education experiences as described in *Table 3.15-1, 2013 District Master Plan Goals and Policies*.

TABLE 3.15-1
2013 DISTRICT MASTER PLAN GOALS AND POLICIES

Goals and Policies	Project Consistency
PA1: The District will use the concepts of the Healthy Parks Healthy People movement to focus its outreach and education efforts. To achieve the goals of the Healthy Parks Healthy People movement the District will partner with other park, recreation and community organizations; along with schools, local health providers and businesses to provide opportunities for families and individuals to experience both traditional and non-traditional types of outdoor activities while reconnecting to the outdoors.	Consistent with Master Plan Policy PA1, the Project would provide opportunities for the District to conduct bi-monthly Multicultural Wellness Walks in coordination with the Healthy Parks Healthy People Bay Area coalition on existing and new trails that would make up the Project trail system.
PA5: The District will cooperate with local and regional planning efforts to create more walkable and bikeable communities, and coordinate park access opportunities with local trails and bike paths developed by other agencies to promote green transportation access to the Regional Parks and Trails.	Consistent with Master Plan Policy PA5, the Project considers, transit opportunities, access points and trails and bike paths developed by other agencies to promote green transportation access to the Project area.
PA6: The District will comply with the requirements of the Americans with Disabilities Act and use the current edition of the California State Parks Accessibility Guidelines as its standard for making the improvements necessary to create accessible circulation, programs and facilities throughout the Park District.	Consistent with Master Plan Policy PA6, the Project would comply with the requirements of the Americans with Disabilities Act and use the current edition of the California State Parks Accessibility Guidelines in the developed Recreation/Staging Units including expanded parking areas, the Fiddleneck Field recreation area and the Alder Creek Nature Trail.
IRS1: The District will provide a variety of interpretive programs that focus attention on the region's natural and cultural resources. Programs will be designed with sensitivity to the needs and interests of people of all ages and backgrounds. Programs will enhance environmental experiences and foster values that are consistent with conserving natural and cultural resources for current and future generations to enjoy. The District will pursue and encourage volunteer support to assist in meeting these objectives.	Consistent with Master Plan policy IRS1, the Project would provide a variety of interpretive programs that focus attention to the region's natural and cultural resources through the implementation of Project Objective 4: Recreation Facility and Interpretive Program Elements which states: "*Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural history*." Additionally, the Project would incorporate existing volunteer programs and establish new volunteer opportunities into the implementation plan for the Project.
IRS2: The District will offer recreational programs and services that appeal to participants of all ages and backgrounds, in keeping with its vision and mission. The District will create and manage a comprehensive offering of recreational opportunities, tours and outdoor skills training that will help visitors use	Consistent with Master Plan Policy IRS2, the Project includes the following Objective 4: Recreation Facility and Interpretive Program Elements. The Project would implement this objective through the development of the Fiddleneck Field recreation area, which would enable the District to add recreational programs and services that appeal to participants of all ages and backgrounds to the McCosker sub-area.

Goals and Policies	Project Consistency
and enjoy the parks and trails, and will collaborate with other agencies, organizations and partners to provide a broad spectrum of regional recreational opportunities.	
RFA1: The District will provide areas and facilities that serve the recreational needs of park users, in accordance with the plans, policies and park classifications adopted by the Board of Directors. The District will generally not develop or provide facilities that are more appropriately provided by local recreational and park agencies. Where possible and appropriate, the District will provide multiple-use facilities to serve recreation needs.	Consistent with Master Plan Policy RFA1, the Project would provide areas and facilities that serve the recreational needs of park users, in accordance with the plans, policies and park classifications adopted by the Board of Directors through the implementation of Project Objective 4: Recreation Facility and Interpretive Program Elements.
RFA2: The District will provide a diverse system of non-motorized trails to accommodate a variety of recreational users including hikers, joggers, people with dogs, bicyclists and equestrians. Both wide and narrow trails will be designed and designated to accommodate either single or multiple users based on location, recreational intensity, environmental and safety considerations. The District will focus on appropriate trail planning and design, signage and trail user education to promote safety and minimize conflicts between users.	Consistent with Master Plan Policy RFA2, the Project would provide a diverse system of non-motorized trails to accommodate a variety of recreational users through the implementation of Project Objective 3: Trail Development which states: "*Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda."* One of the supporting strategies for Objective 3 states: "*Provide connectivity via a multi-use trail system (e.g., hike, bike, equestrian, dog walking) including narrow, natural surface trails, that provide access from the McCosker site to Western Hills Open Space Staging Area, Orinda bike routes, existing Sibley Round Top Trail, and Huckleberry Preserve, while recognizing that not all uses may be appropriate for all trails."*
RFA3: The District will continue to add narrow trails designated as both single-and multi-use for hikers, equestrians, people with dogs, and bike riders.	Consistent with Master Plan Policy RFA3, the Project would add narrow trails designated as both single-and multi-use for hikers, equestrians, people with dogs, and bike riders. through the implementation of Project Objective 3.
RFA4: The District will expand its unpaved multi-use trail system as additional acreage and new parks are added.	Consistent with Master Plan Policy RFA4, the Project would add 3.9 miles of unpaved multi-use trails to the Robert Sibley Volcanic Regional Preserve. Multi-use trails linking parks and park visitor destinations would be accomplished through implementation of an Objective 4 Recreation Facility and Interpretive Elements strategy that states: "*Provide backpack camp opportunities within the developed recreation area to encourage multi-day trail treks along the interconnected system of trails through the East Bay Hills, including the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail and add to the Skyline/Bay area Ridge Trail/Anza national Historic Trail system functions through development of a multi-day trek and camping opportunity in the East Bay Hills."*
RFA6: The District will continue to develop group and family picnic facilities throughout the parks system.	Consistent with Master Plan Policy RFA6, the Project would include the development of group and family picnic sites in the McCosker sub-area in the developed recreation sites referred to as Fiddleneck Field and Fern View Terrace. Group activities would be reserved using the District reservation system.
RFA9: The District will continue to develop a balanced system of regional camping facilities, including day camps, group camps, backpack camps, family camps and residential camps.	Consistent with Master Plan Policy RFA9, the Project includes the following strategies under Objective 4 Recreation Facility and Interpretive Elements: 1) *"combine interpretive and small rustic group camp recreation programs within the McCosker sub-area into one facility limiting development to previously disturbed areas*;" and 2) "*provide backpack camp opportunities within the developed recreation area to encourage multi-day trail treks along the interconnected system of trails through the East Bay Hills, including the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail*." The Project would implement this objective through the development of the Fiddleneck Field reservation-only group camp and backpack camp facilities. Implementation of the proposed 3.9 miles of new trails

Goals and Policies	Project Consistency
	would further enhance opportunities for multi-day treks along the interconnected system of trails through the East Bay Hills. Camp sites would be reserved using the District reservation system.
RFA10: The District will continue to provide special recreational facilities throughout the parklands to broaden the range of opportunities in the parks and to take advantage of existing resources. The District will ensure that these facilities are compatible with the District's vision and mission, with other parkland resources and priorities, and with public needs and demands.	Consistent with Master Plan Policy RFA10, the Project would provide recreation facilities and interpretive programs, including the development of new trails, camping and interpretive sites and by opening existing trails in natural areas, opening new access points and augmenting existing parking to broaden the range of opportunities and to take advantage of existing resources.
PRPT10: The District encourages the creation of local trail networks that provide additional access points to the regional parklands and trails in order to provide loop trail experiences and to connect the regional system to the community. The District will support other agencies in completing local trail networks that complement the Regional Trail system and will coordinate with local agencies to incorporate local trail connections into District brochures.	Consistent with Master Plan Policy PRPT10 the Project would add 3.9 miles of unpaved multi-use trails to the Robert Sibley Volcanic Regional Preserve and add two access points to provide loop trail experiences and to connect the regional system to the community in accordance with Project Objective 3 which states: "*Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda."* These additions included coordination with local agencies to incorporate local trail connections to District parklands via local agency trails and bikeways through a variety of outreach and wayfinding measures.
PRPT11: Regional trails may be part of a national, state, or Bay Area regional trail system. The District will cooperate with other agencies and organizations to implement these multijurisdictional efforts.	Consistent with Master Plan Policy PRPT11, the Project considers the 31-mile East Bay Skyline National Recreation Trail, also known as the "Skyline Trail", and more recently overlain with segments of the Bay Area Ridge Trail (Ridge Trail) and the Juan Bautista de Anza Trail (Anza Trail) as part of the trail system planning and provides trail connections and backpack opportunities that would add benefits to these regional systems.
PRPT18: The District will coordinate with other agencies and organizations involved in planning for jointly managed regional trails or trails that extend beyond the District's jurisdiction. When applicable, the District will use planning and environmental studies done by or in cooperation with other agencies for trail planning and development.	Consistent with Master Plan Policy PRPT18, the Project considers the 31-mile East Bay Skyline National Recreation Trail, also known as the "Skyline Trail", and more recently overlain with segments of the Bay Area Ridge Trail (Ridge Trail) and the Juan Bautista de Anza Trail (Anza Trail) and prior planning efforts for local trail and bike systems that extend beyond District boundaries as part of the Project trail and bikeway system.
PRPT21: Areas of higher level recreational use and concentrations of service facilities will be designated as Recreation/Staging Units. Where possible, these areas will be clustered and located on the edges of the park.	Consistent with Master Plan Policy PRPT21, proposed recreation facilities and activities within the Project Area would be clustered and located in Recreation/Staging Units. The total developed area within the Recreation/Staging Units would be approximately 12.4 acres or approximately one percent of the 1,318-acre Project area. This amount of development would be consistent with the Master Plan objectives for a Regional Preserve.
PRPT24: The District will seek to locate facilities in a manner that preserves open space whenever possible. The District will design proposed facilities so that their color, scale, style and materials will blend with the natural environment. Park improvements will be designed to avoid or minimize impacts on wildlife habitats, plant populations and other resources.	Consistent with Master Plan Policy PRPT24, proposed recreation facilities and activities within the Project Area would be in previously developed areas. Recreation amenities would be would be designed to fit with the natural character of the site, would consider ease of maintenance, site aesthetics, and the surrounding natural environment to avoid or minimize impacts on wildlife habitats, plant populations and other resources.

District Ordinance 38

Portions of District Ordinance 38 address recreation services. Applicable sections of Ordinance 38 directed at providing a safe visitor experience when engaging in existing and proposed recreation activities in the Project area are summarized in *Table 3.15-2, Ordinance 38* below.

TABLE 3.15-2
RELEVANT ORDINANCE 38 SECTIONS

Section 400.1. This section states that, "No person shall maintain a camp within District parklands without a valid permit."
Section 400.2. This section states that, "No person shall operate a generator or sound amplification device including radio, television, tape or record playing device, or speaker system in a campground, if such operation disturbs other campers."
Section 400.4. This section states that, "No person who is a juvenile (unmarried person under the age of 18 years) shall camp in parklands unless accompanied by a parent or guardian or is part of a group permitted to occupy parklands at night and who is supervised by at least one responsible adult over the age of 21 for each ten juveniles."
Section 400.5 This section states that, "All persons at a campsite may be removed if there is a violation of state law, this Ordinance, or campground rules at the campsite."
Section 404. This section states that, "No person shall build, light or maintain any open outdoor fire on park property except in those facilities or areas provided and so designated for that purpose. Exceptions to this requirement must be obtained in writing from the District Fire Chief. No person shall leave a fire unattended on District parklands."
Section 404.1. This section states that, "Personal appliances such as gas or propane camp stove, portable barbecue or hibachi may be used if placed in an area that will not scorch, burn or otherwise damage lawns or table tops and at least 30 feet from any flammable material such as grass, weeds, wood chips, brush or buildings. All burning fuel such as wood or charcoal must be thoroughly extinguished before being disposed of in an existing fireplace, fire pit or barbecue grill. It is unlawful to dispose of coals in garbage cans or refuse bins."
Section 404.1. This section states that, "Smoking is prohibited in the East Bay Regional Park District with the exception of overnight campsites. "Smoking" means inhaling, exhaling, burning or carrying any lighted pipe, cigar, cigarette, weed, plant or other combustible organic or chemical substance, the smoke from which is specifically designed or intended to be inhaled or drawn into the nose or mouth."
Section 408.1. This section states that, "The District's parks or facilities shall be made available for the exclusive use of person and groups for activities which are appropriate as defined in the District's Master Plan or specific Land Use Development Plan for the involved Regional Park, subject to the issuance of a permit by the Assistant General Manager, Operations and Interpretation. No use of any Regional parkland or facility for musical, theatrical or other entertainment, special event, or for pre-advertised assemblies may be made without the issuance of a permit therefore. (Group picnics, or other similar activities at established picnic areas, do not require a special event permit.) All applications for such use of any park or facility must be signed or co-signed by an adult, which adult shall agree to be responsible for said use. No use permit will be granted if, prior to the time the application was filed, the District has scheduled a District event or general public use at the same time and place as the activity proposed in the application."
Section 404.2. This section states that, "Any person applying for a park or facility permit hereunder shall file an application (in the form and time schedule established by the District) for such permit with the Assistant General Manager, Operations and Interpretation."
Section 404.3. This section states that, "A permit shall be denied or canceled if the proposed use or activities: a) Cause injury or damage to park resources; or b) Be contrary to the purposes for which involved park areas were established, as defined above in Section 408.1, or unreasonably impair the atmosphere of peace and tranquility maintained in the park; or c) Unreasonably interfere with interpretive programs, visitor services or other District program activities, or with Public Safety or administrative activities of the District; or d) Substantially impair the operation of public use facilities or services of concessionaires or contractors; or e) Present a clear and present danger to the public health and safety; or f) Result in significant conflict with other existing uses; or g) Insurance or other permit conditions cannot be complied with by applicant. h) Affects the aesthetics of or alters the landscape of the parks."
Section 409.8. This section states that, "Bicycles are not permitted to ride cross-country on regional parklands. All bicycle use is restricted to permitted trails only. a) It shall be unlawful to ride or operate any bicycle or personal conveyance at any place within the District: In a negligent, unsafe or reckless manner or in a way that endangers the life, limb or property of any person or in violation of the provisions of California Vehicle Code section 21201. b) It shall be unlawful to ride or operate any bicycle or personal conveyance at any place within the District: At excessive speeds, especially when passing other trail users, or in areas with short sight distances, or in an irresponsible manner in violation of published trail etiquette or posted bicycle speed limits. h) Bicycle and Personal Conveyance Speed Limits: Bicycles and personal conveyances shall not be ridden at a speed exceeding 15 m.p.h. on any trail with a posted speed limit. Other power-driven mobility devices shall be operated at a speed not to exceed 10 m.p.h. Required Equipment. 1) Any bicycle operated during the hours of darkness on any District property shall be equipped with lighting as specified in California Vehicle Code Section 21201(d). Personal conveyances shall not be operated during the hours of darkness. For purposes of the sub-section, hours of darkness shall be the same as defined in California Vehicle Code Section 280, to wit, '…any time from one-half hour after sunset to one-half hour before sunrise…'. 2) At a distance of not less than 50 feet when overtaking or approaching other trail users a verbal warning shall be called out or an audible device sounded by approaching bicyclists and operators of personal conveyances

as required by the District's published rules of trail etiquette. 3) A properly fitted and fastened helmet must be worn by any person under the age of 18 when operating a bicycle on District lands (added 4/12). (rev. 4/12).
Section 601. This section states that, "No person shall ride, drive, lead, or keep any saddle or pack animal in a reckless or negligent manner so as to endanger the life, limb, or property of any person or animal. No person shall allow his saddle or pack animal to stand unattended or insecurely tied."
Section 602. This section states that, "All persons opening a gate shall close the same after passing through it."
Section 801.2h. This section states that, "No dog, cat, or other animal may be left unattended (if not contained) at any parkland."
Section 801.2i. This section states that, "Dogs, cats, or other animals must be attended and either leashed, or contained within a vehicle, tent or other type of physical confinement at campgrounds."
Section 801.2 d. This section states that, "The number of dogs shall not exceed three per person, except as permitted in 801.11 (Ordinance 38, 801.2 sub-section d)."
Section 801.2 d. This section states that, "No person shall ride or operate a bicycle or ride a horse within a posted Special Protection Area, except on designated trails. Special Protection Areas are designated by the Board to preserve cultural and/or natural resources (added 4/12)."
Section 900.2. This section states that, "No person shall litter or cause to be littered any District parkland, or cause to be dumped any waste matter in or upon any District parkland. It shall be unlawful to place, deposit, or dump, or cause to be placed, deposited or dumped, any rocks or dirt in or upon any District parkland without the prior written consent of the General Manager. Any person littering or dumping any waste material upon District parkland shall be arrested or issued a citation pursuant to Penal Code Sections 374.4 and 374.3."

District Dog Policies and Ordinances

As described above, under Master Plan, RFA1, the District will, where possible and appropriate, the provide multiple-use facilities to serve recreation needs, including per RFA2 and RFA3 a diverse system of non-motorized trails, including new narrow trails to accommodate a variety of recreational users including …. people with dogs…

In accordance with Ordinance 38, dogs are required to be on leash in: parking lots or staging areas, picnic areas, and specific trails that the Board has designated as "*Dog on Leash Required Areas*" including, but not limited to: posted sections of the Bay Trail in or near wildlife sensitive areas, and Sibley/ Skyline National Trail – between Skyline staging and the northern property boundary with EBMUD. In campgrounds dogs must be attended and either leashed or confined. On trails that cross or enter lands owned by others, dog owners are to comply with the other agency's rules and regulations including EBMUD lands. The number of dogs shall not exceed three per person, except as permitted. In addition, the following Ordinance 38 Sections provide additional requirements relating to dogs in District parklands pertaining to these topics. 801.1-Prohibited Areas, 801.2-Leash Required Areas, 801.3-Leash Optional Areas, 801.4-Reporting Dog Bites, 801.5-License and Tags, 801.6-Seizing Unattended Dogs, 801.7-Dangerous Dogs, 801.9-Attack Dog Training, 801.10-Removal of Dog Feces, and 801.11-Commercial Dog Walking, 801.12-Dog Digging. Per Resolution 2016-12-318, dogs are not currently allowed in the McCosker Sub-area. Per the Long Term Management Plan for the Western Hills Sub-area, dogs will be required to be on leash when the land is transferred to the District.

The reasoning behind these rules on dogs in District parklands is described on the District Website http://www.ebparks.org/activities/dogs/faq.htm - "Why do we have these rules," "*The District provides permanent sanctuaries for native wildlife and vegetation. Once abundant, these irreplaceable resources are rapidly resources are rapidly disappearing. As Pressures from the expanding human population increase, the parklands become even more important as refuges for*

wildlife. Most parks have reports of dog attacks on animals, particularly deer, ground nesting birds and recently, fish spawning area in redwood, Wildcat and Almeda Creek. When dog owners cooperate with the rules, the impact of domestic animals on wildlife is reduced. We need to work together to protect the healthy and diverse wildlife population" [Presentations to EBRPD PAC May 22, 2017, June 26, 2017].

District Bike Policies and Ordinances

For the purposes of this section, "Bicycle" is defined as any two or three-wheeled vehicle propelled by the use of human power. "Bicycle" includes "road bike," "mountain bike," "BMX bike," and similar devices.

As described above, under Master Plan, RFA1, the District will, where possible and appropriate, the provide multiple-use facilities to serve recreation needs, including per RFA2 and RFA3 a diverse system of non-motorized trails, including new narrow trails, to accommodate a variety of recreational users including hikers, joggers, people with dogs, bicyclists, and equestrians.

In accordance with Ordinance 38, bicyclists are required to ride on permitted trails in a responsible manner at speeds not exceeding 15 miles per hour. Bicyclists under the age of 18 must wear a helmet when operating a bicycle on District lands. Bicyclists are generally allowed on multi-use ranch roads trails, except where specifically prohibited. Bicyclists are not permitted within a posted Special Protection Area, except on designated trails. While Master Plan Policy RFA3 calls for the continued addition of bikes on narrow trails, under the authority of Ordinance 38 Sections 409.8(d) and 409.8(f), bikes on narrow trails are not allowed except where specifically designated in the Ordinance, including the section of the Skyline National Recreation Trail between Sibley Staging and Old Tunnel Road within Sibley Regional Preserve. Prohibitions on bike use include Sibley Round Top Road from EBMUD Water Tank Road junction to top of Round Top Peak and Huckleberry Regional Preserve.

District Equestrian Policies and Ordinances

For the purposes of this section equestrian use is referring to any saddle or pack animal. In accordance with Ordinance 38, similar to dogs in parks, saddle or pack animals are not to be handled in a reckless or negligent manner that would endanger property or any person or animal and these animals must not be left unattended or insecurely tied. Additionally, these animals are to be restricted from … nature areas, picnic areas, and lawn or turf areas, or any other area designated from time to time by the Board as so restricted (Ordinance 38, Sections 600, 601).

District Resolution 1996-4-80

Subject to availability of funding and specific Board action on individual elements, the proposed camping program should make available for interested East Bay residents a wide range of different and exciting camping experiences. It is intended that the camping experiences be diverse in nature, and that the camping sites be selected in a manner that assures a reasonable accessibility for East Bay residents, wherever they may live in the two-county area. Although, a minimum number of improvements will necessarily be provided to accommodate the public, the

District's planning efforts will aim to retain a maximum natural environmental setting. It is intended, also, that the camping facilities and experience will:

- Be of a regional nature.
- Occur in those selected District facilities in which the activity will not compromise or endanger the quality of the environment; all proposed individual camping programs (facilities and operations) will be subject to:
  - CEQA review and the park planning process.
  - Be established with an awareness and participation of the neighboring communities which are in close proximity to the facility in which the camping activity is proposed.
  - Be designed to ensure appropriate access by persons with disabilities.

District Camping Program Update

A camping site at the Robert Sibley Volcanic Regional Preserve - McCosker sub-area was identified in the *East Bay Regional Park District Camping Program Update* (July 2014) with access to the site to be provided through the Town of Moraga.

Table 3.15-3, Camping Program Update identifies the requirements that the Camping Update stated would need to be met before the McCosker site should be considered for development and the ways that the Project would meet these criteria.

TABLE 3.15-3
CAMPING PROGRAM UPDATE

Camping Program Update	Project Consistency
Policy: Would require LUP amendment and environmental review.	The Project is a LUPA being considered in this Environmental Impact Report review
Immediate Benefit: Some. Poor vehicular access for busses or large vehicles from the west. Closest to the Moraga area.	Access to the site to be directed through the Town of Moraga. The Project does not recommend use of large busses to access the site.
Capital Improvement Cost & Partnerships: Unknown.	As part of the Project, budget estimates have been developed and a capital financing plan has been prepared. To date, the District has obtained over four million dollars in funding that could be leveraged with District funds to complete the Project improvements.
Access: Access improvements for operations need to be determined.	The Project would include an improved circulation plan for operations and emergency response.
Utility and Infrastructure: Potable water, sanitary, electricity, and in the case of equestrian use, non-potable water need to be determined.	The Project would include a utility and infrastructure improvement plan for potable water, sanitary, electricity, and in the case of equestrian use and other livestock, non-potable water.
General Site Development: Tent areas, picnic tables, fire pits / barbecues, open meadows in the case of group camps, irrigation, shade structures, outdoor classrooms, and other facilities need to be determined.	The Project would include development of a combined group camping and interpretive program area that would include tent areas, picnic tables, fire pits / barbecues, open meadows, and shade structures.
Standards and Codes: Features would have to be ADA compliant.	The Project calls for the developed recreation area, including the combined camp-interpretive site and nature trail, to be designed to be ADA compliant.

Camping Program Update	Project Consistency
Permitting: Special permitting as may be required based on site resources.	The Project would be reviewed by the applicable federal and state environmental regulatory agencies for potential effects on site resources and the construction documents would be reviewed by the District and local agencies for constructability.
Management: Development of site would add a new use facility to the District requiring some additional staff. This may be offset somewhat as there is an existing residence on the site that could be used to help manage the camp. Operational equipment needs to be considered.	The Project would provide a District presence through retention of an existing residence as a park security residence/staff office. The Project would retain/rebuild the existing equipment shed to house equipment needed to manage the new recreation facilities. In 2016, the District Operations budget funded a 9-month ranger when the McCosker property was being prepared to be opened to the public. In accordance with the District staffing "pipeline" an additional 9-month ranger position would be scheduled to come on-line to serve the Project area once the McCosker sub-area public access and recreation improvements are built and operational.

3.15.2 Existing Conditions

District Service Area

The District is a special district founded in 1934 to acquire, manage, and operate an organization of public parks, open spaces and trails in Alameda and Contra Costa Counties.

The Project lies within the limits of the District, which operates 73 parks including the Project area. Robert Sibley Volcanic Regional Preserve is considered one of District's Regional Preserves. Development and use of the parkland parcels that would be added to this Preserve would be developed to adhere to the provisions of a Preserve parkland as defined in the District Master Plan.

The 2013 Master Plan identifies a Regional Preserve as:

> "*An area with outstanding natural or cultural features protected for their intrinsic value as well as for public enjoyment and education. The size of a natural or cultural Preserve must be sufficient to ensure that its significant resource(s) can be managed so as to be protected and enjoyed. Significant resources consist of botanical, wildlife, geologic, topographic, archaeological, historic, or other features. The Recreation/ Staging Unit(s) providing for public access and services will comprise no more than five percent of the area.*"

Parkland Dedication

Recreation in the Project area has an extensive history dating back to 1936 when the District purchased the first lands that now comprise Robert Sibley Volcanic Regional Preserve from EBMUD. Robert Sibley Volcanic Regional Preserve, Temescal Regional Recreation Area, and Claremont Canyon Regional Preserve formed the original nucleus of the East Bay Regional Park system that now encompasses over 121,397 acres of District lands.

Today, Robert Sibley Volcanic Regional Preserve is part of a parkland unit that also includes Huckleberry Botanic Regional Preserve and Claremont Canyon Regional Preserve. This parkland

unit straddles the East Bay Hills in an elongated band approximately two miles in length and extends down from the ridgeline into the City of Oakland to the west and the unincorporated community of Canyon to the east.

Relevant District Recreation Facility and Program Types

Group Camps

Group camps are sites for both day and overnight organized camping for youth, adult, and special interest groups. Group camping is typically a weekend activity involving one or two overnights. There are two types of group campsites:

- "Developed" group camps are located within family camps and may include amenities such as easy access, and access to shower and flush toilets and may have electrical service.
- "Primitive" group camps are generally in more remote locations, have chemical or vault toilets, and no access to showers.

There are three developed group sites within the District, one at Anthony Chabot Regional Park and two at Del Valle Regional Park. The remaining 33 sites are primitive group camps.

Equestrian Camp Facilities

Equestrian camp facilities range from primitive without potable water to more developed with corrals and/or hitching posts, potable water, and vault toilets. In some cases, a group camp is also used as an equestrian camp. These facilities may also be identified along the regional trail system coordinated with backpack camp locations facilitating overnight rides by individuals and groups.

Backpack Camps

Backpack camps are sites with minimum facilities, providing traditional trail-related tent camping in a natural setting. Backpack camps typically serve from one to 24 campers. There may be individual and group use options at any camp. They are available for reservation by individuals and small groups for overnights at a single park, or at several parks sequentially for longer treks using the regional trail system. There are 22 backpack camp locations within the District. Typical facilities include a toilet, water, and picnic table. However, backpack sites do not necessarily have potable water. Use of backpack camps generally requires camp stoves for cooking, as most sites do not have fire rings / barbecues.

Regional Trails

Regional trails connect parklands and communities, often forming the backbone for a network of trails within individual District parks, preserves and wilderness areas. The regional trail system within the District has made great strides over the last 20 years in becoming a reality. This is particularly true for the Skyline National ~~Historic~~ Recreation Trail, San Francisco Bay Trail, the Bay Area Ridge Trail, the Juan Bautista de Anza National Historic Trail, the Briones to Mount Diablo Trail and other long-distance trail connections that traverse the two-county District. Sections of the Skyline National ~~Historic~~ Recreation Trail, the Bay Area Ridge Trail, and the Juan Bautista de Anza National Historic Trail are overlain as one trail route in the Project area.

Overall, trail use on these regional trails, as well as local connecting trails, is growing as the nexus between trail-related recreation and public health becomes more evident.

National Outdoor Recreation Trends

Americans' participation in outdoor recreation activities has remained fairly constant over the last half dozen years, at about 50 percent according to studies conducted by the Outdoor Foundation, but due to population growth, the total number of people active outdoors has continued to increase. Outdoor Foundation studies have also found that national participation rates in camping have been declining slightly over the last half dozen or so years (16% in 2006 to 13% in 2012). Nationwide, population is expected to continue growing over today's population, estimated by the United States Census Bureau to be just under 320 million. The Census Bureau projects the nation to grow to approximately 420 million by 2060, or by another 100 million residents. So, while participation rates may remain constant, the numbers of participants in camping and other District activities offered by the District is anticipated to increase.

District Visitation and Recreation Preferences

District Visitation

According to a District 2013 Community Survey conducted by Strategic Research Institute, there are approximately 25 million annual park visitors to the District's parks. Robert Sibley Regional Wilderness Preserve had approximately 478,750 visitors in 2017.

Community Recreation Preference Surveys

A District 2010-2011 Community Survey found that community members (96 %) believed that the regional park system, consisting of recreational parks, picnic areas, wilderness areas and trails, is a valuable public resource and makes the East Bay a more desirable place to reside with the most frequent activities relating to trail use (e.g., walking, hiking and biking) ranking highest.

Overall these surveys indicate that the East Bay Regional Park District constituents (Alameda and Contra Costa County adult residents):

- Highly value the regional park system
- Participate in a regular routine of exercise (84%) consisting of one or more of the following forms of exercise:
  - Walking (58%)
  - Hiking (24%)
  - Biking (23%)
  - Jogging/running (16%)
- Frequently travel up to five miles (65%) by personal vehicle to use regional parks/trails (41%) for these purposes.

District Hiking Programs

Healthy Parks, Healthy People Bay Area

The District is part of the "Healthy Parks, Healthy People Bay Area" coalition. As part of this program, the District conducts bi-monthly Multicultural Wellness Walks. Over 2,500 people have participated in this program in the past four years. These Wellness Walks are sponsored by Kaiser Permanente ~~and the District's Regional Parks Foundation~~. Through the Healthy Parks, Healthy People Bay Area coalition, the District has conducted monthly walks for the general public, as well as Park Rx outings every first Saturday with the University of California, San Francisco Benioff Children's Hospital in Oakland. Approximately 450 people per year have participated in this program.

Kids Healthy Outdoors Challenge

The District works with third grade teachers and their students to implement the Kids Healthy Outdoors Challenge (KHOC) to connect the students to the outdoors and recreational opportunities, promote health and well-being, physical activity, and life-long parks use. During the 2016-2017 school year, approximately 2,500 students completed in-class KHOC activities, and approximately 4,400 students, teachers, and chaperones visited the District's regional parks for field trips. Fifteen East Bay school districts were represented.

Trails Challenge

The Regional Parks Foundation helps fund the District's annual "Trails Challenge" program which highlights different trail routes throughout the District. For the past 25 years, an estimated 10,000 people per year have participated in this self-paced hiking program, which has included hikes within Robert Sibley Volcanic Regional Preserve.

Camping Preferences and Experiences

Camping Program Update 2014 Internet Survey

As part of the *2014 Camping Program Update*, a District internet survey instrument of twelve questions was designed, and with District staff assistance, was advertised through the District's website, direct invitation using contact lists generated during the focus group recruitment process, and through a mass e-mailing to people who have used the Reserve America website between 2000-2004 to reserve District campsites, including family, group and backpacking sites. There were 363 respondents, 83 percent of whom were residents of the District. About half of the respondents were in the 41-60-year-old age bracket, although younger and older respondents were represented as well.

Overall these surveys indicate that the District constituents (Alameda and Contra Costa County adult residents):

- Are experienced campers (93%)
- Have direct experience using District camping facilities (64%) with over 200 filling in names of facilities they have used (up to five each)
- Tend to camp more than one night on each trip (84%)

- "Tent camping" is practiced by the largest share of respondents (71%)
- Followed by "Backpacking" (37%)
- Prefer to camp:
  - "With a group of friends/relatives" (47%)
  - "Large organized group." Such as scout troops and others using group campsites (22%)
  - "Solo" (15%).

Five highest ranking reasons for choosing a campsite:

- Privacy, separation from neighboring camps 63.4%
- Hiking trails 60.9%
- Surrounding habitat and wildlife 55.3%
- Setting / views from camp 55.3%
- Proximity to drinking water 44.4%

Under other, the following were mentioned:

- Bicycle or bike-in camping (2%)
- Horse trailers with live-in quarters (A handful of people)
- Reported satisfaction with the reservation system (Majority – with third expressed no opinion and 19 [less than 7%] dissatisfied)

District-wide Camping Trends

The existing camping facilities in the District have been subject to increasing demand over the long run with the cities of Berkeley and Oakland the clear leaders in origin of group campers according to data from the District's Comprehensive Annual Financial Reports, which provides an overview of the long-term demand trend, measured in terms of the number of camping reservations made (*EBRPD, Comprehensive Annual Financial Report, FY 12/31/2012*).

Group Camps

Organized groups participating in outdoor overnight camping experiences tend to focus almost entirely on weekends, and in the East Bay there are few groups planning week-long stays. An examination of group camping fee policies in 2009-10 shows group demand clusters on weekends, with by far the highest demand night being Saturday during the seven-month prime season defined as April 1-October 31. Additionally, the size of most of the groups are in the 11-35 range, while most of the campsites have a capacity of 50 or 75.

Measured by the Saturday night occupancy statistic, over a dozen of the District's group campsites are above 80 percent occupied, with several at 97 percent (or 29 of the 30 prime season Saturdays in 2013). By this measure, many of the District's group sites are at capacity. Given the demand for group camping in the District, careful consideration should also be given to adding

new group camp sites in locations that can provide an appropriate natural setting for a reasonable cost (*Camping Program Update East Bay Regional Park District July 2014).*

Backpack Camps

The dynamics of demand for backpack camps are different from group camps. There are essentially no week-long stays in the same place, and while Saturday nights are still in the highest demand of all, there is a fair amount of demand on other nights of the week as well. While the average annual visitation over all nights and locations would only be ten percent, the more popular sites are occupied 50, 60 and even over 70 percent of the Saturday nights. These overnight facilities help create the opportunity for multi-day hiking/backpacking experiences close to home in the East Bay. Although not quite as utilized as group camps on weekends during the prime season (April through October), they are still popular and heavily used. Where through trails create opportunities for multi-day hiking, development of additional backpacking sites in strategic locations along the regional trail system also appears appropriate from current use patterns (*Camping Program Update East Bay Regional Park District July 2014).*

Sibley Backpack Camp Visitation Rates

The Sibley Preserve backpack camp was opened in 2013. Reservations at Sibley Backpack site for the last three years (as of December 4, 2017) are shown in *Table 3.15-4, Sibley Backpack Camp Visitation Rates*. As can be seen from this table, usage has steadily increased since the campsite was opened. Site capacity is 15. The campsite is located approximately 0.2 miles from the Sibley Main Staging Area. As such, it can function as a walk-in site, as well as a stop-over site on a trek through the East Bay Hills. Use is by reservation.

TABLE 3.15-4
SIBLEY BACKPACK CAMP VISITATION RATES[1]

Year	In-State		Out-of-State		Total Reservations	Total Visitors
	# of Reservations	# of Visitors	# of Reservations	# of Visitors		
2015	54	208	0	0	54	208
2016	74	277	1	1	75	278
2017	77	335	2	9	79	344

[1] - The number of visitors is self-reported, and unverified.

Creating Recreation Value in the Camping Experience

According to the findings of the *Camping Program Update East Bay Regional Park District [July 2014]* a group campsite that can serve multiple purposes may add value in multiple ways. These may include: 1) traditional group camp experiences provided by groups such as Boy Scouts; and 2) leadership training in partnerships with community organizations and schools through a camping experience for youth who traditionally have not visited a park. Moreover, adding program content to the camping experience may add value to participants that may be supported by philanthropic funding.

Interpretive Program Participation

The District's Interpretive and Recreation Services Department offers programs directed at both the general public and school groups. For the area encompassing the East Bay Hills, including Leona Canyon, Redwood, and Sibley, Interpretive and Recreation Services offered 39 programs to the general public, nine school programs, and five programs to special groups such as the YMCA and a brownie troop serving approximately 1,895 visitors in 2016. The average size of these group programs was 34 visitors per event.

Project Area Recreation Facilities and Programs

The Project area serves as a recreational, educational, and cultural venue for area residents in the two-county area serviced by the District, including the residents of the nearby communities of Oakland, Orinda, Moraga and Canyon.

Preserve Sub-area

Recreation Facilities

The Preserve Sub-area lies in the East Bay Hills and includes staging areas, an interpretive pavilion, public restrooms, a backpack campsite.

Education Use Area

The *Robert Sibley Volcanic Regional Preserve Education Use Area* was established in 1985 and includes "the entire area eastward from, and including Skyline Boulevard." This area is designated for education/research/study, excepting the staging area, adjacent buildings and trailhead. This designation was made to provide for the preservation of, and education opportunities related to, the interesting and unique natural features in Sibley Volcanic Regional Preserve associated with earlier volcanic activity including volcanic debris flows, lava flows, and a dike. Abandoned quarry operations provide an additional educational element. This *Education Use Area* designation is to be applied to any additional areas acquired northward and eastward of the Preserve boundary (*LUDP pg. 40, 1985*).

Trails for Walking, Jogging, Bicycling and Equestrian Use

The Preserve trail system offers approximately 8.8 miles of trails for hiking, dog walking, and equestrian use. The trail system includes a one-lane, paved, service road that extends from the parking area to the summit of Round Top that is also used as a hiking trail and a 1.5-mile self-guided tour of the Round Top Volcanoes. Bicycle use is limited to the Skyline National Trail section between the Old Tunnel Road Staging Area and the Overlook Trail, approximately 0.9 miles.

Western Hills Sub-area

Recreation Facilities

The Western Hills sub-area provides a connection between the Preserve Sub-area and McCosker Sub-area and will contain a staging area with a public restroom when transferred to the District.

Trails for Walking, Jogging, Bicycling and Equestrian Use

Approximately three miles of trails are included in the Long Term Management Plan for the Western Hills Open Space. Approximately 2.7 miles of these trails are designated ranch roads and about 0.4 miles of narrow trails. All the trails are designated as multi-use accommodating hikers, bicyclists, dog walkers (with dogs on leash), and equestrians. Access from Wilder City Park to the Western Hills Open Space will be defined with wayfinding signs along neighborhood pathways and streets. A second access route will be provided at the Red-tailed Hawk Staging Area located at the southern terminus of Wilder Road (*Wilder 2018 Circulation Plan*).

McCosker Sub-area

Recreation Facilities

The McCosker Sub-area is located within Contra Costa County adjacent to Huckleberry Preserve and in proximity to the unincorporated community of Canyon. This sub-area includes a staging area with a chemical toilet.

Trails for Walking, Jogging, Bicycling and Equestrian Use

An approximately two-mile long loop trail within the McCosker sub-area is open to the public. This trail route is overlain on an existing ranch road. Trail activities include hiking, bicycling, and equestrian use. Dogs are not permitted.

Regional Trails and District Campsites in the East Bay Hills

The 31-mile East Bay Skyline National Recreation Trail, also known as the "Skyline Trail", and more recently overlain with segments of the Bay Area Ridge Trail (Ridge Trail) and the Juan Bautista de Anza Trail (Anza Trail) runs through Robert Sibley Volcanic Regional Preserve with connections to Huckleberry, Redwood and Anthony Chabot regional parklands to the south and Tilden Regional Park and the Alvarado Historic District within Wildcat Canyon Regional Park to the north. This interconnected system of trails through the East Bay Hills offers opportunities for multi-day trail treks with the McCosker Sub-area recreation site filling a missing link in the system. Trail camps that could provide an approximately 22-mile, multi-day trekking experience along the East Bay Hills with linkages to existing and proposed sites and trails in the Project area include: Chabot Regional Park, Redwood Regional Park, and Tilden Regional Park. Refer to *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites* for the location of campsites in the East Bay Hills in proximity to the Skyline National ~~Historic~~ Recreation Trail, which runs through the Project area.

3.15.3 Research Methodologies

This impact analysis focuses on potential effects of the Project on recreation resources. The evaluation considers current conditions in the Project area, review of general plan policies, District plans, policies, and programs, site reconnaissance, applicable regulations and guidelines, recreation facility and program data from national and local surveys that were conducted to assess current demands and use trends, and Project construction and operation activities.

3.15.4 Significance Thresholds

CEQA Significance Criteria

Based on the CEQA Guidelines Appendix G Section XV, a project would cause adverse impacts related to recreation if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Criteria and Thresholds with No Impact or Not Applicable

Because of the nature of the Project and its physical setting, the Project would not result in impacts related to the following significance criteria; these criteria are not discussed in the impact analysis for the reasons discussed below.

a) Increase use of parks or other recreational facilities. Recreation use can be anticipated to increase within Robert Sibley Volcanic Regional Preserve because of: 1) added adjacency to new neighborhoods, and 2) anticipated population growth in the region. This added use would be accommodated in several ways. The Project would include access from: 1) Wilder Park managed by the City of Orinda, which has parking for 273 spaces, where ten of these spaces will be dedicated to serve as a trailhead for access to Sibley Preserve; and 2) the Red-tailed Hawk Staging Area at the southern terminus of Wilder Road, which will accommodate 19 vehicles and two horse trailers. These provisions were addressed in the *City of Orinda October 9, 2005 Master Project Amendment – Second Supplemental EIR Chapter 3 Description of Project Changes, Resolution 13-05* and the *Wilder 2018 Circulation Plan*.

Additionally, the anticipated increase in recreational use would be accommodated through the increase in parkland area and expanded trail system. Considering the 639 additional acres that will be added to Robert Sibley Regional Preserve, overall trail mileage would increase from 13.9 miles to 22.1 miles, while overall trail density as measured by miles per acre would decrease by approximately 0.4 percent, thereby retaining opportunities for experiencing the natural environment in this urban interface area.

Moreover, the District has planned for the management of added parkland area and increase in facility development by: 1) funding a 9-month ranger when the McCosker property was being prepared to be opened to the public; and would in accordance with the District staffing "pipeline" add an additional 9-month ranger position to serve the Project area once the McCosker sub-area public access and recreation improvements are built and operational, thereby maintaining the standard of care currently provided for Sibley Preserve.

As access to the Western Hills Open Space was considered by the city of Orinda and the District, and additional staffing would be provided to facilitate the maintenance of the additional facilities and accommodate an anticipated increase in visitor use as part of the Project, this criterion is not discussed further in this EIR.

3.15.5 Impact Analysis

b) Impact REC-1: The Project would include recreational facilities that would require the construction and expansion of recreational facilities that would change the physical the environment (Less than Significant with Mitigation).

Preserve Sub-area

The Project would include modifications to the existing Sibley Main Staging Area expanding the existing parking capacity from 38 spaces to approximately 73 spaces and would include electric vehicle recharging units and bike racks. Parking improvements would involve reconfiguration of the existing, approximately 29,184-square foot parking area. The remaining approximately 11,031-square foot new parking area would be in a vegetated, although previously disturbed site. Refer to *Figure 2-9, Proposed Parking Lot Layout for Sibley Main Staging Area* for the conceptual parking layout. In addition, a 1,000-gallon, prefabricated water tank would be installed at the Sibley backpack camp for visitor use. The tank would be filled on an as-needed basis from a District water truck.

Improvements to the Old Tunnel Road site would involve repairing, repaving and restriping the existing site to improve the existing road conditions and increase parking capacity from 13 to approximately 33 vehicles and include: new gates, vehicle turn-arounds, electric recharging units, and installation of a vault toilet replacing the existing chemical unit. Installation of the vault toilet would require grading and some vegetation removal (approximately 1,350 square feet). Refer to *Figure 2-10, Proposed Parking Lot Layout for Old Tunnel Road* for the conceptual parking layout.

McCosker Sub-area

In the McCosker sub-area, minor grading would add up to five parking spaces and direct drainage to a stormwater treatment feature. The primary access road, Ninebark Trail, would include widening near the entry, installation of a new vehicle bridge, and new construction to provide access to the Fiddleneck Field parking area for visitor and emergency vehicle and maintenance vehicles.

In addition to the Ninebark Bridge, two other light-weight vehicle bridges would be installed across Alder Creek; a maintenance vehicle bridge that would provide access to the Fern View Terrace picnic site, and a maintenance vehicle bridge that would provide a connection to the Alder Creek Nature Trail and Gudde Ridge Trail from the Meadow Barley Trail. The three structures would be designed as arched bridges with natural creek bottoms.

Meadow Barley Trail road section improvements would include: reconstructing a 957-linear foot segment of 14-foot wide all-weather gravel road to include accommodations for parallel parking for future staff using the residence along this road, stabilizing and repaving an existing 300-linear-foot roadway section, and developing a hammer-head turn-around near the residence to facilitate emergency and maintenance vehicle circulation. Standard District pipe gates with adjoining, self-closing pass-through gates would be installed to control public vehicle access, while accommodating District vehicles and recreational trail uses.

Recreation facility development in the McCosker sub-area would encompass: development of the Fiddleneck Field recreation area, and Fern View Terrace picnic site and trails along the restored creek channels. These recreation elements would be constructed in previously developed sites.

Fiddleneck Field would be designed to accommodate rustic camping and interpretive programs, including a group gathering area with a shade structure, a group barbecue, preparation table, and campfire. Americans with Disabilities Act (ADA) compliant facilities would include parking, toilets, picnic, and campsite amenities. ADA compliant trails would provide connections between the Eastport Staging Area and developed areas in the Fiddleneck Field recreation area and the Alder Creek Nature Trail. The proposed parking and activity areas would be designed to serve 30 to 50 people with most of the groups anticipated to be in the 11-35 range based on District usage data.

Recreation development at the Fern View Terrace would be limited to minor grading of an existing terraced area to provide level pads to support picnic tables for individual visitor use and for use during interpretive programs. Existing concrete walls remaining from the construction and quarrying business that formerly operated in this sub-area would be retained and incorporated into the design of interpretive exhibits focused on prior uses of the site.

The trail system within the developed the McCosker Recreation/Staging Unit would include three ADA compliant trails; the 0.3-mile, Alder Creek Nature Trail, the 0.06-mile, Kitchen Orchard Trail, and 0.2 mile- Leatherwood Creek Trail. Access from these trails would be provided to the restored Alder and Leatherwood Creeks for passive recreational activities such as interpretive programs and/or self-guided walks. Contact with the creek would be controlled through design features that would include: bridges, observation areas, and fencing.

Project Area-wide - Trails

The Project would include single use and multi-use trails. Project actions would include: minor changes in use; 2) opening existing narrow and ranch road trails; 3) constructing new narrow trails to enhance connectivity between the Preserve, Western Hills and McCosker sub-areas and other District parklands; 4) reconstructing ranch roads to complete connections in the McCosker sub-area; 5) realigning and closing and restoring over steep narrow trail to improve trail sustainability for a total of 22.1 miles.

Trail system improvements balance environmental conservation with recreation opportunities and operational needs. This trail system takes into consideration total numbers of constituents likely to be served, not solely small group or single user benefit values and considers additional access points and connectivity to neighboring communities and city and county trail and bikeway systems to disperse use and encourage bike and pedestrian access over vehicle access as visitor use increases. Additionally, to minimize adverse impacts on wildlife and plant species, dogs would be required to be on leash throughout the Project area, except where off-leash dog use is already permitted in the Preserve sub-area, and bike use would only be added where previously permitted in the Western Hills sub-area and where system connectivity will be enhanced. Bikes would not be allowed in Special Protection Areas except on designated trails. Adoption of the Project would also require modification of Ordinance 38 to accommodate bikes on the following

trails sections of the Blue-eyed Trail, Fiddleneck Field Access, Leatherwood Creek Trail and sections of the Meadow Barley Trail, (Ordinance 38, Sections 409.8, 601, 801.2) and recension of Resolution 2016-12-318, which currently prohibits dogs in the McCosker sub-area.

Incorporating existing ranch road trails into the system where these alignments would reduce the need for new trail construction to complete gaps would serve to minimize resource habitat disturbance and soil displacement associated with new construction. Additionally, existing ranch road trails would also function as emergency access, fire prevention management, access for fuels and habitat management, including grazing activities, and other activities, such as the management of the PG&E transmission lines.

New narrow, natural surface, recreation trails would be located to minimize grades to control speeds and limit sediment transport and to minimize impacts on sensitive species. In addition, where multi-use narrow trails are proposed, alignments would be positioned to ensure good site lines. The trails would be constructed using a combination of small, mechanized equipment and hand tools.

New trails in the developed Recreation/Staging Unit would largely be constructed as part of the development of the creek restoration activities and the Fiddleneck Field recreation area. Likewise, revegetation adjacent with these trails would occur concurrent with other plantings.

New trails in the upland areas proposed through woodland or riparian habitat would be aligned such that they would not require tree removal or substantial pruning. Some brushing of shrubland habitat and disruption of grassland habitat would be involved in the trail construction work. Disturbance to understory vegetation along the proposed, new, narrow trail alignments would be limited to an approximately eight-foot wide area covering approximately 11,911 linear feet (2.2 acres) in the undeveloped, upland areas. Within the area of large groupings of eucalyptus, there are a significant number of downed trees that would be affected. In this location, downed or smaller diameter standing trees in the trail alignment would be cut to accommodate a six-foot wide by ten-foot tall trail corridor. Vegetated areas disturbed during the development of the trail system would be reestablished, as appropriate, by either: 1) scarifying, seeding, and mulching using certified weed-free products; 2) planting native vegetation, transplanted from the vicinity, or seeded with native species found in the area; or 3) applying strippings accumulated from grading activities over areas temporarily disturbed by construction activities to encourage recovery of the natural habitat.

Where new trail construction is proposed, per *Objective 3 - Trail Development*, potential impact areas for sensitive natural communities and special status plant species within each of these habitat types would be mapped over the annual seasonal cycle and the trail alignments would be finessed to minimize impacts within the zones previously surveyed and cleared for low cultural sensitivity prior to construction.

Refer to *Table 2-4A, Table 2-4B, Table 2-4C, and Table 2-4D* for a summary of the trails including their proposed use and length by sub-area. Refer to *Figure 2-12, Existing and Proposed Trail Types* for location of narrow trails and ranch-road-width trails within the Project area. Refer to *Figure 2-14, Proposed Trail Use Types* for a map illustrating trail use recommendations within

the Project area and *Figure 2-13, Typical Trail Cross Section* for an illustrative concept of a typical narrow trail.

Over the long term, Project recreation facility improvements would augment existing facilities at Robert Sibley Volcanic Regional Preserve to meet current and projected demand benefiting the visitor experience consistent with the District Master Plan mission, and polices and recommendations set forth in the *2014 Camping Program Update*.

In the short-term, development of these recreation facilities could have an adverse impact on existing site conditions. Impacts, regulations and the District's Standard Best Management Practices, and mitigations associated with the land alterations resulting from the proposed construction of these recreation facilities and trails are discussed in *Section 3.1, Aesthetics*; *Section 3.6, Geology* and *Soils*; and *Section 3.9, Hydrology and Water Quality*. Impacts and mitigations associated with temporary closures of existing recreation facilities during the construction of these recreation facilities are discussed in *Section 3.14, Public Services.*

Mitigations:

Implement *Section 3.1 Aesthetics* Mitigation Measures: Mitigation Measure AES-3-1: Recreation/Staging Area Units - Grading Plans, Mitigation Measure AES-3-2: McCosker Sub-area - Site Structure Design, and Mitigation Measure AES-3-3: McCosker Sub-area - Construction Staging

Implement *Section 3.6 Geology and Soils* - Project-wide - Regulations and District Best Management Practices.

Implement *Section 3.8 Hazardous and Hazardous Materials* Mitigation Measures: HAZ-1a: McCosker-Sub-area - Soil Contaminants, HAZ-1b: Project-wide - Health and Safety Plan, and HAZ-1c: Project-wide - Utility Avoidance.

Implement *Section 3.9 Hydrology and Water Quality* - Project-wide - Regulations and District Best Management Practices.

Implement *Section 3.14, Public Services* Mitigation Measure: PUB-1-1: Project-wide - Noticing and Outreach Plan.

Significance after Mitigation: *Less than significant*.

3.15.6 Cumulative Effects

Geographic Extent/Context

Access into Robert Sibley Volcanic Regional Preserve would be expanded through prior actions for the Western Hills Sub-area resulting in a better distribution of access to Sibley Regional Preserve for park visitors from the surrounding communities. Better connectivity would also be provided via an expanded trail system that would offer connections between parklands and neighborhoods. The added public access points and expansion of the trail system and camping opportunities would benefit the objectives of regional trail networks and add to recreation services in the geographic area.

Past, Present, and Reasonably Foreseeable Projects

Acquisitions beginning in 1936 and continuing in 2010 with the donation of the McCosker parcel and the anticipated transfer of the Western Hills Open Space have served to expand the Robert Sibley Volcanic Regional Preserve northeast towards the City of Orinda and south into the unincorporated area of Canyon adding to the public recreation services available to the East Bay, Lafayette, Moraga, Orinda (Lamorinda) and Canyon communities consistent with District park objectives.

In the Project vicinity, there are several public serving recreation projects proposed or in progress that would beneficially contribute to the overall recreation opportunities within and adjacent to the Project area. These include City of Orinda park facilities that would be managed by the City of Orinda.

The Project would augment existing District and City of Orinda recreation facilities and programs, likely resulting in increased recreation use. Expanded recreation development proposed by the Project would serve to accommodate new demands on recreation resources. An expanded interpretive program area that could offer a variety of outdoor education programs with universal access directed at serving families, seniors and persons with disabilities would provide new opportunities to serve the community providing an overall benefit to residents of the two-county area served by the District. Additional staffing anticipated with the completion of the Project improvements would enable the District to maintain the current standard of care for Robert Sibley Volcanic Regional Preserve. Therefore, cumulative impacts related to providing additional recreation facilities services in the Project area are anticipated to be *less than significant*.

3.15.7 References

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3.16 Transportation and Traffic

This section describes the existing transportation, circulation and parking conditions in the vicinity of the Project area and addresses the potential impacts of the Project in terms of intersection level of service. The Project's potential effects on safety, parking, pedestrian, and bicycle facilities in the Project area are also evaluated.

3.16.1 Regulatory Framework

The following is a summary of State, regional, County, and City regulations that apply to transportation and circulation within the Project area.

State

California Department of Transportation

The California Department of Transportation's (Caltrans') responsibilities include the planning, design, construction, and maintenance of interstate freeways and State highways. Caltrans' Guide for the Preparation of Traffic Impact Studies (December, 2002) identifies the information that Caltrans requires in evaluating the effect of local development and land use changes on State highway facilities. There are no Project area roadways that fall under Caltrans jurisdiction.

Senate Bill 743

Senate Bill (SB) 743 (Steinberg 2013) was approved by Governor Brown on September 27, 2013. As a part of the legislation to approve the Sacramento King's Arena, SB 743 created a path to revise the definition of transportation impacts according to CEQA. Currently, CEQA transportation impacts are determined using "levels of service" (LOS) of roadways and intersections, which is a measure of congestion. The three objectives of SB 743 related to development are to diversify land uses, encourage infill development, and focus on creating a multimodal environment.

As a result of SB 743, the Governor's Office of Planning and Research (OPR) released discussion drafts and technical guidelines in August 2014,[1] July 2015,[2] and January 2016[3] that suggested VMT as the new metric for transportation impacts. Instead of congestion, this metric aims to reduce greenhouse gas (GHG) by limiting the amount of miles people travel in a vehicle.

On November 27, 2017, the OPR released the proposed updates to the CEQA Guidelines and the *Technical Advisory on Evaluating Transportation Impacts in CEQA* that has been transmitted to the California Natural Resources Agency for review and to undergo the formal rulemaking

1 Governor's Office of Planning and Research. 2014. *Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing Senate Bill 743.* August.

2 Governor's Office of Planning and Research. 2015. *Technical Advisory on Evaluating Vehicle Miles Traveled in CEQA.* July.

3 Governor's Office of Planning and Research. 2016. *Revised Proposal on Updates to the CEQA Guidelines Evaluating Transportation Impacts in CEQA.* January.

process. On January 26, 2018, the Natural Resources Agency distributed proposed updates to the CEQA Guidelines. The public comment period ended on March 15, 2018.

The draft SB 743 guidelines provide direction for VMT thresholds for select land use types: residential, office and retail. The current recommendations do not identify other uses, such as parks and passive open space. Because the Project is a park and passive open space use that is unlike SB 743 land uses such as residential, office, and retail, an SB743 compliant VMT analysis will not be conducted at this time.

The current schedule would indicate Administrative Law rulemaking completed by the fourth quarter of 2018. The OPR currently states that agencies may opt in after this time, and that all agencies must adopt the SB 743 VMT CEQA approach by 2020. Therefore, the District is not required to conduct a VMT CEQA analysis for the Project at this time.

Local Ordinances and Policies

Metropolitan Transportation Commission

The Metropolitan Transportation Commission. (MTC) is the transportation planning, coordinating, and financing agency for the San Francisco Bay Area. The MTC functions as both the State-mandated regional transportation planning agency and the federally-mandated metropolitan planning organization (MPO) for the region. As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of transportation facilities within the region. The Commission also screens requests from local agencies for State and federal grants for transportation projects to determine their compatibility with the Plan.

Contra Costa Transportation Authority

The Contra Costa Transportation Authority (CCTA) is the designated Congestion Management Agency (CMA) for Contra Costa County which encompasses the majority of the preserve's land area. CCTA manages Contra Costa County's blueprint to reduce congestion and improve air quality. In this role, the CMA makes decisions on what local projects can utilize federal and State funding. The CMA prepares, adopts and updates the County's Congestion Management Program (CMP) and the Countywide Transportation Plan, last updated in December 2017 and September 2017, respectively. There are no intersections or roadways monitored by the CMP in the study area. According to the CCTA's Technical Procedures document, additional analysis is required when a project adds more than 100 peak hour trips to a roadway. Project related traffic is not anticipated to meet this 100-peak hour trip threshold and therefore a CMA compliant analysis is not warranted and will not be conducted at this time.

City of Orinda

The City of Orinda's General Plan was adopted in May 1987. The General Plan provides a blueprint for future growth and development within the City. The Growth Management Element identifies State Route 24 as Orinda's single Route of Regional Significance. The General Plan identifies an acceptable standard of LOS C for intersection performance levels.

As most of the Project related improvements are within unincorporated Contra Costa County and Red-tailed Hawk Staging Area and access from Wilder City Park have been pre-approved by the City of Orinda and incorporated as part of the Wilder residential development, City and CCTA guidelines have been applied in this transportation and traffic analysis.

East Bay Regional Park District

2013 District Master Plan

The 2013 District Master Plan defines the long-term vision for lands managed by the District and incorporates the District Master Plan, which identifies existing and proposed parklands and trails, including regional trails that often offer, transportation, as well as recreation benefits.

District Master Plan Policies

Table 3.16-1, Transportation and Traffic Goals and Policies identifies Master Plan policies that relate to transportation and circulation.

TABLE 3.16-1
2013 DISTRICT MASTER PLAN TRANSPORTATION AND TRAFFIC GOALS AND POLICIES

Goals and Policies	Project Consistency
PA4: The District will provide access to parklands and trails to suit the level of expected use. Where feasible, the District will provide alternatives to parking on or use of neighborhood streets. The District will continue to advocate and support service to the regional park system by public transit.	Consistent with Policy PA4, the Project would anticipate an increase in recreational use from added adjacency to new neighborhoods, and anticipated population growth in the region through the increase in parkland area, added access points and an expanded trail.
PA5: The District will cooperate with local and regional planning efforts to create more walkable and bikeable communities, and coordinate park access opportunities with local trails and bike paths developed by other agencies to promote green transportation access to the Regional Parks and Trails.	Consistent with Policy PA5, the Project considers, transit opportunities, access points and trails and bike paths developed by other agencies to promote green transportation access to the Project area.
PA6: The District will comply with the requirements of the Americans with Disabilities Act and use the current edition of the California State Parks Accessibility Guidelines as its standard for making the improvements necessary to create accessible circulation, programs, and facilities throughout the Park District.	Consistent with Policy PA6, the Project would comply with the requirements of the Americans with Disabilities Act and use the current edition of the California State Parks Accessibility Guidelines in the developed Recreation/Staging Units including expanded parking areas, the Fiddleneck Field recreation area and the Alder Creek Nature Trail.
PA7: The District will evaluate and monitor the compliance level of access routes from public transit stops into the parks and encourage local agencies to make the improvements necessary to provide compliant accessibility to the parks.	Consistent with Policy PA7, the Project evaluates access routes from public transit stops into the Project Area.
RFA2: The District will provide a diverse system of non-motorized trails to accommodate a variety of recreational users including hikers, joggers, people with dogs, bicyclists, and equestrians. Both wide and narrow trails will be designed and designated to accommodate either single or multiple users based on location, recreational intensity, environmental, and safety considerations. The District will focus on appropriate trail planning and design, signage, and trail user education to promote safety and minimize conflicts between users.	Consistent with Policy RFA2, the Project would provide a diverse system of non-motorized trails to accommodate a variety of recreational users through the implementation of Project Objective 3: Trail Development which states: "*Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda.*" One of the supporting strategies for Objective 3 states: "*Provide connectivity via a multi-use trail system (e.g., hike, bike, equestrian, dog walking) including narrow, natural surface trails, that provide access from the McCosker site to Western Hills Open Space Staging Area, Orinda bike routes, existing Sibley Round Top Trail, and Huckleberry Preserve, while recognizing that not all uses may be appropriate for all trails.*"

Goals and Policies	Project Consistency
RFA3: The District will continue to add narrow trails designated as both single- and multi-use for hikers, equestrians, dog walkers, and bike riders throughout the system of regional parklands.	Consistent with Policy RFA3, the Project would add narrow trails designated as both single-and multi-use for hikers, equestrians, people with dogs, and bike riders. through the implementation of Project Objective 3.
RFA4: The District will expand its unpaved multi-use trail system as additional acreage and new parks are added. The District will continue to provide multi-use trails to link parks and to provide access to park visitor destinations.	Consistent with Policy RFA4, the Project would add 3.9 miles of unpaved multi-use trails to the Robert Sibley Volcanic Regional Preserve. Multi-use trails linking parks and park visitor destinations would be accomplished through implementation of an Objective 4 Recreation Facility and Interpretive Elements strategy that states: "*Provide backpack camp opportunities within the developed recreation area to encourage multi-day trail treks along the interconnected system of trails through the East Bay Hills, including the Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail and add to the Skyline/Bay area Ridge Trail/Anza national Historic Trail system functions through development of a multi-day trek and camping opportunity in the East Bay Hills."*
RFA5: The District will continue to plan for and expand the system of paved, multi-use regional trails connecting parklands and major population centers.	Consistent with Policy RFA5, the Project takes into consideration links to regional paved and unpaved trails and bikeways designated on the District Master Plan Map and other agencies to promote connections between parklands and to neighboring communities.

Ordinance 38

Portions of EBRPD Ordinance 38 address the protection of traffic and parking. This section is briefly summarized *Table 3.6-2, Relevant Ordinance 38 Sections* below.

TABLE 3.16-2
RELEVANT ORDINANCE 38 SECTIONS

Section 901.1 This sections states that, "No person shall park a motor vehicle, except an authorized emergency vehicle or when in compliance with the directions of a peace officer, in any of the following places: in areas where prohibited by "No Parking" signs, on any fire trail, on any equestrian or hiking trail, d) blocking or obstructing any gate, entrance, or exit, in any picnic area, in any area where such vehicle blocks or obstructs the free flow of traffic, within 15 feet of a fire hydrant, adjacent to any curb painted red, any parkland after curfew except pursuant to a valid parking permit, in a parking lot where a fee is charged and the fee is not paid, in violation of posted parking restrictions or devices, or outside a marked parking space while in a paved parking lot."
Section 901.3 This section states that, "Certain parking stalls or spaces at District facilities shall be designated for the exclusive use of disabled persons' vehicles…"
Section 902.1 This section states that, "no motor vehicle may be operated within District Parklands except on established paved roads which are open to the public, except authorized emergency vehicles and "other power-driven mobility devices" used in conformity with the District policy on use of other power-driven mobility devices."
Section 903 This section states that, "No person shall drive a vehicle within the District at a speed greater than is reasonable or prudent, having due regard for traffic on, and the surface and width of, the road, and in no event at a speed which endangers the safety of persons, property or wildlife, provided, however, that in no event shall a vehicle be driving at a speed greater than the posted speed limit for that area."
Section 904.1 This section states that, "No person shall permit a vehicle to be parked or left standing within the District for 72 or more consecutive hours except in camping areas pursuant to a valid parking permit."

3.16.2 Existing Conditions

The analysis of all modes of travel is based on vehicular, bicycle, and pedestrian data collected along Skyline Boulevard and Pinehurst Road near the study locations of the Sibley, Huckleberry,

and McCosker staging areas. Existing vehicular, bicycle, and pedestrian demand was assessed against the ability of existing roadway facilities to accommodate all users. As conflict points occur almost exclusively at roadway intersections, the following six study locations were selected:

1. McCosker Staging Area on Pinehurst Road
2. Sibley Staging Area on Skyline Road
3. Old Tunnel Road / Quarry Road
4. Wilder Road / Western Hills Red-tailed Hawk Staging Area
5. Wilder Road / Orinda Fields Lane
6. Huckleberry Botanic Regional Preserve Staging Area

As this analysis seeks to assess vehicular, bicyclist, and pedestrian access and safety, the data collection effort focused on the peak usage period of Skyline Boulevard and Pinehurst Road in the vicinity of the Project area. For the purposes of traffic engineering analysis, one hour serves as the measure of a peak usage period.

The peak usage period and subsequent peak hour was identified through on-site observations and coordination with EBRPD staff and empirical traffic data collection. District and LSA staff identified a peak usage period of Friday through Sunday, capturing the busiest recreational visitation days of the week. In order to identify the busiest peak hour within this time frame, three 24-hour road segment counts were collected along Skyline Boulevard and Pinehurst Road from Friday, June 2, 2017, to Sunday, June 4, 2017. The three-hour period with the highest number of automobiles counted was identified for a more detailed traffic count that was conducted on Saturday, June 10, 2017, between 12:30 p.m. and 3:30 p.m. The peak hour from this 3-hour period at each study location was used for analysis. For example, the Sibley Main staging area access point was busiest from 2:00 p.m. to 3:00 p.m. while the Wilcox staging area access point was busiest from 1:15 p.m. to 2:15 p.m. This method of analyzing the mid-day peak hour of each location, as opposed to a uniform peak hour, ensures that the unique traffic patterns of each study location are represented in the analysis. Traffic survey data has been included in *Appendix X, Transportation and Traffic Data.*

In addition to empirical analysis data, LSA staff visited the preserve on Wednesday, September 13, 2017, to confirm existing roadway conditions and staging area parking.

Access

The Project area can be accessed from SR-24 to the north and SR-13 to the west. Skyline Boulevard and Pinehurst Road can be accessed via several two-lane local roads that lead to both SR-24 and SR-13. Access to Western Hills can be achieved through Wilder Road, which is a two-lane residential street that serves as the main access road for the Wilder community within the City of Orinda. Moraga Way provides east-west connectivity to the northeast of the Project area but does not provide direct access to any of the sub-areas or Huckleberry Preserve. Canyon Road provides north-south connectivity to the southeast of the site, but similarly does not provide direct

access. Canyon Road leads to the east-west Pinehurst Road to the south, which can provide access to Huckleberry Preserve and the McCosker sub-area. Skyline Boulevard is an east-west two-lane local road to the west of Pinehurst Road on the southwest border of the Project area that provides access to the Preserve sub-area. *Table 3.16-3, Staging Area Summary* summarizes the existing and proposed staging areas. These staging areas are illustrated on *Figure 3.16-1, Vicinity Map and Transportation Facilities.*

TABLE 3.16-3
STAGING AREA SUMMARY

Staging Area	Existing Description	Proposed Changes
Preserve Sub-Area		
Sibley Main Staging Area	The Sibley Main Staging Area provides access to the Preserve sub-area via Skyline Boulevard along the ridge of the East Bay Hills. This staging area is located near 6701 Skyline Boulevard, Oakland, CA 94611. The Sibley Main Staging Area currently provides parking for 38 cars, 1 horse trailer, and is home to an interpretive pavilion, park residence, and public restrooms.	The Sibley Main Staging Area will be improved to provide 35 additional parking spaces on top of the existing 38 spaces for a total of 73 parking spaces. No changes are proposed to the roadway geometrics or intersection controls at the access point of the Staging Area.
Old Tunnel Road	The terminus of Old Tunnel Road acts as a secondary access to the western portion of the Preserve sub-area and provides 13 parking spaces and can be reached from the Fish Ranch Road exit off Highway 24. This staging area is also home to a park residence and staff office. Narrow and ranch road trails link the Old Tunnel Road and Sibley Main staging areas.	The terminus of Old Tunnel Road will be improved to provide 20 additional parking spaces on top of the existing 13 spaces for a total of 33 parking spaces. No changes are proposed to the roadway geometrics or intersection controls at the access point of the Staging Area.
McCosker Sub-Area		
Wilcox/Eastport Staging Area	This access point, currently known as the Wilcox Staging Area, is located approximately 1 mile north of Canyon Elementary School on Pinehurst Road and provides approximately 10 parking spaces in a gated, gravel lot. Service facilities include a park residence and an equipment storage shed.	This access point, currently known as the Wilcox Staging Area, will be renamed to the Eastport Staging Area and be improved to contain an additional 5 parking spaces for a total of 15 spaces. A secondary staging area is proposed to be developed within the McCosker Recreation/Staging Unit and is currently referred to as Fiddleneck Field. Fiddleneck Field will provide 43 parking spaces and serve a new reserved-use camping area and interpretive program area. This parking area would also provide access to the Project area trail system. Fiddleneck Field will be accessed via a 90-degree unsignalized "T" intersection on the existing two-lane gravel service road within the Wilcox/Eastport Staging Area. No changes are proposed to the existing roadway interface between the access point of the Staging Area and Pinehurst Road.
Huckleberry Botanic Regional Preserve Sub-Area		
Huckleberry Preserve Staging Area	The Huckleberry Preserve Staging Area is located approximately one-half mile south of the Sibley Main Staging Area near 7087 Skyline Boulevard, Oakland, CA 94611 and provides primary access to the Huckleberry Botanic Regional Preserve. The Huckleberry Preserve Staging Area serves as a secondary access to the Preserve sub-area via trails. The Huckleberry Preserve Staging Area currently provides parking for 12 cars and a public restroom.	No changes are proposed for the Huckleberry Preserve Staging Area.

Western Hills Sub-Area		
Wilder City Park	--	Wilder City Park, managed by the City of Orinda, provides access to the northern portion of the Western Hills sub-area. 10 parking spaces within the existing Wilder City Park parking lot will be designated for Project use. This access point would become available for public use when the Western Hills sub-area is conveyed to the District.
Western Hills Red Tail Hawk Staging Area	--	The Western Hills Red Tail Hawk Staging Area would be located at the southern terminus of Wilder Road in the City of Orinda. 19 passenger vehicle and 2 horse trailer parking spaces are proposed for this staging area. This access point would become available for public use when the Western Hills sub-area is conveyed to the District.

SOURCE: LSA (April 2018).

Vehicle Parking

The existing staging areas offer a total of 61 vehicle parking spaces plus one space for a two-horse trailer at Sibley Main. With the Project and the added staging areas, there will be a total of 193 vehicle parking space plus three spaces for two-horse trailers. *Table 3.16-4, Vehicle Parking Summary* below summarizes existing and proposed parking spaces for each vehicular access.

TABLE 3.16-4
VEHICLE PARKING SUMMARY

Staging Area	Existing Parking Spaces	Proposed Parking Spaces
Sibley Main	38 + 1 horse trailer	73 + 1 horse trailer
Old Tunnel	13	33
Wilcox (Eastport)	10	15
Fiddleneck Field	-	43
Wilder City Park	-	10
Western Hills	-	19 + 2 horse trailers
Total	**61 + 1 horse trailer**	**193 + 3 horse trailers**

SOURCE: East Bay Regional Park District. 2018. *Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment*. March.

It is acknowledged that a portion of the spaces in Fiddleneck Field will be reservation-only and intended for use by campers. In order to present the most conservative use of the proposed parking facilities, all spaces have been analyzed as general day use spaces that are open to the public, in line with the use of all existing parking spaces. Additionally, users of the horse trailer spaces will be considered to have the same travel behavior (time and duration of visits as well as trip origin) as users of general parking spaces for the purposes of this analysis.

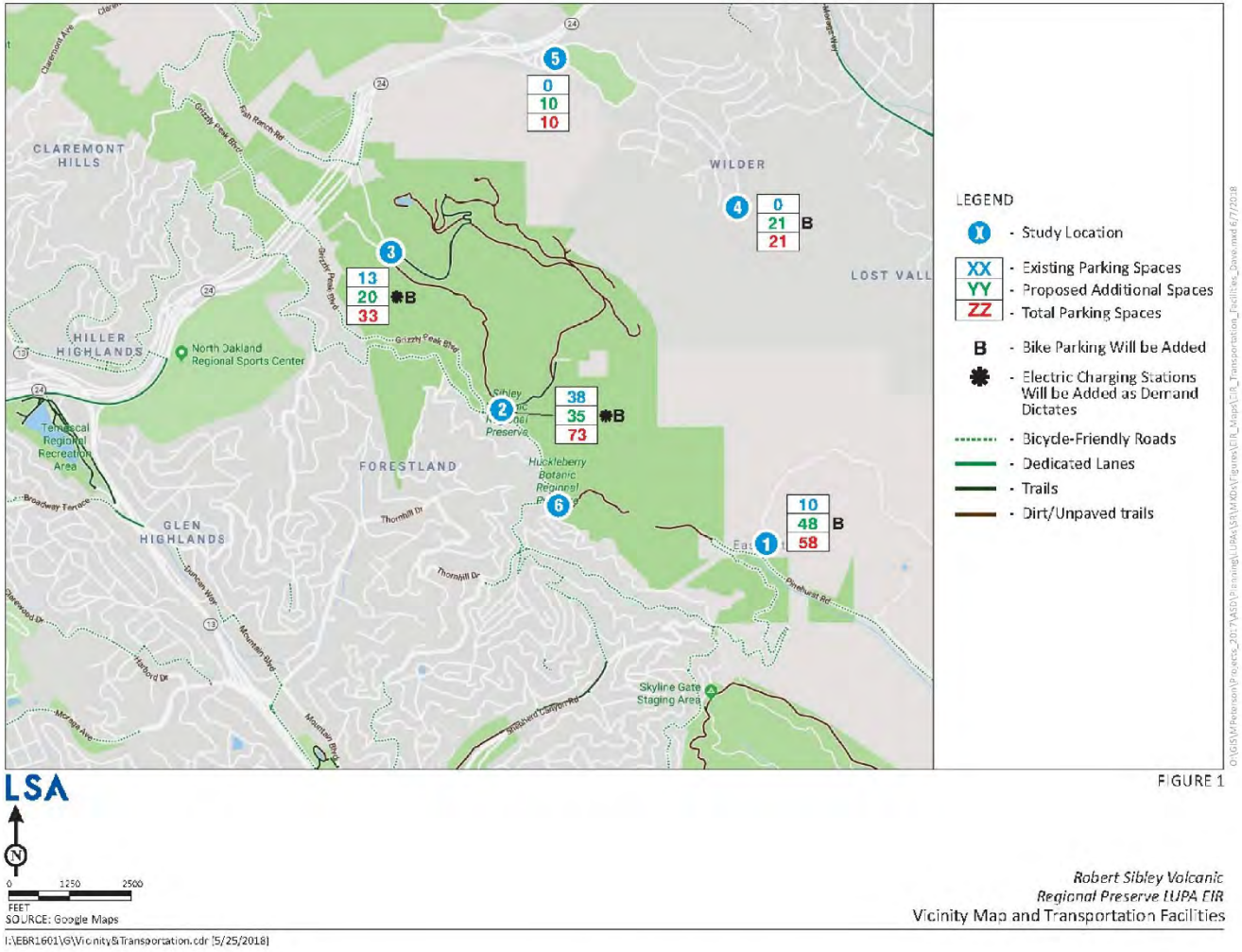

FIGURE 3.16-1 VICINITY MAP AND TRANSPORTATION FACILITIES

Transit

There is no direct transit service to the Project area. The closest bus route runs along Moraga Way with connections to the Wilder residential development at the Brookside trailhead. This bus line service is operated by the County Connection. The bus runs every 40 minutes during peak weekday periods and 120 minutes during off-peak weekday periods with service beginning at 6:00 a.m. and ending at 8:45 p.m. and 80 minutes on weekends beginning at 9:24 a.m. and ending at 6:09 p.m. The bus route begins at the Orinda BART Station and concludes at the Lafayette BART Station.

The closest BART station to the Project area is the Orinda BART Station located approximately two miles from Western Hills sub-area. From BART, bicyclists could travel south on the Orinda Loop Regional Trail via Moraga Way to Brookside Road and then continue west on trails and roadways in the Wilder sub-division to the Western Hills Open Space. There is no designated pedestrian travel route to the Project area from this BART station. The Orinda BART station is shown on *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites*.

For park users wanting to access the East Bay Hills for an extended or multi-day trek that could include the Project Area as shown on *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites*, this trek could begin with an AC Transit bus. AC Transit line 339 provides direct access from the Fruitvale BART station in the City of Oakland to the Chabot Space and Science Center and Roberts and Redwood Parks via Fruitvale Avenue, Lincoln Avenue, Joaquin Miller Road and Skyline Boulevard. Weekday access is quite limited, but weekend access commences at 9:00 A.M and continues until nearly 9:00 P.M. with runs every 30 minutes. AC Transit line 67 provides direct access to Tilden Regional Park from downtown Berkeley. Runs are approximately every 30 minutes from 6:00 A.M. to 8:00 P.M. Monday-Friday and 8:00 A.M. to 7:00 P.M. weekends. None of these bus connections is in close proximity to the Project area. Nor do either of these bus lines stop at any of the existing campsites shown in the figure.

Bicycle and Pedestrian Facilities

Approaching the Project area, Grizzly Peak Boulevard, Skyline Boulevard, Pinehurst Road, Canyon Road, and Moraga Way are all designated as bicycle routes according to their respective CMPs and Bicycle Master Plans. The Bay Area Ridge Trail traverses through the Preserve sub-area and connects trail users to regional recreational destinations. The shoulders of Pinehurst Road, Skyline Boulevard, Wilder Road, and Old Tunnel Road are unpaved and do not provide continuous pedestrian connectivity. Pedestrian users of the Project area, such as hikers and dog walkers, arrive primarily via passenger car as the roadway network that provides direct access to the Project area do not have sidewalks, shoulders, or dedicated bike lanes.

In spite of the lack of on-street bicycle facilities, Grizzly Peak Boulevard, Skyline Boulevard, Pinehurst Road, and Canyon Road, are popular routes for local road bicyclists. The location of these routes proximity to population centers and the presence of long segments with minimal interruptions in the way of traffic control or intersections contribute to the Project Area's regional appeal to cyclists.

Portions of these roads provide vehicular access to private residences; local uses such as post offices and an elementary school, and recreational facilities such as the Project area access points. The intersection of these access points and their adjacent roadways result in potential conflict points between cyclists and motorized vehicles. Although project improvements to the internal trail system will provide opportunities for internal, off-street pedestrian and bicycle connections between these existing on-street bicycle routes and potentially reduce potential conflicts between cars and pedestrians and cyclists, a safety assessment was conducted.

In order to assess what factors contribute to unsafe conditions and cyclist and pedestrian involved collisions, quantifiable safety indicators such as accident rates and vehicle speeds were analyzed.

Safety

Accident Assessment

LSA collected accident data for roadways surrounding the Project area from the Safe Transportation Research and Education Center's online Transportation Injury Mapping System (TIMS). A total of twenty-nine accidents were reported for the 5-year period from January 1, 2012, to December 31, 2016. This period represents the most recent 5-year period for which TIMS can provide a complete accident history. *Figure 3.16-2a, Accident Data* and *Figure 3.16-2b, Accident Data* show the location and type of each accident reported during this period. A detailed summary of each accident is provided in *Appendix H, Transportation and Traffic Data*.

As seen on these figures, there is one accident in the vicinity of the Huckleberry Preserve access driveway and one accident at the Wilder City Park access driveway. The accident near the Huckleberry Preserve access driveway occurred on April 23, 2012 during the day. Both the car and bicycle were proceeding in the same direction but the vehicle was traveling at an unsafe speed. The type of collision is not specifically identified, but it is noted that the bicyclist was injured as a result. The accident at the Wilder City Park access driveway occurred on December 14, 2013 during the night. The cause of the collision is cited as hazardous parking where one car was backing up and sideswiped another vehicle that was stopped behind them. Neither of these collisions could have been avoided with a geometric design feature of their respective access driveways that they were located in the vicinity of.

The other 27 accidents occurred along various sections of Pinehurst Road, Skyline Boulevard, Grizzly Peak Boulevard, Old Tunnel Road, and Wilder Road and are due to a range of causes, including improper turning movements, right of way infractions, unsafe speeds, driving/bicycling under the influence of alcohol or drugs, hazardous on-street parking, and running off the road. These accidents are dispersed throughout the area and do not appear to occur more frequently near the Project area access points. In other words, the presence of access driveways to staging areas, access points, and trailheads is not a contributor to the occurrence of collisions.

These accidents could be attributed to the nature of winding rural roadways with varied geometrics, lack of shoulders, and presence of horizontal obstructions (i.e., trees) close to the roadway, and minimal street lighting. The presence of park related activity and access points are not a contributor to these accidents.

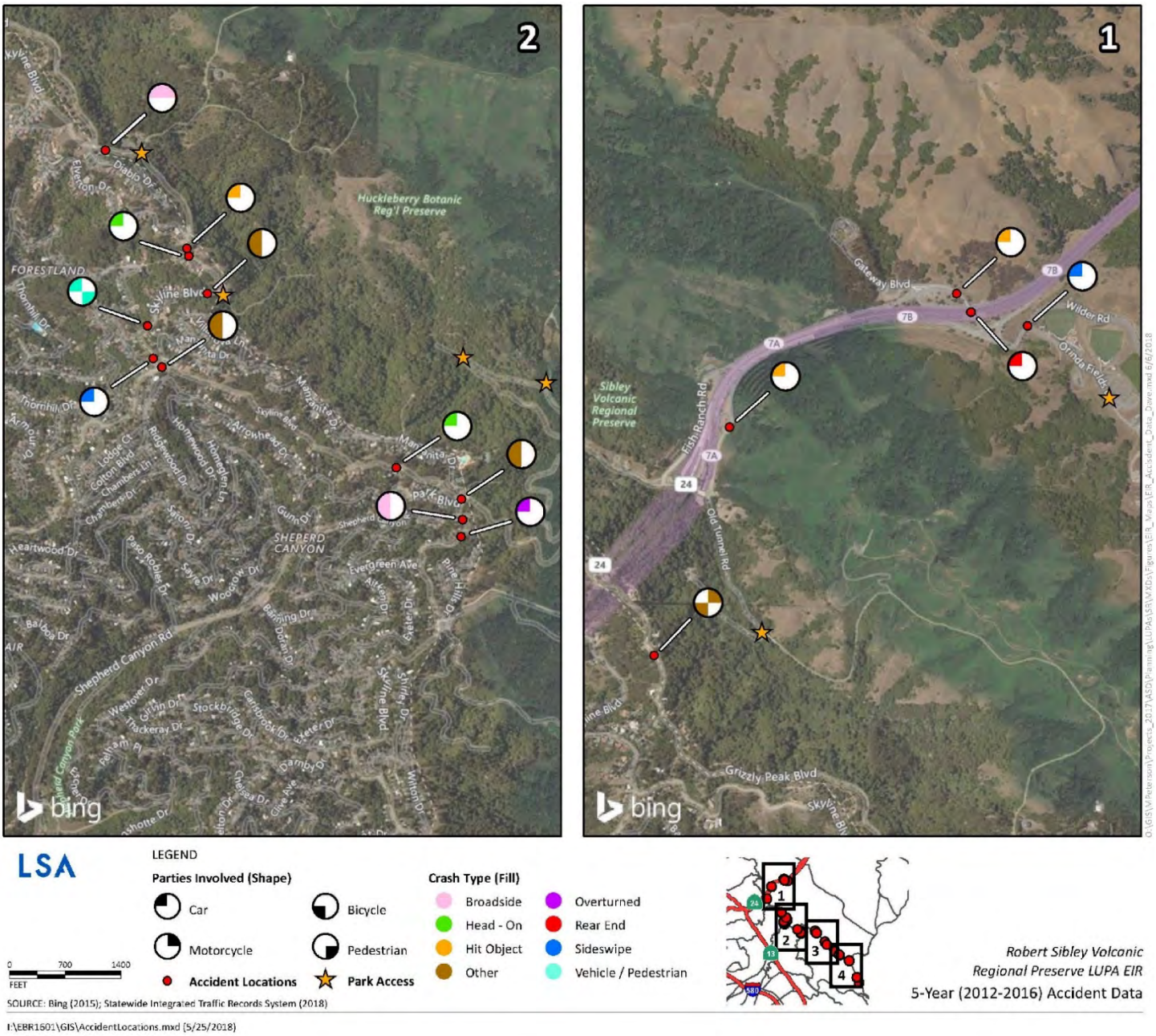

FIGURE 3.16-2A: ACCIDENT DATA

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

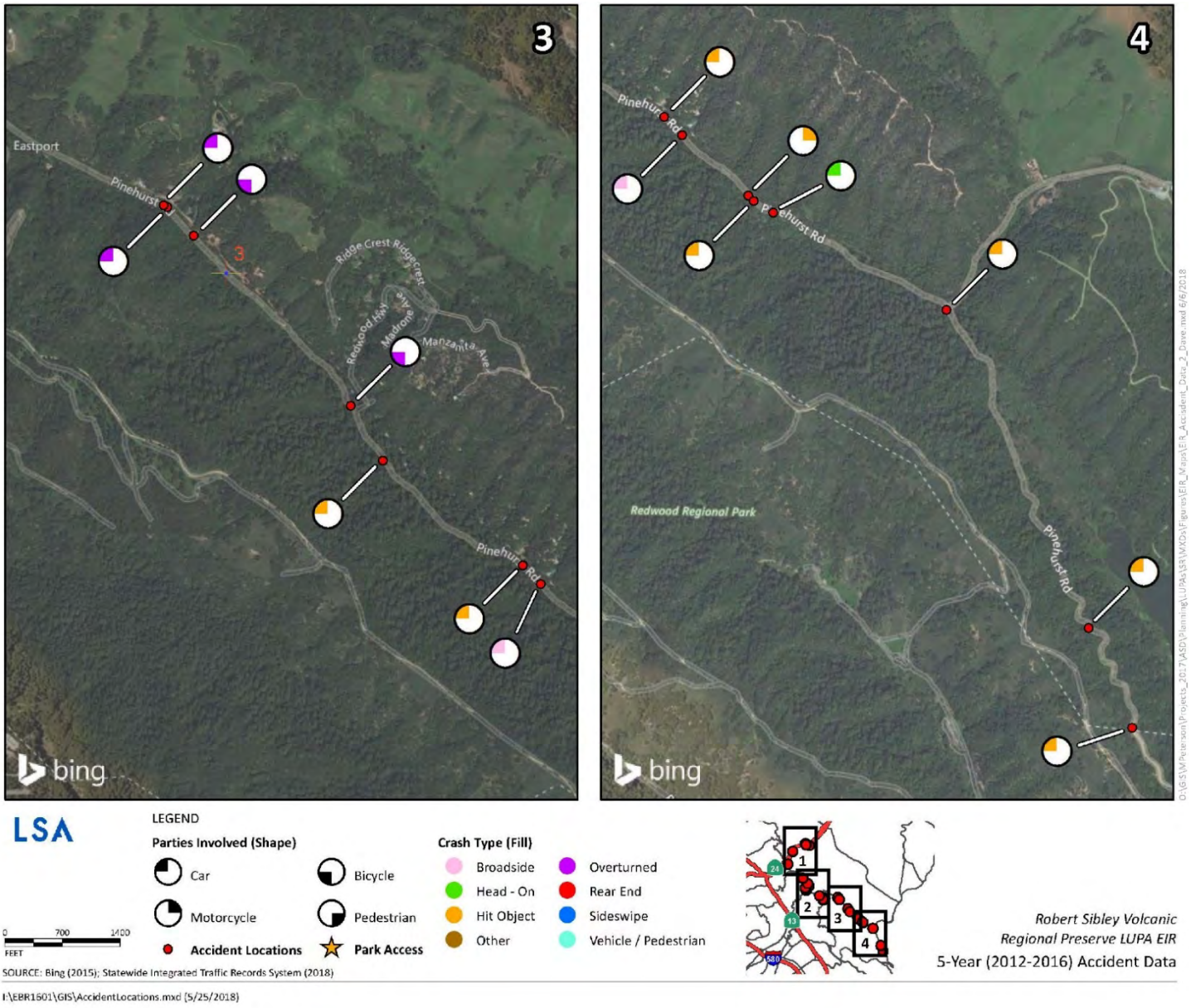

FIGURE 3.16-2B: ACCIDENT DATA

East Bay Regional Park District

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

There is no consistent cause for these accidents. This indicates that the accidents are not a result of pronounced hazard in any of the access driveways' geometry or structure. To promote safety upon entering and exiting the Project area the LUPA recommends dispersing use, adding parking, and encouraging use of alternative modes transportation where feasible and appropriate to reduce congestion that could result from a single point of entry. Additionally, the number of reported accidents near each driveway (i.e., one or less over the course of 5 years) is considered low.

Speed Assessment

In addition to accident data, LSA collected speed data along Skyline Boulevard just north of the Sibley Main Staging Area, Pinehurst Road to the south of the Wilcox/Eastport Staging Area, and Skyline Boulevard to the south of the Huckleberry Preserve Staging Area for the entire Friday through Sunday data collection period. These locations were selected for speed surveys due to the higher likelihood that vehicles may be speeding on through roads adjacent to staging areas as compared to the other staging areas that are located at or near the termini of their respective main access roads. Speed data provides insight on if vehicles are traveling at or higher than the posted speed limit.

California sets speed limits based on the prevailing speed of traffic on a roadway. The prevailing speed is identified as the 85th percentile speed, or the speed at which 85 percent of all motorized vehicles travel at or below. As speed limits are posted at 5 mile per hour (mph) intervals, the goal of a speed limit designation is to be within 5 mph of the prevailing 85th percentile speed. The results of this additional survey are shown below in *Table 3.16-5, Vehicle Speed Survey*.

TABLE 3.16-5
VEHICLE SPEED SURVEY

Roadway	Closest Staging Area	85th Percentile Speed for Friday through Sunday (mph)	Posted Speed Limit (mph)
Skyline Boulevard	Sibley Main	32	25
Skyline Boulevard	Huckleberry Preserve	33	25
Pinehurst Road	Wilcox (Eastport)	45	35

NOTES:
Mph = miles per hour

SOURCE: LSA (April 2018).

Based on the data collected, existing vehicular traffic is traveling at speeds that exceed the generally accepted range of speed that would be within 5 mph of the posted speed limit. In order to provide enough notice to drivers approaching staging areas along Skyline Boulevard and Pinehurst Road to avoid or stop ahead of potential access point conflicts, wayfinding signage denoting the presence of a staging area driveway or access point is encouraged. Such wayfinding signage should be placed at a distance that affords approaching vehicles time to stop. These

distances should follow State standards[4] for appropriate stopping sight distance for vehicles traveling at the prevailing speeds shown in the survey. Signage should be placed at least 250 feet to the north and south of the Sibley Main and Huckleberry Preserve staging areas on Skyline Road to provide adequate notice for vehicles traveling at 35mph. Signage on Pinehurst Road should be placed at least 360 feet prior to the Wilcox (Eastport) staging area to correspond with stopping sight distance for vehicles traveling at 45 mph. In order to maintain appropriate sight distance at each staging area, on-street parking directly adjacent to each driveway should be restricted to an extent that affords outbound vehicles to clearly see approaching vehicles on both Skyline Road and Pinehurst Road.

3.14.3 Research Methodologies

Vehicular Mobility – Intersection Level of Service

Evaluation of study location intersections utilized methodologies consistent with the City of Orinda and CCTA traffic analysis guidelines.

Level of service (LOS) is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations where LOS A represents free-flow activity and LOS F represents overcapacity operation.

Evaluation of vehicular operations at unsignalized intersections in the Project area will use the City of Orinda and CCTA-prescribed latest version of the Highway Capacity Manual (HCM) (6th Edition) peak hour intersection operations methodology. This methodology is a delay-based analysis methodology that relies on inputs such as intersection controls and geometrics and vehicular peak hour volumes and ultimately produces an LOS grade.

The southern terminus of Wilder Road where the Red-tailed Hawk Staging Area is located will not be assessed under this methodology as this location would not behave as a typical intersection of conflicting roadways with vehicle movements but rather a singular driveway. However, potential traffic associated with the Red-tailed Hawk Staging Area is included in the analysis of the closest intersection internal to the Wilder residential community referred to in this analysis as Wilder Road / Western Hills Red-tailed Hawk Staging Area. The Synchro 10 software package has been used to analyze vehicular peak hour LOS at unsignalized locations. Synchro 10 is a widely recognized and accepted macroscopic traffic analysis software that supports HCM 6th edition methodology. *Table 3.16-6, LOS and Unsignalized Intersection Delay* shows the relationship between LOS and delay:

[4] California Department of Transportation. 2017. *California Highway Design Manual.* November

TABLE 3.16-6
LOS AND UNSIGNALIZED INTERSECTION DELAY

LOS	Unsignalized Intersection Delay (seconds)
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

NOTES:
LOS = level of service

Trip Generation

The peak hour trips for the Project were generated using traffic volume data collected at each of the six Project area access points previously identified. While nationally used trip generation rates such as those published by the Institute of Transportation Engineers (ITE) may be applicable for nationally comparable uses such as a typical single-family household, church, or small community park, nationally surveyed rates were not used to forecast Project traffic. These rates were not used to forecast Project traffic because large recreational parks often wildly differ from each other in popularity, level of usage, and general interest due to characteristics that are specific to each individual large park environment and level of amenity.

To forecast new Project trips from existing data, quantifiable changes such as trail mileage and parking spaces resulting from the Project were considered against existing Project trip generation. First, a trip rate per unit is calculated by comparing the number of existing Project trips to the miles of existing trails and number of existing parking spaces. Once the number of existing Project trips per existing mile of trail and per number of existing parking spaces are calculated, this number can then later be multiplied by the number of new trail mileage or number of new parking spaces to reasonably forecast the number of new Project trips.

Existing weekend peak hour preserve traffic was counted to total 110 (59 inbound and 51 outbound) trips during the peak hour of each access point between 12:30 p.m. to 3:30 p.m. on Saturday, June 10, 2017. By using the peak hour of each access point rather than a uniform peak hour, this collection of existing Project traffic captures any particular mid-day weekend travel patterns unique to each location (such as any local activity gatherings) and represents a conservative, worst-case estimation of Project related Saturday mid-day traffic.

The Project's daily trip generation potential (trips generated for an entire 24-hour period) was estimated using a combination of the peak hour traffic counts collected and industry standard daily to peak hour traffic rates as 24-hour traffic counts could not be reasonably collected for the full three-day period due to the logistics of available light and mixed ground material at each access point. What this means is that the industry standard relationship of the number of Saturday

daily trips to the number of Saturday peak hour trips was applied to the known Project Saturday peak hour trip count to estimate Project Saturday daily traffic. The ITE Trip Generation 10th Edition[5] rates for Public Park ratio between the Saturday daily rate (1.96 daily trips per acre) and Saturday peak hour rate (0.28 peak hour trips per acre) results in a ratio of 7.00 Saturday daily trips to each Saturday peak hour trip. Applying this ratio to the preserve traffic count of 110 peak hour trips yields an existing Project trip generation of 770 trips per day.

Based on existing Project trail mileage and parking spaces, trip generation rates were developed for each park unit type, as shown in *Table 3.16-7, Project Saturday Trip Generation Rates*.

TABLE 3.16-7
PROJECT SATURDAY TRIP GENERATION RATES

Unit Type	Quantity	Units	ADT	Saturday Peak Hour		
				In	Out	Total
Existing Trail Mileage	13.9	Miles	55.40	4.24	3.67	7.91
Existing Parking Spaces	62	spaces	12.42	0.95	0.82	1.77
Existing Preserve Trips			770	59	51	110

NOTES:
ADT = Average Daily Trips

SOURCE: LSA (April 2018).

The Project's trip generation potential, based on its associated increases in trail mileage and parking spaces, were developed and shown below in *Table 3.6-8, Project Saturday Trip Generation Potential*.

TABLE 3.16-8
PROJECT SATURDAY TRIP GENERATION POTENTIAL

Unit Type	Quantity	Units	ADT[1]	Saturday Peak Hour		
				In	Out	Total
Additional Project Trail Mileage	8.2	Miles	454	35	30	65
Total Additional Parking Spaces	**134**	**spaces**	**1,664**	**128**	**110**	**238**

NOTES:
ADT = Average Daily Trips
LUPA = Land Use Plan Amendment

SOURCE: LSA (April 2018).

In an effort to provide a worst-case, most conservative analysis, the vehicular operations analysis will use the trip generation potential for the Project based on additional parking spaces. Based on

[5] Institute of Transportation Engineers. 2017. *Trip Generation 10th Edition.*

the trip generation potential for the Project based on the number of additional parking spaces, the Project trips associated with each staging area were divided based on the number of additional parking spaces proposed at each location. The Project is anticipated to result in 1,664 additional Saturday daily trips and 238 (128 inbound and 110 outbound) Saturday peak-hour trips. The trip generation by staging area is also shown in *Table 3.16-9, Project Saturday Trip Generation Potential by Staging Area*.

TABLE 3.16-9
PROJECT SATURDAY TRIP GENERATION POTENTIAL BY STAGING AREA

Staging Area	Additional Parking Spaces	ADT	Saturday Peak Hour		
			In	Out	Total
Sibley Main	35	248	19	16	35
Old Tunnel	20	435	33	29	62
Wilcox (Eastport)	5	0	0	0	0
Fiddleneck Field	43	596	46	39	85
Wilder City Park	10	124	10	8	18
Western Hills	19+2[1]	261	20	17	37
Total Preserve LUPA Saturday Trip Generation	**132+2**	**1,664**	**128**	**110**	**238**

NOTES:
ADT = Average Daily Trips
LUPA = Land Use Plan Amendment
[1] 2 new 2-horse trailer parking spaces have been treated the same as general purpose parking spaces for the purposes of this analysis.

SOURCE: LSA (April 2018).

3.16.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix G Section XVI, a project would have a significant impact on transportation conditions if it would:

a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit, non-motorized travel, and relevant components of the circulation system (including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit);

b) Conflict with an applicable congestion management program, including but not limited to level of service (LOS) standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks;

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

e) Result in inadequate emergency access; or

f) *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities*.

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below:

b) Conflict with an applicable congestion management program, including but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. As mentioned previously, CCTA is the County's CMA and is responsible for establishing, implementing and monitoring the County's CMP. Through its implementation of the CMP, the CCTA works to ensure that roadways operate at acceptable levels of service and reviews development proposals to ensure that transportation impacts are minimized.

CMP roadways that are near the Project area include State Route 24. As described previously, the Project will not add more than 100 trips to this facility, and therefore does not exceed the threshold set by Contra Costa County. Therefore, the Project is not expected to conflict with the applicable congestion management program and this criterion will not be discussed further in this EIR

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks. The Project does not include any structures that would interfere with air traffic patterns; nor would it increase traffic levels. As there is no impact related to air traffic this criterion will not be discussed further in this EIR.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The Project would not change the existing roadway design or existing access points to the local roadway network. As noted previously in the safety analysis, the presence of access driveways is not a contributor to the occurrence of collisions. Current collisions, especially of the types reported by local law enforcement, are not indicative of park utilization. As a result, the Project would not substantially increase hazards due to a design feature or incompatible uses and this criterion will not be discussed further in this EIR.

e) Result in inadequate emergency access. The Project would not change existing roadway design and would not impede the travel of emergency vehicles.

In the event of an emergency, the District General Manager or their designee may from time to time declare an area closed, entry prohibited, entry regulated, or limited to further entry. This provision is intended to safeguard people and property and would be

applicable in emergencies such as wild fires, landslides, and flooding where the travel of emergency vehicles within the project site cannot be insured.

Therefore, as the Project would not result in inadequate emergency access, this criterion will not be discussed further in this EIR.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. According to the District Master Plan, expanding unpaved multi-use trail system is a key Regional Facilities and Trails objective. Public transit, bicycle, and pedestrian facilities in the Project area are not expected to be affected by the operations or construction of the Project. Once the Project opens, pedestrians, bicyclists, and equestrians and dog-owners will have increased trail opportunities within and extending beyond the Project area.

3.16.5 Impact Analysis

a) Impact TRA-1: Project construction would cause temporary increases in traffic volumes on area roadways, which could cause substantial conflicts with the performance of the circulation system, but would not conflict with applicable plans, ordinances, or policies pertaining to the performance of the circulation system. (Less than Significant)

The Project would generate short-term construction-related vehicle trips from construction workers and delivery of construction vehicles. Vehicle trips that would be generated on a daily basis throughout each phase of construction would derive from construction workers and delivery of construction materials. Construction activity would occur on weekdays (Monday through Friday).

The grading phase is anticipated to be the most traffic-intensive phase due to the total number of haul trips. The total number of haul trips is based on Table 1-1 in the Project Description (Comparison of Proposed Actions with Existing Conditions) which lists depth, excavation, fill, spoils, and imported fill. This number includes the total imported fill. As illustrated by *Table 3.16-10, Project Weekday Construction Trip Generation Summary* during peak periods, Project construction is anticipated to generate 134 daily haul trips (and 30 daily construction worker trips) that would be distributed throughout an 8-hour day. Assuming a passenger car equivalent (PCE) factor of 2.0 for haul trips, 268 PCE haul trips are anticipated to be generated on a daily basis during this phase of construction, with approximately 34 PCE (17 inbound and 17 outbound) trips occurring during both the a.m. and p.m. weekday peak hours. The weekday a.m. peak period is 7:00 a.m. to 9:00 a.m. and the weekday p.m. peak period is 4:00 p.m. to 6:00 p.m. The majority of construction workers are anticipated to arrive and depart outside the peak hours.

Although, the Project's impact analysis has been based on the peak Saturday mid-day peak hour, daily roadway counts along Skyline Boulevard and Pinehurst Road were collected for Friday, Saturday, and Sunday of the data collection period. An examination of the peak hour volumes from these counts show that the Friday a.m. and p.m. peak hours are comparable to the Saturday mid-day peak hour. Do to the similarity of traffic conditions between these peak-hours, it is

reasonable to equate the potential impact from weekday peak hour construction traffic to weekend peak hour project traffic.

TABLE 3.16-10
PROJECT WEEKDAY CONSTRUCTION TRIP GENERATION SUMMARY

Land Use	Size	Unit	ADT	Hourly Generation		
				In	Out	Total
Construction Trips[1]						
Construction Workers	15	Workers	30	0	0	0
Haul Trucks	67	Trips	*134*	*9*	*8*	*17*
		PCE Equivalent (2.0/ haul truck)	268	17	17	34
Construction Trip Total (PCE)			298	17	17	34
Project Trip Generation			1,664	128	110	238
Trip Generation Comparison			(1,366)	(111)	(93)	(204)

NOTES:

ADT = average daily traffic
PCE = Passenger Car Equivalent

[1] Construction trips are based on CalIEEMod inputs for the most traffic-intensive project construction phase. Specifically, the grading phase has been selected as the most traffic-intensive phase due to the total number of haul trips. The grading phase has been assumed to require 332 total haul trips (1 inbound and 1 outbound) over the course of 5 days, 8 hours per day. Haul truck trips are assumed to occur regularly over the course of each construction day. In total, 15 worker trips (1 inbound and 1 outbound) per day are anticipated for this phase. It has been assumed that all workers will need to be on site prior and subsequent to and the construction workday in order to facilitate the removal of demolished materials onto haul trucks.

SOURCE: LSA (April 2018).

As discussed in detail previously and shown in *Table 3.16-10, Project Weekday Construction Trip Generation Summary* Project build out would generate 1,664 Saturday daily trips (128 trips in the Saturday peak hour). The demolition phase would generate fewer daily and peak hour vehicle trips compared to the Project at build out (1,366 fewer daily trips, 204 fewer peak hour trips). Because application of the City of Orinda General Plan Growth Management, methodology for determining the significance of traffic impacts concluded that the impacts due to Project traffic at build out would be less than significant, it is reasonable to conclude that traffic impacts related to construction of the Project, which generates fewer trips by several factors, would also be less than significant.

The effect of construction traffic to adjacent traffic intensive local uses such as the nearby Canyon Elementary School can be minimized or eliminated entirely through the scheduling of construction related heavy equipment traffic outside of school drop-off and pick-up periods. The scheduling of construction related traffic would be determined during construction planning and in coordination with the County and City.

The Project would not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. No mitigation is required.

Mitigation: None required

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a) Impact TRA-2: Project operation and maintenance would cause some increases in traffic volumes to surrounding roadways, but would not substantially conflict with the performance of the circulation system or with plans, ordinances, or policies pertaining to the performance of the circulation system. (Less than Significant)

In order to present a conservative analysis, the existing vehicular roadway facilities were assessed during the Saturday peak hour (12:30 p.m. to 3:30 p.m.) to determine current vehicular operational levels. As noted previously, the Saturday peak hour represents the busiest peak hour at each study location and not necessarily one uniform single peak hour. To assess the effects of Project related traffic on existing traffic conditions, the calculated Project traffic that was described previously in *Section 3.14.3 Research Methodologies* was added to existing traffic counts at each study location.

Once traffic volumes for existing and existing plus Project conditions are determined, the ability and level of existing roadway facilities to accommodate these volumes can be analyzed. Roadway facilities such as the number of lanes, type of intersection control, and presence of turn lanes, amongst other factors, contribute to the efficiency of overall vehicular operations. In order to determine operations of unsignalized study location intersections, the HCM methodology was used. The HCM methodology, described in detail previously in *Section 3.14.3 Research Methodologies*, calculates a delay value (in seconds per vehicle) for each study location based on roadway facilities and peak hour traffic volumes. These delay values are then assigned an LOS grade that range from A to F, with A corresponding to the lowest delay values and F corresponding to the highest delay values.

As shown in *Table 3.16-11, Existing Intersection Level of Service Summary*, all six existing study intersections currently operate at acceptable LOS B or better. Study locations are anticipated to continue to operate at acceptable LOS B or better after the addition of Project traffic. *Appendix X, Transportation and Traffic Data* includes all intersection LOS worksheets.

Per the City of Orinda's General Plan Growth Management Element, LOS C is considered to be the acceptable standard for intersection performance levels. As shown in *Table 3.16-11, Existing Intersection Level of Service Summary*, all study locations are anticipated to operate at LOS B or better with the full implementation of the Project. Therefore, the Project is expected to have a *less than significant impact*.

Mitigation: None required.

TABLE 3.16-11
EXISTING INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	Existing Weekend Peak Hour		Existing + Project Weekend Peak Hour	
	Delay	LOS	Delay	LOS
1. Pinehurst Road / Eastport/Fiddleneck Field Staging Area	0.0	A	9.2	A
2. Skyline Boulevard / Sibley Main Staging Area	9.5	A	10.0	B
3. Old Tunnel Road / Quarry Road	8.6	A	8.8	A
4. Wilder Road / Western Hills Red Tail Hawk Staging Area	8.6	A	8.9	A
5. Orinda Fields Lane / Wilder Road	8.9	A	9.1	A
6. Skyline Boulevard / Huckleberry Staging Area	8.8	A	8.9	A

NOTES:
sec = seconds
LOS = level of service

SOURCE: LSA (April 2018).

3.16.6 Cumulative Effects

This section describes future transportation and circulation conditions upon the proposed Project's completion.

Geographic Extent/Context

Improvements to the roadway geometrics and intersection controls adjacent to the study locations are neither proposed nor anticipated prior to the Project's completion.

Past, Present, and Reasonably Foreseeable Projects

Existing conditions reflect the contributions to local and regional traffic conditions of past projects. The following present and reasonably foreseeable projects may result in impacts to transportation and traffic conditions and are included in the analysis of the Project's cumulative impacts. Construction of the following cumulative projects is expected to occur within the same vicinity and timeframe as other planned and proposed projects. To forecast future traffic conditions in and around the study locations, nearby traffic generating developments have been identified and included in an existing plus future projects baseline condition.

Nearby projects that may potentially contribute traffic to study locations include the following:

- Astoria at Wilder (Refer to *Table 3-10-3, Pending Projects in the Project Vicinity* and *Figure 3.10-3, Proposed Development Projects in Project Vicinity)*
- Wilder Subdivision – currently under development

Both projects are in the City of Orinda and were selected as they may potentially contribute traffic to study locations that would serve the future Wilder City Park Staging Area and Western Hills Red-tailed Hawk Staging Area.

Astoria at Wilder is located on the north side of Wilder Road at the northern terminus of Orinda Fields Lane and would access the regional roadway network via an unsignalized driveway to the west of Orinda Fields Lane. Astoria at Wilder is proposed to be a 67-unit senior assisted living facility. A review of the access plan for Astoria at Wilder reveals that the location of the driveway is situated such that traffic associated with Astoria at Wilder would not pass through the intersection of Wilder Road/Orinda Fields Lane.

The Wilder subdivision is a planned residential development at the southern end of the City of Orinda and is currently under construction. The subdivision encompasses over 1,500 acres of land and contains 245 home sites, 5 community soccer fields, a community clubhouse, a private swimming and fitness facility, a network of walking, bicycle, and equestrian trails, and 1,300 acres of open space. The Wilder subdivision would have direct access to the adjacent Western Hills sub-area via the Wilder City Park and Western Hills Red-tailed Hawk staging areas. Saturday peak hour trips associated with the Wilder subdivision are based on industry standard ITE Trip Generation 10th Edition Saturday trip generation rates for single family detached residential homes and soccer fields. All other uses within the Wilder subdivision would serve primarily residents of the Wilder subdivision and would not contribute vehicular traffic to either of the study locations within the vicinity. *Table 3.16-12, Wilder Subdivision Saturday Trip Generation Summary* provides a Saturday trip generation summary table for the Wilder subdivision.

TABLE 3.16-12
WILDER SUBDIVISION SATURDAY TRIP GENERATION SUMMARY

Unit Type	Size	Units	ADT[1]	Saturday Peak Hour		
				In	Out	Total
Trip Rates[a]						
Single Family Detached Residential (210)		DU	9.54	0.50	0.43	0.93
Soccer Fields		Fields	404.88	19.25	20.85	40.10
Trip Generation						
Single Family Detached Residential	245	DU	2,337	123	105	228
Soccer Fields	5	Fields	2,024	96	104	200
Wilder Subdivision Total			4,361	219	209	428

NOTES:

ADT = Average Daily Trips
[a] Trip rates obtained from ITE *Trip Generation Manual* 10th Edition, 2017

SOURCE: LSA (April 2018).

These volumes were then added to existing volumes to arrive at an existing plus future projects baseline. These volumes were then used to assess existing plus future projects peak hour vehicular operations at the study location of Wilder Road / Orinda Fields Lane. Traffic associated with the Wilder subdivision is not anticipated to contribute traffic to any of the other study locations due to the Wilder subdivisions relative location in the local transportation network.

As shown in *Table 3.16-13, Existing Plus Future Projects Intersection Level of Service Summary*, the contribution of traffic from the Wilder subdivision to the study location of Orinda Fields Lane/Wilder Road is not anticipated to worsen traffic conditions to unacceptable conditions. This location will remain at an acceptable LOS B under existing plus future projects baseline and existing plus future projects plus project conditions.

TABLE 3.16-13
EXISTING PLUS FUTURE PROJECTS INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	Existing + Future Projects Weekend Peak Hour		Existing + Future Projects + Project Weekend Peak Hour	
	Delay	LOS	Delay	LOS
5. Orinda Fields Lane / Wilder Road	12.1	B	12.5	B

NOTES:
sec = seconds
LOS = level of service

SOURCE: LSA (April 2018).

Per the City of Orinda's General Plan Growth Management Element, LOS C is considered to be the acceptable standard for intersection performance levels. As shown in *Table 3.16-13, Existing Plus Future Projects Intersection Level of Service Summary*, all affected study locations are anticipated to operate at LOS B or better with the full implementation of the Project. Therefore, the Project is expected to have a *less than significant impact*.

3.16.7 References

California Department of Transportation. 2017. California Highway Design Manual. November.

East Bay Regional Park District. *Master Plan*. 2013.

Governor's Office of Planning and Research. 2014. Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing Senate Bill 743. August.

Governor's Office of Planning and Research. 2015. Technical Advisory on Evaluating Vehicle Miles Traveled in CEQA. July.

Governor's Office of Planning and Research. 2016. Revised Proposal on Updates to the CEQA Guidelines Evaluating Transportation Impacts in CEQA. January.

Institute of Transportation Engineers. 2017. *Trip Generation 10th Edition*. http://www.actransit.org/ accessed May 18, 2018.

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3.17 Utilities and Service Systems

This section describes existing utilities, service systems and energy sources and use and conditions that could affect or be affected by the Project. This section also describes laws, regulations, plans, and policies related to utilities and service systems that may be relevant to the Project. Energy factors relating to traffic are discussed in *Section 3.3, Air Quality* and *Section 3.16, Transportation and Traffic* and factors relating to stormwater are discussed in this section and in *Section 3.9, Hydrology and Water Quality*. Impacts associated with the land alterations resulting from the proposed construction activities are also discussed in *Sections 3.3, Air Quality, 3.4, Biological Resources, 3.5, Cultural and Cultural Tribal Resources, 3.6, Geology and Soils,* and *3.9, Hydrology and Water Quality,* along with applicable regulations, standard Best Management Practices, and mitigations that would serve to reduce Project activities to below the level of significance.

3.17.1 Regulatory Framework

This regulatory framework sets the context for the range of issues related to utilities and service systems that the District considered in the evaluation of the potential for the Project to have a significant effect on the environment.

Federal

The Safe Drinking Water Act (SDWA) is summarized below. Refer to *Chapter 3.9, Hydrology and Water Quality, Section 3.9.1 Regulatory Framework* for a discussion of the Clean Water Act and Municipal Urban (Area-wide) Storm-Water Discharges, for additional federal mechanisms considered when assessing proposed water service and discharge systems in the Project area.

Safe Drinking Water Act

The U.S. EPA administers the Safe Drinking Water Act (SDWA), the primary federal law that ensures the quality of drinking water from source to tap by setting national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants.

State

There are several State mechanisms for assessing utilities and service systems in the Project area. These programs are summarized below. Refer to *Chapter 3.9, Hydrology and Water Quality, Section 3.9.1 Regulatory Framework* for a discussion of the State Regional Water Quality Control Board regulations pertaining to stormwater run-off.

California Integrated Waste Management Act

The California Integrated Waste Management Act (AB 939) passed in 1989 required that local jurisdictions in the state divert at least fifty percent of discarded materials from landfills.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act was enacted to preserve, enhance, and restore the quality of the state's water resources. The act established the State Water Resources Control

Board and nine Regional Water Quality Control Boards (RWQCB) as the principal state agencies with the responsibility for controlling water quality in California. Under the act, water quality policy is established, water quality standards are enforced for both surface water and groundwater, and the discharges of pollutants from point and nonpoint sources are regulated. The act authorizes the State Water Resources Control Board to establish water quality principles and guidelines for long-range resource planning including groundwater and surface water management programs and control and use of recycled water.

Electronic Waste Recycling Act (SB20)

The 2005 Electronic Waste Recycling Act (SB 20), bans the disposal of all types of electronic household items, including but not limited to batteries, fluorescent lamps, computers, TVs and cell phones into garbage bins and requires these items to be recycled.

Mandatory Commercial Recycling Law (AB341)

In 2012, the State of California adopted the Mandatory Commercial Recycling law (AB 341). This law is designed to help meet California's year 2020 recycling goal of 75 percent by requiring commercial enterprises and public entities that generate four or more cubic yards per week of waste and multi-family housing complexes with five or more units, to adopt recycling practices.

Senate Bill 350

Senate Bill 350 (SB350) establishes a requirement for California to: 1) reduce the use of petroleum in cars by 50 percent; 2) generate half of its electricity from renewable resources; and 3) increase energy efficiency by 50 percent at new and existing buildings by the year 2030.

Organic Waste Bill (AB1826)

In 2014, the State of California signed into effect the organic waste bill (AB 1826). AB 1826 requires businesses to separate their food scraps and yard trimmings for composting or anaerobic digestion. This law will be phased in between January 1st, 2016 and the summer of 2021. It requires commercial businesses, including special districts which generate more than four yards of *organic waste* per week in 2017 to divert the organic material. Then, in 2019 those which generate more than four yards of *solid waste* per week must properly recycle that organic waste.

Short-lived Climate Pollutants: Organic Waste Methane Emissions Reductions (SB1383)

The 2016 Short-Lived Climate Pollutants: Organic Waste Methane Emissions Reductions Act is directed at reducing the quantity of organic waste being transferred to landfills statewide. SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

California Code of Regulations

Title 24 of the California Code of Regulations establishes standards for buildings constructed after June 30, 1977. Title 24 requires the inclusion of the state-of-the-art energy conservation features in building design and construction including the incorporation of specific energy conserving design features, use of non-depletable energy resources, or a demonstration that buildings would comply with a designated energy budget.

Part 6 of Title 24 sets the energy efficiency standards for residential and nonresidential buildings. Updated in 2013, the standards set a goal of reducing growth in electricity use by 561.2 gigawatt-hours per year (GWh/y) and growth in natural gas use by 19 million therms per year (therms/y).

Local Resource Protection Ordinances and Policies

Refer to *Chapter 3.9, Hydrology and Water Quality*, *Section 3.9.1 Regulatory Framework* for a discussion of the local Contra Costa Clean Water Program and Municipal Regional Permit and Provision C.3 Permit Requirements.

Contra Costa County Ordinance Code

Chapter 418-10 of the Contra Costa County Ordinance Code, requires waste from the haulers of a local agency to meet minimum resource recovery requirements to dispose of solid waste in landfills located in the unincorporated area of the County.

Contra Costa County Septic Tank Moratorium

Effective September 21, 1964 and reinforced by additional memos in 1970, 1974, 1977 and 1978, no further applications for individual sewage disposal systems will be accepted by Contra Costa County around the unincorporated community of Canyon until further notice due to poor soil conditions, ledge rock, poor percolation, steep slopes, etc. (*Memos - Health Officer, Glen W. Kent, M.D.*)

The moratorium on septic tank installations in the Canyon area is generally bounded on the north by the boundaries of the Moraga Redwood heights subdivision, on the west by Sacramento Northern Right of Way, on the east by the western boundary of the property owned by McCosker in 1969 when the moratorium was established (*Contra Costa County General Plan Figure 7-4 - Areas of Identified Septic Tank and Leachfield Constraints* 1990-2005).

City and County General Plan Policies

City and county general plan policies provide guidance on District parklands from the planning phases through project implementation. Relevant city and county general plan policies pertaining to utilities and service systems in the Project area are described in *Table 3.17-1, City and County Utilities and Service Systems Goals and Policies.*

TABLE 3.17-1
CITY AND COUNTY GENERAL PLAN UTILITIES AND SERVICE SYSTEMS GOALS AND POLICIES

Contra Costa County General Plan	Project Consistency
7-F: To assure potable water availability in quantities sufficient to serve existing and future residents.	Consistent with Goal 7-F, the Project has included studies to ensure that existing water sources would be adequate to meet future needs at the site for park visitors, park staff residences and livestock. Existing water sources include municipal water in the Preserve and Western Hills Open Space sub-areas and spring water in the McCosker sub-area. To assure potable water availability, Project actions include installing a water tank at the Sibley backpack camp and installing a water line, water tank and a water treatment system to service the Fiddleneck Field recreation area.
7-I: To protect and enhance the quality of water supplied to County residents.	Consistent with Goal 7-I, the Project would include a water treatment system to treat spring water sources that would be made available for human consumption at Fiddleneck Field.
7-16: Water service systems shall be required to meet regulatory standards for water delivery, water storage and emergency water supplies.	Consistent with Goal 7-16, Project implementation would involve the development of plans and specifications conforming to regulatory standards for water delivery, water storage and emergency water supplies. Construction plans would be reviewed by the appropriate District and county departments for regulatory conformance. Moreover, District staff routinely monitor District water systems to ensure they meet standards for human consumption with oversight from Contra Costa Environmental Health.
7-25: Land uses and activities that could result in contamination of groundwater supplies shall be identified, monitored and regulated to minimize the risk of such contamination	Consistent with Goal 7-25, Project implementation would include monitoring to ensure that construction activities would not result in contamination of groundwater.
7-O: To protect and enhance the natural resources associated with creeks and the Delta, and their riparian zones, without jeopardizing the public health, safety, and welfare.	Consistent with Goal 7-O, the Project would enhance the natural resources associated with creeks and their riparian zones through the restoration of 2,900 linear feet of creek channel currently contained in collapsing and partially blocked buried concrete and metal pipes.
7-Q: To employ alternative drainage systems improvements which rely on increased retention capacity to lessen or eliminate the need for structural modifications to watercourses, whenever economically possible.	Consistent with Goal 7-Q, the Project would restore 2,900 linear feet of creek channel to achieve a stable and self-maintaining creek that would require a low level of adaptive management and maintenance practices. This would allow the creek to exist in a state of dynamic equilibrium, where is it properly transporting both water and sediment in a balanced manner, neither leading to excessive erosion nor deposition throughout the restored creek channel.
7-R: To enhance opportunities for public accessibility and recreational use of creeks, streams, drainage channels and other drainage system improvements.	Consistent with Goal 7-R, the Project would enhance opportunities for public accessibility to the restored creek channel through the development of the Alder Creek Nature Trail and Leatherwood Creek Trail.
7-41: Aesthetic, environmental, and recreational benefits shall be taken into full consideration when determining the costs and benefits of alternative drainage system improvements.	Consistent with Goal 7-41, the Project creek restoration project in the McCosker sub-area considers aesthetic, environmental, and recreational benefits in Project Objective 2: Creek Restoration which states, "*Improve creek functions in the McCosker sub-area, including overall ecosystem health for native aquatic organisms, water quality protection, sediment sorting and transport, flood storage capacity, and site aesthetics*."
7-49: Natural streams and channels which have been structurally modified shall be evaluated for potential use as urban open spaces, linear parks, and trails. Cities and other agencies responsible for recreation shall be encouraged to undertake this evaluation.	Consistent with Goal 7-49, the Project would restore 2,900 linear feet of creek channel currently contained in collapsing and partially blocked buried concrete and metal pipes, develop an ADA accessible nature trail paralleling the stream channel, and provide opportunities to learn about creek functions through interpretive watershed programming, including water quality monitoring and posting to citizen scientist websites as set forth in strategies supporting Objective 2: Creek Restoration.

TABLE 3.17-1
CITY AND COUNTY GENERAL PLAN UTILITIES AND SERVICE SYSTEMS GOALS AND POLICIES (CONTINUED)

Contra Costa County General Plan (cont.)	Project Consistency (cont.)
7-AG: To reduce the amount of waste disposed of in landfills by: 1) reducing the amount of solid waste generated (waste reduction), 2) reusing and recycling as much of the solid waste as possible, 3) utilizing the energy and nutrient value of the solid waste (waste to energy and composting), and 4) properly disposing of the remaining solid waste (landfill disposal).	Consistent with Goal 7-AG, the Project would comply with the District adopted a sustainability policy that took effect on April 22, 2009. In accordance with this policy, the District, seeks to voluntarily comply with the California Waste Management Act of 1989 and the County of Alameda Waste Reduction and Recycling Act of 1990 to reduce the amount of waste disposed of in landfills. Construction of the restored creek channel is anticipated to require removal of fill, most of which would be transferred on-site to the proposed Fiddleneck Field recreation site. Removal and disposal of buried concrete and metal pipes, and various concrete and wood debris contained within the restoration area would be transported to an approved off-site disposal area. Construction of the proposed trails would typically be done to balance cut and fill on site.
7-AH: To divert as much waste as feasible from landfills through recovery and recycling.	Consistent with Goal 7-AH, the Project would divert as much waste as feasible from landfills through recovery and recycling through implementation of Objective 6: Climate Adaptation and Resiliency in accordance with the following supporting strategy "*Reuse on-site materials to develop new recreation and interpretive features, where feasible and appropriate*."
7-91: Solid waste resource recovery (including recycling, composting, and waste to energy) shall be encouraged so as to extend the life of sanitary landfills, reduce the environmental impact of solid waste disposal, and to make use of valuable resources, provided that specific resource recovery programs are economically and environmentally desirable.	Consistent with Goal 7-91, the Project would divert as much waste as feasible from landfills through recovery and recycling through implementation of Objective 6: Climate Adaptation and Resiliency in accordance with the following supporting strategy "*Reuse on-site materials to develop new recreation and interpretive features, where feasible and appropriate*." The Project would encourage petroleum fuel reduction through development of trails that would provide connections to local neighborhoods and installation of electric vehicle charging stations.
7-92: Waste diversion from landfills due to resource recovery activities shall be subject to goals included in the County Integrated Waste Management Plan. Public agencies and the private sector should strive to meet these aggressive goals	Consistent with Goal 7-92, the Project would comply with the District adopted a sustainability policy that took effect on April 22, 2009. In accordance with this policy, the District, seeks to voluntarily comply with the California Waste Management Act of 1989 and the County of Alameda Waste Reduction and Recycling Act of 1990 to reduce the amount of waste disposed of in landfills.
City of Orinda General Plan	**Project Consistency**
4-L: Promote energy conservation programs and practices.	Consistent with Goal 4-L, the Project would promote energy conservation programs and practices through implementation of Objective 6: Climate Adaptation and Resiliency in accordance with the following supporting strategy which states, "*Incorporate alternative energy sources such as solar into the project design, where feasible and appropriate*."
City of Oakland General Plan	**Project Consistency**
CO-13: To manage Oakland's energy resources as efficiently as possible, reduce consumption of non-renewable resources, and develop energy resources which reduce dependency on fossil fuels.	Consistent with Policy CO-13, the Project would promote energy conservation programs and practices through implementation of Objective 6: Climate Adaptation and Resiliency in accordance with the following supporting strategies which state, "*Incorporate alternative energy sources such as solar into the project design, where feasible and appropriate," and "Reuse on-site materials to develop new recreation and interpretive features, where feasible and appropriate*." The Project would encourage petroleum fuel reduction through development of trails that would provide connections to local neighborhoods and installation of electric vehicle charging stations.
Policy CO-13.3: Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.	Consistent with Policy CO-13.3, the Project would promote energy conservation programs and practices through implementation of Objective 6: Climate Adaptation and Resiliency in accordance with the following supporting strategies which state, "*Incorporate alternative energy sources such as solar into the project design, where feasible and appropriate*."

East Bay Regional Parks

2013 District Master Plan

The Master Plan adopted in 2013 defines the vision and mission of District with the core mission stated as follows:

> *"Preserve a rich heritage of natural and cultural resources and provide open space, parks, trails, safe and healthful recreation and environmental education. An environmental ethic guides the District in all of its activities."*

District Master Plan Policies

The District Master Plan contains policies guiding parkland acquisition, parkland dedications, parkland uses, and coordination with local cities and counties. Applicable policies addressing utilities and service systems are described in *Table 3.17-2, 2013 District Master Plan Utilities and Service System Goals and Policies.*

TABLE 3.17-2
2013 DISTRICT MASTER PLAN UTILITIES AND SERVICE SYSTEMS GOALS AND POLICIES

Goals and Policies	Project Consistency
NRM11: Park water resources will be used for beneficial purposes. Water quality will be monitored to comply with established standards. The District will participate in cooperative efforts to plan comprehensive watershed management and will adopt "best management practice" guidelines for District land use activities to minimize potential storm water pollution. The District will monitor land use planning and development activities by other agencies and cities to avoid potential adverse impacts to parkland from pollutants generated by off-site or upstream sources.	Consistent with Master Plan Policy NRM11, the District routinely monitors water quality in District water sources including creeks, ponds and lakes to comply with established standards. Stormwater originating from the Project during construction and post construction would be addressed in accordance with the Regional Water Quality Control Board Storm Water Pollution Prevention Plan (SWPPP) requirements. A SWPPP would be prepared by a Qualified SWPPP Developer (QSD) and managed on-site by a Qualified SWPPP Practitioner (QSP) to ensure implementation of appropriate Best Management Practices for minimizing potential erosion and sedimentation within the Project Area during and post construction.
NRM11b: The District will pursue conservation and control technologies for the use of potable and irrigation water. The District will seek to reduce the use of imported water for uses other than human consumption through conservation and by developing other sources of water for irrigation and non-potable needs.	Consistent with Master Plan Policy NRM11b, the Project would include development of on-site water systems to serve the McCosker sub-area using springs for which the District maintains water rights.
PRPT29: New utility lines will be placed underground on land owned, operated, or managed by the District to retain optimal visual qualities in the area. Rights of ways and easements will not be granted without under-grounding. The District will work in cooperation with utility companies to place overhead utilities underground (unless doing so conflicts with applicable codes) as soon as practical and will work with other agencies and neighbors to reduce visual impacts on adjacent lands.	Consistent with Master Plan Policy PRPT29, the Project would include undergrounding utility lines.

Ordinance 38

Ordinances directed at utilities and service systems in District parklands area summarized in *Table 3.17-3, Relevant Ordinance 38 Sections* below.

TABLE 3.17-3
RELEVANT ORDINANCE 38 SECTIONS

Section 504. Littering Waters. This section states, "Any person who violates the littering laws of this State with respect to littering or dumping waste material in water or on shore may be arrested or issued a citation pursuant to Penal Code Section 374e. Penal Code Section 374e states: Every person who litters or causes to be littered, or dumps, or cause to be dumped, any waste matter into any bay, lagoon, channel, river, creek, slough, canal, lake or reservoir, or other stream or body of water, or upon a bay, beach or shore within 150 feet of the high-water mark of any such water, is guilty of a misdemeanor. Every person convicted of a violation of this section shall be punished by a mandatory fine….
900.2 Littering or Dumping. This section states, "No person shall litter or cause to be littered any District parkland, or cause to be dumped any waste matter in or upon any District parkland. It shall be unlawful to place, deposit, or dump, or cause to be placed, deposited or dumped, any rocks or dirt in or upon any District parkland without the prior written consent of the General Manager. Any person littering or dumping any waste material upon District parkland shall be arrested or issued a citation pursuant to Penal Code Sections 374.4 and 374.3."
900.3 Household or Industrial Materials. This section states, "No person, firm, or business shall bring household or industrial garbage, trash or waste materials into any lands owned or operated by the District for the purpose of placing such materials into any trash can, dumpster, or receptacle provided by the District."

East Bay Regional Park District Standard Technical Specifications and Supplementary Conditions

The District's Standard Technical Specifications and Supplementary Conditions contain provisions that are intended to ensure, among other things, the safety of the construction workers, staff and the public, and the protection of wildlife, site resources, and water quality during construction and operation of site amenities. Relevant sections are provided in *Table 3.17-4, Relevant Technical Specifications* below.

TABLE 3.17-4
RELEVANT TECHNICAL SPECIFICATIONS

Site Set-up - Execution
• Work on site shall only take place between June 15 and October 31. • Confine work activities to approved construction work areas, staging areas and access routes. • Excavations shall not be left open overnight. Where not backfilled, excavations shall be tightly covered. Perimeters of plywood panels or other covers shall be edged with dirt to prevent intrusion of small animals. • Excavations shall include a ramp with a maximum slope of 1:1 to allow animals to escape the excavation when not covered. • Storage of equipment and vehicles shall be a minimum of 100 feet from the top of the creek bank. • Fueling of equipment and vehicles shall take place a minimum of 200 feet from the top of the creek bank.
Erosion Control SWPPP Requirements
In addition to the requirements of the CASQA or Caltrans standard, the SWPPP shall contain an Erosion Control Plan that includes the following provisions: • Fiber rolls and erosion control blankets shall not contain netting that could trap small animals. • Photodegradable products are not acceptable. • All erosion control products shall be weed and seed free. • All temporary erosion control measures shall be immediately removed when no longer needed. • All temporary erosion control measures shall be removed and legally disposed of prior to project completion.
Clearing and Grubbing
• All cut and fill areas: Strip topsoil to 2-inches minimum below existing grade where vegetation occurs. Additional depth may be required to remove organic materials. • Stripped material shall be disposed of off-site and in a legal manner or stockpiled for reuse as directed by the District. • Upon completion of clearing and grubbing, areas shall be left in a neat, clean condition ready to receive subsequent work.

TABLE 3.17-4
RELEVANT TECHNICAL SPECIFICATIONS (CONTINUED)

Excavated Material
• All excavated material shall be piled in a manner which will not endanger the work and which will avoid completely obstructing access. Culverts, swales, and natural drainage patterns shall be kept clear. • The excavations and support system shall comply in all respects with the requirements of Article 6, of the Construction Safety Orders of the Division of Industrial Safety. • At no time shall trenches be left open during the Contractor's non-working hours. Trenches shall be backfilled to grade and/or covered with plywood or traffic-rated metal plates and pipe ends securely closed with a tight-fitting plug or cover at the end of each work day. • All open excavations 5 feet or greater in depth shall be constructed with bracing, sheeting, shoring, or other equivalent method designed for the protection of life and limb in accordance to Section 6705 of the State Labor Code. • The trench excavations and support system shall comply in all respects with the requirements of Article 6, of the Construction Safety Orders of the Division of Industrial Safety.
Protection of Existing Trees and Shrubs
• When it is necessary to excavate adjacent to existing trees and shrubs, Contractor shall use all possible care to avoid injury to these plants and their roots. No roots three (3) inches or larger in diameter shall be cut without the prior approval of the District. • In no case shall any limbs be cut or trees and shrubs removed without first obtaining approval from the District.
Utility and Water Line Installation
• All utility-related work including, but not limited to, power and communications joint trenching, utility boxes, transformer pad and gas shall be done in accordance with the Pacific Gas & Electric Company Substructure drawings. • Bedding material shall be tested in accordance with Section 6 of Caltrans State Standard Specifications. • Bedding materials and utilities shall not be installed until the trench has been approved by the District Inspector. • Warning tape, tracer tape and/or tracer wire shall be installed marking underground utility locations. • Water pipes shall be carefully inspected in the field before and after laying. In no event shall rejected pipe be installed. • The interior of the pipe shall be clean and free from foreign material before sections of pipe are connected. Whenever the work ceases for any reason, the end of the pipe shall be securely closed with a tight-fitting plug or cover. All openings in the pipeline shall be kept plugged or covered. • Water lines shall be tested for leaks and bacteriological contamination. • Disposal of flush and disinfection waste water shall be according to the authorities having jurisdiction. In no case shall flush and disinfection waste water be discharged into creeks or storm drains. • The irrigation system shall be thoroughly flushed with water to remove all dirt, scale, and foreign matter of any nature before installing the emitters and valves. Flushing shall be as directed by District Inspector. • Utility trenches shall not be covered until the installation has been approved by the District Inspector. • Original grades and finishes shall be restored unless otherwise noted. Excess excavated trench material not used for backfilling shall be hauled to an area designated by the District Inspector. • Utility locations and depths shall be included on the Record Drawings. • Three 3-ring binders with all bulletins, operating and maintenance instructions and parts list and other pertinent information for every piece of utility equipment furnished shall be submitted to the District.
Supplementary Conditions
• The California State Water Resources Control Board, San Francisco Bay Region, Oakland, California has jurisdiction over the project stormwater discharges within the Project area. Accordingly, the following actions will be required prior to initiating implementation of the Project: 1) the District will submit a Notice of Intent (NOI) and obtain a waste discharger identification number (WDID) from the above agency; 2) a Receipt of NOI will be obtained by the District from SWRCB prior to the start of construction; and 3) the Contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) in conformance with California State Water Resources Control Board No. 92-08 DWQ for discharges of stormwater runoff associated with construction activity.

District Sustainability Policy

In keeping with the goals set out by the District's 1997 Master Plan to "maintain a careful balance between the need to protect and conserve resources and the recreational use of parkland," the District adopted a sustainability policy that took effect on April 22, 2009. In accordance with this policy, the District, seeks to voluntarily comply with the California Waste Management Act of

1989 and the County of Alameda Waste Reduction and Recycling Act of 1990 (Measure D), and to: apply the State of California and Alameda County principles of waste reduction, reuse and recycling; conservation of energy and natural resources; and reduction or elimination of toxic materials in the park environment, support for strong recycling markets, and cost effectiveness.

In 2002, the Board of Directors updated its recycling goals with the adoption of Resolution No. 2002-12-263. This resolution establishes the need for a District-directed waste management program to minimize the amount and types of waste generated through District operations. In 2009, the Board of Directors passed Resolution No. 2009-4-102 implementing a Sustainability Policy, stating that waste reduction and recycling goals shall be pursued. Then, in 2018 the Board of Directors passed Resolution 2018-04-081, which establishes a policy framework for managing park resources in a changing climate, including waste recycling and reduction considerations.

The objectives of the Board of Directors in adopting these resolutions directed at recycling and waste reductions are to: 1) comply with local and state-wide regulations pertaining to commercial recycling; 2) provide opportunities for park visitors to recycle cans, glass, plastics, paper and compostable materials; 3) provide opportunities for park employees to recycle metal scraps, green waste, office paper, cans and bottles, cardboard and compostable materials; 4) set up contracts with commercial haulers to pick up and remove solid waste from the Parks; 5) demonstrate and interpret the District's commitment to preservation of natural resources and the environment; and 6) provide a regulatory compliant hazardous and universal waste drop off location for park staff.

By applying the principles of recycling and waste reduction in everyday practices, the District is working to significantly reduce the amount of waste it disposes in landfills, thereby reducing its waste disposal costs, conserving energy and natural resources, and setting an example for the public.

District Strategic Energy Plan

The District Strategic Energy Plan was prepared to serve as a roadmap for future energy decisions with the intent of improving energy efficiency and generating energy on-site where feasible and appropriate, to reduce energy costs and reduce its greenhouse gas (GHG) emissions, thereby reducing the carbon footprint of the District. Energy efficiency projects identified in this report address lighting, space heating, pumping and hot water systems operated by the District. The plan also identifies opportunities to offset a portion of the District electric loads by generating electricity from photovoltaic systems in Shadow Cliffs Regional Park.

District Climate Adaption Strategy

In recognizing that greenhouse gas (GHG) emissions from human activity are catalyzing climate change, the District has formed a climate action team steering committee to develop climate resiliency and adaptation programs. These include an inventory of District emissions and a utility infrastructure security and maintenance program for repairing, operating, and modernizing park infrastructure including waterlines, sewage systems, electrical systems and communication systems to reduce carbon emissions, prevent environmental damage and provide energy savings.

3.17.2 Existing Conditions

Infrastructure and Staff Services

Routine Maintenance

Park operations staff are responsible for routine maintenance, including: cleaning restrooms, removing litter from parkland areas, day-to-day monitoring of utilities and service systems, and for notifying appropriate District or outside operators if is there is a disruption to any of these service systems.

Waste and Water Management Services

The District's Sanitation and Recycling Department operates and maintains sewage and wastewater systems and services within the District including the Project site. The District's Water Management Department operates and maintains water systems and services within the District, including the Project area.

Solid Waste Collection

Solid waste collection services for the Project area are currently regulated by the Central Contra Costa Solid Waste Authority (CCCSWA), doing business as RecycleSmart. Solid waste collection and recycling services are currently provided through franchise agreements with waste collection services. However, per a 2016, District legal counsel determination, the District is exempt from other local franchise agreements and is free to contract with any waste hauler that it deems fit.

Republic Services, formerly called Allied Waste Services, is responsible for the collection, transfer, and disposal of residential and commercial garbage, recycling, and organics in Lafayette, Moraga, Orinda, Walnut Creek, and surrounding unincorporated communities of Contra Costa County. For the Project area, staff collects the solid waste from each of the staging areas and brings it back to the service yard located at the terminus of Old Tunnel Road where, in accordance with the contract with the District, Republic Services is responsible for the collection, transfer, and disposal of garbage, recycling, and organics.

To minimize the quantity of solid waste than ends up in landfills the District has implemented several strategies for dealing with solid waste to facilitate compliance with state and local laws. These waste reduction strategies include: 1) using chippers to reduce the volume of green waste and allowing this material to remain on-site for reuse as mulch; 2) collecting construction and demolition (C&D) materials at the Tilden Corporation Yard or the South County Corporation Yard where they can be co-mingled (mixed together) and then taken to a Recycling and Transfer Station for recycling; and 3) collecting metal scraps for recycling either through drop off at one of four District sites or when there is a one-time need for collecting large amounts of metal scraps, having a recycling company drop off a temporary metal scrap bin, that they will remove when the bin is full.

To monitor solid waste in District parklands park staff is to coordinate all trash, compost and recycling collection volumes and submit this data for tracking.

Transfer and Recovery Stations and Landfill Sites

RecycleSmart owns the Keller Canyon Landfill (operated by Republic Services) near Pittsburg. The Acme Landfill in Pacheco is privately held. RecycleSmart also owns the Contra Costa Transfer and Recovery Station. The Contra Costa Transfer and Recovery Station has evolved in response to state laws requiring fifty percent waste recovery from landfills. Materials are brought daily to the Contra Costa Transfer and Recovery Station for processing in one of four specific operations: 1) construction and demolition recycling; 2) green, wood waste and residential food scrap recycling; 3) residential single-stream recycling; and 4) municipal solid waste. This transfer station is permitted to receive up to 1,900 tons of material per day. Municipal solid waste is transported to the Keller Canyon Landfill.

The Keller Canyon Landfill includes 244 acres permitted for disposal and currently handles approximately 3,500 tons of waste per day, with an average of approximately 2,700 tons per day in 2014. Construction and demolition wastes and yard debris are transported to the Acme Landfill. The Acme Landfill includes 109 acres permitted for disposal and currently handles approximately 1,500 tons of waste per day.

As funding and staffing resources allow, the District is in the process of installing trash disposal areas that can accommodate multiple, animal-proof cans promoting responsible waste management, including recycling and composting in accordance with the District's sustainability policy. To date the District currently has 433 recycling containers in 42 parks, visitor centers and trails collecting cans and bottles. These containers are very popular and well used with many tons of material diverted from landfills and reused. The District's goal is to have a recycling and composting container in every picnic area so that every park user can recycle and compost.

Preserve Sub-area – On-site Infrastructure

Existing Features

Existing structures within the Preserve sub-area include: a visitor pavilion with restrooms, a backpack camp, two security residences, and a park office. Site infrastructure includes paved parking areas, natural surface, narrow and ranch road trails, various grazing infrastructure including a corral, water troughs, fencing, and one Pacific Gas & Electric Co. (PG&E) 115kV high voltage transmission line suspended from large towers varying from 90 to 120 vertical feet in height that crosses the Preserve sub-area north of the park entrance along Grizzly Peak Boulevard. The Preserve sub-area also contains labyrinths created from local rock at the bottom of the remnant quarry pits.

Water

The residence near the Robert Sibley Volcanic Regional Preserve entrance is supplied with potable water from an EBMUD three-quarter -inch metered line on Grizzly Peak Boulevard, as are the drinking fountain and two fire hydrants located in the Sibley Main Staging Area. The Sibley park staff office and residence at the terminus of Old Tunnel Road is serviced by a second EBMUD water meter located on Grizzly Peak Boulevard. From there the water is piped to the residence.

Sewage

The existing restrooms located at the Main Sibley Staging Area, both park security residences, and the park office are connected to septic systems. The septic system serving the Sibley Main Staging Area residence and the interpretive pavilion is operational after recently completed repairs. The septic system serving the park residence and park office off Old Tunnel Road was inspected, tested, updated and serviced in 2015. The system is currently in proper working order. The backpack camp area includes a vault toilet. The septic systems and vault toilet are serviced by the District Sanitation Department. Routine maintenance of the restrooms facilities is provided by Park Operations staff.

Gas and Electrical

Electrical service is provided by PG&E along with AT&T and local cable services via a combination of underground and overhead transmission lines.

Western Hills Sub-area – On-site Infrastructure

Existing Features

Features in the Western Hills sub-area that will be in place when the land is transferred to the District, include the Red-tailed Hawk Staging Area at the southern terminus of Wilder Road. Site infrastructure includes narrow and ranch road trails, various grazing infrastructure including a corral, water troughs, and fencing. The Western Hills sub-area contains four sets of parallel 115kV power lines that cross the space east-to-west suspended from large towers varying from 90 to 120 vertical feet in height.

Water

The Red-tailed Hawk Staging Area restroom is to be supplied with potable water from an EBMUD metered line. Water troughs to support grazing are to be supplied from on-site wells and municipal sources, as appropriate to the specific site.

Sewage

The Red-tailed Hawk Staging Area will be connected to the City of Orinda sanitary sewer system. The line runs along Wilder Road. The sewer line services the Wilder Subdivision, as well as the staging area. Routine maintenance of the restroom would be provided by Park Operations staff when transferred to the District.

Solid Waste

When management of the Red-tailed Hawk Staging Area is transferred to the District, solid waste at this staging area will be managed in accordance with the District's sustainability policy like other District staging areas. Consistent with other staging areas in the Project area, staff will collect the solid waste from this staging area and bring it back to the service yard where, in accordance with the contract with the District, Republic Services is responsible for the collection, transfer, and disposal of garbage, recycling, and organics.

Gas and Electric

Electrical service is provided by PG&E via underground transmission lines as are AT&T and local cable company services. There is no gas service to the Western Hills sub-area.

McCosker Sub-area

Existing Features

Existing facilities in the McCosker sub-area include: a residence, an equipment storage shed, vacated sub-grade fuel storage tanks, and various remnants of a former construction and rock crushing business.

Site infrastructure includes a parking area, ranch road trails, and various grazing infrastructure including a corral, water troughs, and fencing. Two sets of PG&E 115kV high voltage transmission lines suspended from large towers varying from 90 to 120 vertical feet traverse the McCosker sub-area from southwest to northeast.

Water

The McCosker sub-area contains wells, springs and storage tanks that provide potable and non-potable water to service the residence and livestock needs.

Currently, water from a spring in the northern portion of the sub-area is routed to a 4,500-gallon polypropylene storage tank located near the spring. In August 2016 the overflow from this tank was approximated at 3,500 gallons per day. Water from the storage tank is gravity fed to a 5,000-gallon storage tank near the park residence. This tank supplies water to the residence via a piped connection to an 85-gallon contact tank. The water is treated with chlorine at the on-site treatment system that was installed in the basement of the residence by District staff in 2012.

A second spring is located on the west side of Pinehurst Road. Water from this spring is piped to a pumphouse that contains a 10,000-gallon storage tank. This water is not treated.

Water troughs to support grazing are supplied from the two springs discussed above.

Sewage

The residence is connected to an on-site septic system installed prior to 1969. This system was updated and the leach field was tested in 2012 and found to be in proper working order.

Gas and Electric

Electrical service is provided by PG&E via overhead transmission lines to the residence. As there is no electrical service in the proposed recreation development area, staff currently uses a generator to meet their electrical needs at the equipment shed. AT&T and local cable companies also use the utility poles to provide connections to the park residence.

There is no gas service to the McCosker Sub-area. Propane gas tanks meet the heating and cooking needs at the park residence.

3.17.3 Research Methodologies

In accordance with CEQA, this analysis of utilities and service systems included a review of: laws and policies relating to existing site services, a review of site-specific information determined through site reconnaissance, interviews with operations staff and facility providers, a title search of water rights, and a review of conceptual design information.

3.17.4 Significance Thresholds

CEQA Significance Criteria

Based on CEQA Guidelines Appendix F Energy Conservation and Appendix G Section XVIII, the project impact analysis considered the following:

Appendix F Energy Conservation

1) *The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal.*

2) *The effects of the project on local and regional energy supplies and on requirements for additional capacity.*

3) *The effects of the project on peak and base period demands for electricity and other forms of energy.*

4) *The degree to which the project complies with existing energy standards.*

5) *The effects of the project on energy resources.*

Appendix G Section XVIII

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Criteria and Thresholds with No Impact or Not Applicable

Due to the nature of the Project, there would be no impact related to the following topics for the reasons described below.

g) ***Statutes and regulations related to solid waste***. In accordance with the District sustainability policy that took effect on April 22, 2009, the District seeks to voluntarily comply with the California Waste Management Act of 1989 and the County of Alameda Waste Reduction and Recycling Act of 1990 (Measure D), and to: apply the State of California and Alameda County principles of waste reduction, reuse and recycling; conservation of energy and natural resources; and reduction or elimination of toxic materials in the park environment, support for strong recycling markets, and cost effectiveness. Therefore, this criterion is not discussed further in this EIR.

3.17.5 Impact Analysis

Impact UTI-1: The Project would not exceed local and regional energy supplies, adversely affect effect peak and base period demands for electricity and other forms of energy to meet additional capacity (Less than Significant).

This discussion focuses on energy use during the operation of the proposed Project facilities. Refer to *Section 3.3, Air Quality* and *Section 3.16, Transportation and Traffic* for a discussion of energy use related to transportation.

Preserve Sub-area

Electrical service is provided by PG&E via a combination of underground and overhead transmission lines. Parking lot expansion at the Sibley Main Staging Area and Old Tunnel Road would add to the electrical demand to service vehicle charging units. The source would be from an existing supplier, PG&E. Use of the charging units is anticipated to be short term and intermittent, not requiring substantial additional capacity from local or regional energy suppliers or having a substantive effect on energy demand at peak or baseline periods.

Western Hills Sub-area - Operations

Electrical service is provided by PG&E via underground transmission lines. There is no gas service to the Western Hills sub-area. As use of this site as a staging area was included in the *2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05,* energy consumption at this site was previously considered as part of the overall development of the Wilder development project.

McCosker Sub-area

Electrical service is provided by PG&E via overhead transmission lines to the residence. There is currently no electrical service in the proposed recreation development area; staff currently uses a

generator to meet their electrical needs at the equipment shed. Propane gas tanks meet the heating and cooking needs at the park residence. The Project would add to the electrical demand to service vehicle charging units, operate the water treatment system and operate tools in the equipment shed used to maintain park facilities. Electric demand associated with water usage and charging electrical vehicles would typically be limited to use during activities associated with camping and interpretive programs. Use of electrical tools would also be periodic and short-term.

As the uses at each of the sub-areas would be short term and intermittent, no new night lighting installations would be required, and alternative energy sources, such as solar would be incorporated, where feasible and appropriate, the proposed Project actions would not require substantial additional capacity from local or regional energy suppliers or have a substantive effect on energy demand at peak or baseline periods. As such, the Project would not exceed local and regional energy supplies, adversely affect effect peak and base period demands for electricity and other forms of energy to meet additional capacity. Therefore, new demand on energy would be *less than significant* and *no mitigation is required.*

Mitigation: None required.

Impact UTI-2: The Project would comply with existing energy standards (Less than Significant).

This discussion focuses on compliance with energy standards during the operation of the proposed Project facilities. Refer to *Section 3.3, Air Quality* and *Section 3.16, Transportation and Traffic* for a discussion of energy related to transportation.

Preserve

Installation of electrical charging units would be consistent with District goals directed at embracing use of alternative energy sources and SB50, which established a requirement to reduce petroleum use in cars. Distributing these stations at the various access points around the Project area would help to promote smart mobility encouraging park visitors to consider using electric vehicles when visiting parks, thereby reducing their reliance on fossil fuels.

Western Hills Open Space

Development of the Red-tailed Hawk Staging area was included in the *2004 Second Supplemental EIR for the Montanera Project* and *City of Orinda Resolution 13-05* and the design of the facility is undergoing City review. As such, it is being designed to comply with City of Orinda energy standards.

McCosker

Electrical and communications services would be developed to meet recreation and maintenance needs. These utilities would be connected to the existing, on-site utility infrastructure. This would involve undergrounding approximately 1,100 linear feet of existing overhead power and communication lines. Burying the utility lines would serve to remedy the undesirable aesthetics of the poles, erosion of the pole bases, and conflicts with the proposed creek restoration and

recreation site development activities. Prior to initiating excavation work, Underground Service Alert (USA) would be contacted for verification of the location of any underground utility lines in the work area.

Installation of electrical charging units would be consistent with District goals directed at embracing use of alternative energy sources and SB50, which established a requirement to reduce the petroleum in cars. Distributing these stations at the various access points around the Project area would help to promote smart mobility encouraging park visitors to consider using electric vehicles when visiting parks thereby reducing their reliance on fossil fuels.

Project Area-wide - Trails

Construction of narrow, approximately four-foot-wide, single use and multi-use trails would require use of mechanized tools, but no energy use for trail activities.

Consistent with supporting strategies for *Objective 6: Climate Adaptation and Resiliency*, the Project would incorporate alternative energy sources such as solar into the design of facilities in the Recreation/Staging Units, where feasible and appropriate in conformance with existing energy standards. As the Project would comply with SB50 and District policies directed at energy savings, impacts associated with energy standards would be *less than significant*. Therefore, no mitigation is required.

Mitigation: None required.

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a, b, e) Impact UTI-3: The Project would not require or result in the construction of new wastewater treatment facilities or exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (Less than Significant).

Preserve Sub-area

Wastewater generation is currently associated with the park residences, park office, and public restroom. Wastewater flows from these sources to a septic tank and then to a leach field. This subsurface wastewater disposal facility serves to remove contaminants and impurities from the liquid that emerges after anaerobic digestion in a septic tank.

The septic system serving the park residence and park office off Old Tunnel Road was inspected, tested, updated and serviced in 2015. The system is currently in proper working order. As such no changes are anticipated for this system.

The current septic system at the Sibley Main Staging Area that serves the residence and the restrooms has recently been repaired. This system, along with other septic systems in the District will continue to be monitored by the District Sanitation Department. When the system nears the end of its lifecycle, an engineering study would be undertaken to determine the appropriate type of treatment system and the location for a new leach field. This leach field is anticipated to cover an approximate one-acre site and would likely to require removal of some trees in this generally wooded area. When this system is replaced, the added parking improvements and any noticeable

increase use would be taken into consideration. As the current system is still functioning and the added use from the additional parking spaces is expected to be minimal, development of a replacement system is beyond the scope of this Project.

The minimal wastewater generated from cooking, dishwashing, and personal grooming activities that would be associated with the water that would be supplied from the proposed water tank installation would be directed to an unlined gravel bed for infiltration. Waste from the precast sealed vault toilets is contained within the sealed vault until it is removed by District staff on a regular schedule. Based on similar systems in the area (e.g., Inspiration Point and Las Trampas) a vault toilet that holds 1,000 gallons per vault (2 vaults), is pumped approximately four times a year.

No other wastewater generation is anticipated for the Preserve sub-area.

Western Hills Sub-area

Wastewater generated at the Red-tailed Hawk Staging Area from restroom usage would flow into the City sanitary sewer system previously permitted as part of the Wilder residential development. Runoff from watering horses and facility maintenance would drain to an on-site stormwater treatment feature reviewed and permitted by the City of Orinda.

McCosker Sub-area

The park residence is connected to an on-site septic system installed prior to 1969. This system was updated and the leech field tested in 2012 and found to be in proper working order. This system will remain in place. None of the new improvements will be tied into this system.

Wastewater generation at the Fiddleneck Field recreation area would be limited to the grey water generated from cooking, dishwashing, and personal grooming activities. Greywater generated from these uses would be directed to an unlined gravel bed for infiltration, which may be planted with wetland plants. No wastewater generation is anticipated for the Fern View Terrace picnic site.

Two precast sealed vault toilets would be incorporated into the Project design for the Fiddleneck Field recreation area. These structures would be sited to accommodate ADA requirements for access and service by the District Sanitation and Recycling Department. Waste would be contained within the sealed vault until it would be removed by pumping. The waste would be pumped from a manhole located on the exterior of the building into a District collection vehicle by District staff on a regular schedule. Based on similar systems in the area (e.g., Inspiration Point and Las Trampas) a vault toilet that holds 1,000 gallons per vault (2 vaults), is pumped approximately 4 times a year.

Project Area-wide - Trails

The Project would include construction of narrow, approximately four-foot-wide, single use and multi-use trails providing shorter loops and connections to longer, region-wide trails, including the Skyline Trail, and regional trails identified in the District Master Plan throughout the Project area. Trail use activities associated with new and established trails would not require development of wastewater systems.

The Project would not include the development of any new wastewater systems, nor add substantially to wastewater generation at any existing, on-site wastewater treatment facility, nor create a demand to tie into any existing off-site wastewater systems. The Project would likely require refurbishment or replacement of the existing system at the Sibley Main Staging Area as this facility reaches the end of its expected lifecycle. As such it would provide an opportunity to recalculate the capacity to accommodate any potential increases in demand. This would be in keeping with District Best Management Practices which include: routine testing of on-site facilities, consideration of the lifecycle of such facilities, and planning for their replacement and/or upgrade as required to meet growing use demands and to maintain the facilities to current health and safety standards. As a result, impacts to wastewater systems would be *less than significant* and no mitigation would be required.

Mitigation: None required.

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b) Impact UTI-4: The Project would require the construction of new water treatment facilities and expansion of existing facilities, the construction of which could cause significant environmental effects.

Preserve Sub-area

Project activities in the Preserve sub-area would include installation of a 1,000-gallon water tank at the existing backpack camp to meet the periodic and limited water usage needs for drinking, cooking, dishwashing, and personal grooming activities associated with camping activities for this campsite that has a vault toilet restroom and no showers. This would amount to approximately 10 gallons/per day/per visitor per day or 150 gallons/day when the camp is at operating at full capacity, which is 15 campers. The tank would be installed on a concrete pad of sufficient strength to support the tank. It would be serviced by one of the District's 1,300-gallon capacity water trucks. The water would come from a District potable water source for which the District has existing water rights. While the water trucks are tested on a routine basis to ensure the tanks meet water quality standards, a sign would be posted on the backpack water tank recommending that park visitors treat the water before using it.

Western Hills Sub-area

When transferred to the District, the Red-tailed Hawk Staging Area will include water service from a municipal source previously permitted as part of the Wilder residential development. Water use will be for the flush toilets, sinks and drinking fountains, and facility maintenance (*2004 Second Supplemental EIR for the Montanera Project).*

McCosker Sub-area

Improvements in the McCosker sub-area would include development of: 1) Fiddleneck Field, a combined group camp and interpretive program area, that would incorporate: installation of prefabricated toilets: a water line, 4,000-gallon tank and water treatment facility; an informal meadow area for rustic camping, a shade pavilion for picnic and interpretive program activities, a fire ring, and a cook area; and 2) Fern View Terrace picnic area at an existing terraced site. Up to six service connections would be incorporated into the design to accommodate: 1) visitor

camping and interpretive program needs; 2) staff service needs; and 3) water storage for fire suppression purposes in an emergency.

Approximately 3,200 linear feet of water line would be installed to service the proposed Fiddleneck Field recreation area. The water source would be a natural spring in the northern portion of the sub-area that produces approximately 3,500 gallons per day. The new water line would extend from the existing 4,500-gallon, covered, storage tank to a new, 4,000-gallon storage tank. The water would be treated at an on-site facility located near or above Fiddleneck Field recreation area.

The new potable water system for the recreational development at Fiddleneck Field would be installed concurrently with other work on the recreational infrastructure. The water line would follow existing ranch roads, where feasible, and traverse undisturbed vegetated areas for portions of the alignment. The pipe trench would be approximately 18 inches wide and would be dug to a depth of up to three feet. The water tank and treatment system would be set on a concrete pad of adequate thickness to support the weight of a full 4,000-gallon tank.

In addition to servicing recreation needs, this tank would augment water sources for fire suppression providing fire and visitor safety protection commensurate with the increased recreation development in a wildland-urban interface area.

The potable water system would be designed to meet the requirements of the Contra Costa County Ordinance code 414-4.4 for small water systems. The system would supply water for to up to 50 overnight visitors with a maximum demand of 55 gal/person/day, while typical use would likely be about 34 visitors per overnight camping or interpretive event based on District use patterns for similar facilities in this region. Moreover, as the sanitary facilities would be comprised of sealed vault toilets and there would be no bathing facilities, actual water demand is expected to be well below the design capacity even when the site is at maximum visitor capacity. *Table 3.17-5, Design Criteria for Water System* lists the design criteria for the system.

TABLE 3.17-5
DESIGN CRITERIA FOR WATER SYSTEM

Design Criteria	Value
Maximum Daily Demand	2,750 gal/day
Peak Hour Demand	2.9 gal/min
Average Daily Demand	1,800 gal/day
Average Residence Time	1.5 days

The existing pumphouse structure located near the Pinehurst Road would be removed, while the 10,000-gallon, spring-fed tank that produces approximately 21,000 gallons per day would be retained and secured for safety and to prevent vandalism. This water source would be used as a source of irrigation water to assist in establishing plants in the restoration areas during the dry season. Water conservation measures would be incorporated into the irrigation system design in compliance with Assembly Bill (AB) 325 Model Water Efficient Landscape Ordinance.

The construction of new water systems would use on-site, spring-fed sources for which the District has water rights. Added water usage would be tied to: 1) drinking, cooking and dishwashing, and personal grooming activities associated with camping activities; 2) periodic use by staff to maintain the recreation facility; and 3) a temporary irrigation system designed to comply with AB 325 that would be installed to establish plants in the riparian corridor and trees in the developed recreation area. As such, new demand on the existing water supply, including water to service the existing grazing program, the park residence and EBMUD's existing livestock water trough, is not anticipated to compromise existing service needs.

Project Area-wide - Trails

Trail work areas would not be irrigated during or following construction. Planting and seeding to reestablish disturbed areas resulting from implementing the trail improvements would occur in the fall prior to the winter rain season when normal rainfall would provide the necessary water for plant establishment.

Trail use activities associated with new and established trails would not require development of water systems. Where drinking water is available within Recreation/Staging Units at the perimeter of the Project area, it is tied to existing springs or municipal sources that the District has title and/or rights of use as described above.

As the proposed improvements for the McCosker sub-area are not anticipated to exceed the capacity of existing water supply sources for which the District has rights and the system would be designed to meet the requirements of Contra Costa County Code 414-4-4, potential impacts related to the development of new water treatment systems in this location would be *less than significant* and no mitigation measures would be required. Likewise, installation of the water tank at the Sibley backpack camp and the trail development improvements would not require mitigation. Water use at the Western Hills sub-area staging area was previously permitted as part of the Wilder residential development (*2004 Second Supplemental EIR for the Montanera Project*). As a result, impacts associated with the development of new water supply systems would be *less than significant* and no mitigation would be required.

Mitigation: None required.

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c) Impact UTI-5: The Project would include added impervious areas requiring the construction of new storm water drainage facilities.

Preserve Sub-area

Modifications to the existing Sibley Main Staging Area would expand the existing parking capacity from 38 spaces to approximately 73 spaces. The expanded area would result in the addition of approximately 2,946 square feet of compacted gravel surface in an area that is currently vegetated, requiring development of a stormwater treatment feature.

Improvements at Old Tunnel Road would involve repairing and repaving 1,100 feet linear feet of an existing service road and parking area. The paving work would involve grinding up the

existing pavement in place, and paving over the top of it. This work would not alter the amount of impervious area at the site. The 272-foot restroom and access pad surrounding the restroom facility would add approximately 675 square feet of impervious areas to the Old Tunnel Road site.

Over the short-term, grading activities involved to implement these improvements, could have construction related impacts to water quality. Long-term, accumulated water quality impacts may be related to potential increases in vehicles, horses, and park and trail users. Trash, oil/grease, and animal waste are the common pollutant sources related to the proposed parking lot improvements.

Stormwater and anticipated pollutant sources originating from the parking area improvements during and post construction would be addressed in accordance with the Regional Water Quality Control Board Storm Water Pollution Prevention Plan (SWPPP) requirements and District technical specifications, including implementation of appropriate Best Management Practices for minimizing potential erosion, sedimentation and pollutant transport during and post construction.

During construction these measures may include, as appropriate to the site conditions: 1) conducting activities during the dry season; and 2) using dikes, basins, ditches, straw, erosion control fabric, and other temporary measures (e.g., water bars, fiber rolls).

Post-construction transport of contaminant pollutants as a component of stormwater run-off would be contained through: 1) routine maintenance of the parking areas, and 2) development of drainage control features designed to meet NPDES MS4 requirements.

Western Hills Sub-area

No impervious improvements are planned for the Western Hills sub-area beyond the Red-tailed Hawk Staging Area previously permitted as part of the Wilder residential development (*2004 Second Supplemental EIR for the Montanera Project*). This staging area design includes stormwater treatment facilities consistent with RWQCB requirements. Once transferred to the District potential pollutant contaminate sources would be further reduced through routine maintenance of the facility by District staff.

McCosker Sub-area

Improvements in the McCosker sub-area would involve improvements to existing roadways, both paved (approximately 410 linear feet) and all-weather gravel surface ranch roads (approximately 1,840 linear feet). These improvements would not alter the amount of impervious area at the site.

Circulation improvements in the McCosker sub-area would include three crossings of Alder Creek: 1) Ninebark Public Vehicle Bridge 2) Fern View Terrace Maintenance Vehicle Bridge, and 3) Alder Creek Maintenance Vehicle Bridge. The three structures would be designed as arched bridges with natural creek bottoms. These improvements would be installed as part of the overall creek restoration project that would involve removing culverts buried in fill, thereby restoring natural stormwater drainage patterns within the riparian zone.

The combined group camp and interpretive program area in Fiddleneck Field would be designed as an informal meadow. The creation of this meadow area from on-site fill material would result in no net increase in impermeable area. The development of the pavilion – equipment storage area would comprise approximately 1,600 square feet of existing impervious area. Other proposed recreation facility features would result in a net increase in impermeable area from the vault toilets (1,350 square feet), campfire ring (700 square feet), ADA parking area (600 square feet), and concrete pad for the 4,000-gallon water tank (100 square feet), totally approximately 2,750 square feet of impermeable area.

Development at the Fern View Terrace would be limited to individual picnic tables installed on graded pads and interpretive panels. Installation of compacted gravel picnic pads and interpretive panels would not add to the impermeable surface area at this site.

The creek restoration work would involve removal of approximately 2,720 linear feet of buried culverts ranging in diameter from 12 inches to 60 inches and concrete debris to create an open creek channel that would improve watershed system flows during a storm event.

Stormwater originating from the McCosker public access and recreation facility improvements would be addressed in accordance with the Regional Water Quality Control Board SWPPP requirements and District Technical Specifications, including implementation of appropriate Best Management Practices for minimizing potential erosion and sedimentation during and post construction.

During construction these measures may include, as appropriate to the site conditions: 1) conducting activities during the dry season; and 2) using dikes, basins, ditches, straw, erosion control fabric, and other temporary measures (e.g., water bars, fiber rolls).

Post-construction transport of contaminant pollutants as a component of stormwater run-off would be contained through: 1) routine maintenance of the parking areas, and 2) development of drainage control features designed to meet NPDES MS4 requirements.

Project Area-wide - Trails

The Project would include single use and multi-use trails providing shorter loops and connections to longer, region-wide trails, including the Skyline Trail, and regional trails identified in the District Master Plan. Trail construction would involve development of narrow trails approximately four feet wide. The trail surface would consist of compacted native soils. The trails would be designed to slope to the outside edge of the trail. This would allow water to sheet flow off the trails and would minimize water flows concentrating and collecting sediments within the trail infrastructure. Drainage crossings would be reinforced with native rock in manner that would retain natural hydrologic functions. Trail realignments would be constructed in the same way and closure and restoration of existing alignments would similarly address natural site drainage functions. Trail uses changes would not involve alterations to the permeability of trail surfaces. Therefore, construction of new, natural surface, narrow trails would not require construction of new stormwater drainage facilities or expansion of existing facilities.

As the proposed improvements would be required to comply with Regional Water Quality Control Board Storm Water Pollution Prevention Plan (SWPPP) requirements and District Technical Specifications pre-construction and post construction, potential impacts related to stormwater discharge would be *less than significant* and no mitigation measures would be required.

Mitigation: None required.

Impact UTI-6: The Project would have sufficient water supplies available to serve the project from existing entitlements and resources.

Preserve Sub-area

Project activities in the Preserve sub-area would include installation of a 1,000-gallon water tank at the existing backpack camp to meet the periodic and limited water usage needs for drinking, cooking, dishwashing, and personal grooming activities associated with camping activities for this campsite that has a vault toilet restroom and no showers. This would amount to approximately 10 gallons/per day/per visitor per day or 150 gallons/day when the camp is at operating at full capacity, which is 15 campers. The water would come from a District potable water source for which the District has existing water rights and trucked to the site in one of the District's water trucks. Thus, demand on the existing water supply would not be expected to increase substantially and the proposed improvements would not require new or expanded water supply entitlements, or result in unforeseen demands on existing water sources.

Western Hills Sub-area

The Red-tailed Hawk Staging Area will be tied into municipal water and sanitary sewage lines previously permitted as part of the Wilder residential development. Water troughs to support grazing would be supplied from on-site wells and municipal water sources (*2004 Second Supplemental EIR for the Montanera Project)*. Thus, the proposed improvements would not require new or expanded water supply entitlements, or result in any unanticipated demands on existing water sources.

McCosker Sub-area

Water supply needs for the Project would be met by two springs located on District lands for which the District retains rights. The Project would include installation of approximately 3,200 linear feet of water line from an on-site spring to a storage tank and on-site treatment facility to provide a potable water supply to meet the recreation needs at the Fiddleneck Field recreation area. This system would be designed to supply water to up to 50 overnight visitors with a maximum demand of 55 gal/person/day, while typical use would likely be about 34 visitors per overnight camping or interpretive event based on District use patterns for similar facilities in this region. Moreover, as the sanitary facilities would be comprised of sealed vault toilets and there would be no bathing facilities, actual water demand is expected to be well below the design capacity even when the site is at maximum visitor capacity. *Table 3.17-5, Design Criteria for Water System* lists the design criteria for the system.

A second spring that is located on the west side of Pinehurst Road is piped to a pumphouse that contains a 10,000-gallon storage tank. This water, which is not treated, would service the irrigation system to assist in establishing plants in the restoration areas during the dry season.

These existing water sources are anticipated to meet Project water supply demands. Thus, the proposed improvements would not require new or expanded water supply entitlements, or result in significant demands on existing water sources. As the Project would limit water usage to water supplied from established springs for which the District has entitlements, Project improvements in the McCosker sub-area are not anticipated to have an impact on other public or private water entitlements. Additionally, proposed expansion of existing water systems to meet Project needs is not anticipated to compromise existing use requirements. Moreover, the development of a new 4,000-gallon storage tank at Fiddleneck Field would enhance fire suppression capabilities in this sub-area.

Project Area-wide - Trails

Trail construction and trail use would not require new or expanded water supply entitlements, or result in any new demands on existing water sources. Therefore, the proposed trail improvements would not have an impact on water entitlements or supplies.

As, implementation of the Project improvements, including expansion of new water lines to serve existing and new facilities, would not have an impact on other public or private water entitlements and development of these water systems is not anticipated to exceed the capacity of existing District spring or municipal water supply sources, implementation of the Project would have a *less than significant* on water resources and no mitigation measures would be required.

Mitigation: None required.

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f) Impact UTI-7: Project implementation would generate a substantive quantity of solid waste that would need to be deposited at a landfill facility.

Construction

Preserve Sub-area

Construction of the Main Staging Area improvements would involve vegetation removal, including eucalyptus, bay and sycamore trees and approximately 11,032 square feet (0.25 acres) of shrub vegetation, predominately poison oak and coyote brush and various ruderal species. This vegetation would be removed from the site to a composting site in accordance with the District's sustainability policy.

Western Hills Sub-area

No construction of facilities is anticipated for the Western Hills sub-area.

McCosker Sub-area

Approximately 34 trees would be removed to allow for creek channel creation. About half of the trees that would be removed would be incorporated into the creek channel design to establish in-channel stabilization features.

Green waste generated from clearing and grubbing the areas proposed for grading could be retained on site and be used to enhance habitat, stabilize slopes and improve soils or be removed from the site to a composting site in accordance with the District's sustainability policy, as determined appropriate during the development of the design plans.

Approximately 2,720 linear feet of metal culverts and concrete debris from the creek restoration project would be excavated and collected for reuse or taken off-site in compliance with the District's Sustainability Policy, along with six underground storage tanks, including four 20,000-gallon tanks and two 10,000-gallon tanks that were used to contain diesel fuel remaining from the prior owner's construction business. This would equate to approximately 273 tons of construction waste over the anticipated two-year construction period for the McCosker sub-area improvements as shown in *Table 3.17-6, Materials Anticipated to be Removed from Project Site* which provides an itemized account of the metal and concrete material that would be removed from the Project area during construction.

The Contra Costa Transfer and Recovery Station is permitted to receive up to 1,900 tons of material per day. Construction and demolition wastes and yard debris are transported from this site to the Acme Landfill. The Acme Landfill includes 109 acres permitted for disposal and currently handles approximately 1,500 tons of waste per day. While waste generated from the construction of project improvements would be well within the range of what the Acme Landfill could accommodate, and the District has initiated a Sustainability Policy directed at reducing waste through several waste reduction strategies, the Project would involve a substantive quantity of solid waste material during construction, *requiring mitigation.*

Project Area-wide – Trails

Implementation of the Project trail improvements would not be expected to increase solid waste generation as trail construction would be implemented such that soil cut and fill would be balanced and vegetation removal would be minimized.

Post Construction

Approximately eighty percent of the waste collected in the Project area is generated from use at the Recreation/Staging Units. While the quantity of solid waste is anticipated to increase with implementation of the improvements in the McCosker sub-area and the District taking on the responsibility for Red-tailed Hawk Staging area, the District has established several waste recycling strategies to reduce overall solid waste. As such, increased visitor use is not expected to exceed the current contract conditions with Republic Services, which include collection of one, four-cubic yard bin of solid waste once a week. In the long-term, should operations be facilitated by providing a separate bin at the McCosker sub-area, this could be arranged with the collection services contractor without substantially adding to solid waste generation in the Project area.

TABLE 3.17-6
MATERIALS ANTICIPATED TO BE REMOVED FROM PROJECT SITE

McCosker Demo - Based on 65% Drawings — 6/21/2018

ITEM TYPE	ITEM NAME/NUMBER	DIMENSION	QUANTITY	Unit	Unit Weight	Weight
PIPE	Culvert A-01	60-inch RCP	209.1	LF	1125	235,218
	Culvert A-02	60-inch CMP	56.6	LF	75	4,242
	Culvert A-03	48-inch CMP	203.4	LF	60	12,204
	Culvert A-04	48-inch CMP	773.4	LF	60	46,405
	Culvert A-05	54-inch CMP	21.3	LF	67	1,425
	Culvert A-06	48-inch CMP	70.7	LF	60	4,240
	Culvert A-07	18-inch CMP	53.2	LF	20	1,063
	Culvert A-08	18-inch CMP	51.4	LF	20	1,028
	Culvert A-09	18-inch CMP	35.4	LF	20	708
	Culvert A-10	24-inch CMP	87.4	LF	30	2,622
	Culvert A-11	24-inch CMP	48.4	LF	30	1,452
	Culvert A-12	18-inch CMP	77.9	LF	20	1,558
	Culvert E-01	30-inch CMP	80.2	LF	36	2,888
	Culvert E-02	24-inch CMP	149.7	LF	30	4,491
	Culvert E-03	36-inch CMP	223.1	LF	45	10,041
	Culvert E-04	18-inch CMP	69.5	LF	20	1,390
	Culvert E-05	8-inch CMP	37.9	LF	7	265
	Culvert E-06	12-inch CMP	8.6	LF	15	129
	Culvert L-01	36-inch CMP	126.0	LF	45	5,670
	Culvert L-03	30-inch CMP	130.5	LF	36	4,698
	Culvert L-04	18-inch CMP	5.8	LF	20	115
	Culvert W-01	60-inch CMP	202.6	LF	75	15,193
	Alder Mainstem Subtotal		1334	LF		
	Alder West Branch Subtotal		203	LF		
	Alder East Branch Subtotal		453	LF		
	Leatherwood Subtotal		256	LF		
	Misc Culverts Subtotal		475	LF		
	Total Culvert Demo		2722	LF		
HEADWALL	1	15' x 1' x 5'	80	CU FT	150	12,000
	2	12' x 1' x 7'	90	CU FT	150	13,500
	3	10' x 1' x 6'	60	CU FT	150	9,000
	4	20' x 0.5' x 10'	100	CU FT	150	15,000
RETAINING WALL	1	80x2x1	160	CU FT	150	24,000
JUNCTION BOX (6" THICK WALL)	1	5.5' x 8' x 3'	40	CU FT	150	6,000
	2	4' x 6' x 3'	25	CU FT	150	3,750
	3	6' X 12.5' x 4'	70	CU FT	150	10,500
	4	9' x 7' x 5'	70	CU FT	150	10,500
	5	4' x 7' x 2.5'	25	CU FT	150	3,750
UNDERGROUND STORAGE TANKS		20,000 GAL	4		15500	62,000
		10,000 GAL	2		8500	17,000
WATER LINE	PVC PIPE	2-4"	800	LF	2.6	2,080
	WHARFHEAD HYDRANT	-	1		300	300
					Total Weight (ton)	273

Demo Items: Pipes based on 3/21/18 GIS file. Other items based on Demo plan 65% design

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Mitigation Measure UTL-1: Solid Waste Disposal during Construction

Prior to completion of the plans and specifications, the District shall review the plans to ensure that they include a solid waste recovery plan. This recovery plan shall be in compliance with the District's adopted sustainability policy, which is directed minimizing disposal of solid waste generated during construction in accordance with applicable state and county codes. The recovery plan shall address, at a minimum, recycling of asphalt and concrete paving materials, lumber and metal and concrete pipes and tanks, and balancing graded soil on site to the maximum extent feasible.

Significance after Mitigation: *Less than Significant*.

3.17.6 Cumulative Effects

Geographic Extent/Context

Solid waste collection services would be provided by the Central Contra Costa Solid Waste Authority (CCCSWA), doing business as RecycleSmart. They are also responsible for the collection, transfer, and disposal of residential and commercial garbage, recycling, and organics in the cities of Lafayette, Orinda, Walnut Creek, and town of Moraga and surrounding unincorporated communities of Contra Costa County. This company owns and operates the Keller Canyon Landfill near Pittsburg, the Acme Landfill in Pacheco and the Contra Costa Transfer and Recovery Station.

Increased water use from the Project activities would come from existing on-site municipal and spring sources for which the District has agreements and rights respectively.

Past, Present, and Reasonably Foreseeable Projects

As a response to state laws requiring fifty percent waste recovery from landfills and the District's own sustainability policies, existing landfill facilities currently have the capacity to handle both the anticipated construction waste and post construction waste anticipated to be generated from implementing the Project without adversely impacting the solid waste demands from neighboring communities.

Water use in the Project area would be limited to:1) temporary irrigation to establish riparian vegetation in the McCosker sub-area; and 2) periodic water use during camping activities at the Preserve and McCosker sub-areas generally associated with drinking, dishwashing and personal grooming. To incorporate these uses, the water system design considered up to 3,573/gallons/day on a peak weekend with both the Sibley and the McCosker camping areas operating at full capacity, although actual water demand is expected to be well below the design capacity as the number of visitors for any camping or interpretive event would typically be lower, the sanitary facilities at both sites are comprised of sealed vault toilets, and there would be no bathing facilities. The water would be supplied at the Sibley Main camp from municipal sources (up to 150/gal/day) and McCosker Fiddleneck Field recreation area (up to 2,750/gallons/day). The water for the Sibley backpack camp would come from a District potable water source for which the

District has existing water rights, which would then be trucked to the site in one of the District's water trucks. The water for the McCosker Fiddleneck Field recreation area would come from existing on-site springs for which the District maintains water rights.

Therefore, present and reasonably foreseeable projects in neighboring communities identified in *Section 3.10 Land Use and Planning* are not anticipated to have an adverse effect on the Project. Likewise, the implementation of the Project is not anticipated to have a cumulative adverse impact on energy use, water, wastewater or solid waste on other projects in the area.

3.17.7 References

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CHAPTER 4.0
Alternatives to the Project

4.1 Introduction

This chapter presents the California Environmental Quality Act (CEQA) alternatives analysis for the proposed Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment (Project). According to the CEQA *Guidelines Section 15126.6*:

> *An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.*

The CEQA *Guidelines* recommend that an EIR briefly describe the rationale for selecting the alternatives to be discussed (CEQA *Guidelines* Section 15126.6[c]). The nature and scope of the "reasonable range of alternatives" to be discussed is governed by the "rule of reason." The goal of the alternatives analysis considers the following factors:

- The extent to which the alternative would accomplish most of the basic goals and objectives of the project;
- The extent to which the alternative would avoid or lessen the identified significant and unavoidable environmental effects of the project;
- The feasibility of the alternative, taking into account site suitability, availability of infrastructure, general plan consistency, and consistency with other applicable plans and regulatory limitations;
- The extent to which an alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice; and
- The requirement of the CEQA *Guidelines* to consider a "no project" alternative and to identify an "environmentally superior" alternative in addition to the no-project alternative.

Section 4.2.3, Approach to Alternatives Selection and *Section 4.2.4, Selected CEQA Alternatives* describe the alternatives selection process and the objectives of the Project; summarizes the significant impacts of the Project; describes the alternatives selected for detailed analysis; and compares the environmental impacts of each alternative to those of the Project. *Section 4.3, Environmentally Superior Alternative* identifies the environmentally superior alternative.

Section 4.4, Alternatives Considered, but Rejected from further Consideration discusses the preliminary alternatives that were considered, but rejected from further consideration.

4.2 Project Alternatives Analysis

This section describes the process of developing a reasonable range of Project alternatives for analysis in this EIR. Consistent with CEQA, the approach to alternatives selection for this EIR focused on identifying alternatives that: (1) could meet most of the basic objectives of the Project while reducing one or more of its significant impacts, (2) could foster informed decision-making and public participation, and (3) could be feasibly implemented. The alternatives selection process considered three alternatives, including, as required in the CEQA guidelines, The No Project Alternative. Certain alternatives were eliminated from consideration based on their inability to meet most of the Project's basic objectives, their infeasibility, or their inability to reduce the Project's environmental impacts as discussed in *Section 4.4, Alternatives Considered, but Rejected from further Consideration.*

4.2.1 Project Purpose and Objectives

As discussed in *Chapter 2, Project Description, Section 2.4.2, Project Purpose and Statement of Objectives* the Project Purpose is to:

- Append the 1985 LUPD to incorporate the Western Hills and McCosker sub-areas and developed local trails into Robert Sibley Volcanic Regional Preserve [EBRPD Resolution No. 2006-12-280 – Approval of Resolution of Intention for the Formation of Gateway Valley Zone of Benefit AB6]; and

- Preserve the rich heritage of natural and cultural resources and provide open space, trails, and safe and healthful recreation and environmental education in accordance with the District 2013 Master Plan.

The overarching goals of the Project are to:

- Maintain the natural ecology of the Project area and enhance ecosystem functioning in key locations;

- Maintain and augment existing public recreation and interpretive opportunities within the Project area; and

- Incorporate climate adaptation and resiliency strategies into creek restoration actions, recreational facility design, and program development.

These goals would be accomplished through implementation of the following objectives:

- Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat: Protect and support natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages, including habitat for special status species.

- Objective 2: Creek Restoration: Improve creek functions in the McCosker sub-area, including overall ecosystem health for native aquatic organisms, water quality protection, sediment sorting and transport, flood storage capacity, and site aesthetics.

- Objective 3: Trail Development: Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda.

- Objective 4: Recreation Facility and Interpretive Program Elements: Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including, but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural history.

- Objective 5: Operations and Maintenance: Provide facilities, equipment, and programs that facilitate staff in providing safe and enriching recreation and interpretive experiences and support habitat protection, conservation and enhancement programs.

- Objective 6: Climate Adaptation and Resiliency: Incorporate climate adaptation and resiliency strategies into the creek restoration actions, recreational facility design and material selection, and program development to provide project stability and programming that reflect an era of changing climate conditions.

To achieve the Project purpose and overarching goals, the Project includes two main components: 1) McCosker sub-area creek restoration and enhancement; and 2) recreation and public access improvements. The recreation and public access improvements include six main elements: 1) improvements to existing staging areas, 2) improvements to existing roadways, 3) bridge installation, 4) trail system expansion, 5) recreation facility development, and 6) improvements to utility infrastructure.

4.2.2 Significant Environmental Impacts

This section summarizes the impacts of the Project, as analyzed in *Chapter 3, Project Analysis* of this EIR, and that were considered during the alternatives identification process. All Project impacts were determined to be *less than significant with mitigation* (LSM), meaning that all significant Project impacts could be reduced to a less-than-significant level through the implementation of mitigation measures identified in this EIR.

Long-Term Impacts

Project operation would result in the following potentially significant and significant long-term impacts, all of which could be mitigated to a less-than-significant level with the implementation of mitigation measures identified in *Chapter 3, Project Analysis*:

- ***Aesthetics***
  - Long-term beneficial alteration of the visual character of the valley floor in the McCosker sub-area

- ***Biological Resources***

  - Permanent loss of Alameda whipsnake habitat or mortality to snakes
  - Permanent loss of California red-legged frog habitat or mortality to CRLF
  - Long-term beneficial increase in riparian woodland and aquatic environments through restoration and enhancement of riparian corridors that could support indigenous fish species, California red-legged frog, Alameda whipsnake, California newt, and other herpetofauna

- ***Recreation***
  - Long-term beneficial changes from increased recreation amenities and ancillary parking facilities in the McCosker and Preserve sub-areas and trails project-wide

Short-Term Impacts

Project construction would result in the following significant short-term impacts, all of which could be mitigated to a less-than-significant level with the implementation of mitigation measures identified in *Chapter 3, Project Analysis*:

- ***Aesthetics***
  - Temporary adverse effects on visual quality
- ***Air Quality***
  - Temporary release of particulate emissions generated by excavation, grading, hauling, and other activities
- ***Biological Resources***
  - Temporary loss of Alameda whipsnake habitat
  - Temporary loss of CRLF habitat (nonbreeding aquatic dispersal habitat in Project area)
  - Temporary disturbance/impacts to dusky-footed woodrat along proposed trail routes in woodland and shrubland communities throughout Project area.
  - Golden eagle and other nesting bird disturbance
  - Special status plant species along proposed trail routes in woodland and shrubland communities throughout Project area
  - Temporary disturbance to bats during tree removal
  - Disturbance to fish (dewatering/translocation) in McCosker sub-area/San Leandro Creek during construction activities
  - Introduction/increase of invasive species
  - Temporary impacts to wetlands associated with construction of trail drainage crossings
- ***Cultural and Tribal Resources***
  - Potential to discover unknown paleontological, pre-contact or historic-era resources, or human remains

- ***Hazards and Hazardous Materials***
  - Potentially hazardous conditions associated with site excavation activities.
- ***Public Services***
  - Disruption of parkland services during project construction activities.
- ***Noise***
  - Temporary or periodic increase in ambient noise during construction or maintenance activities
- ***Utilities***
  - Solid waste generation from Project construction activities.

4.2.3 Approach to Alternatives Selection

The alternatives selection process for the Project was guided, in part, by the magnitude and severity of the impacts identified above. Therefore, this analysis focuses on alternatives that could be implemented (i.e., are feasible), meet most of the Project objectives, and:

- Lessen or avoid long-term operational-phase impacts; and/or
- Lessen or avoid short-term construction-phase impacts.

4.2.4 Selected CEQA Alternatives

This section describes the Project alternatives that were selected and analyzed in accordance with CEQA Guidelines Section 15126.6(a). The Project considers improvements and additions to existing staging areas, recreation facility and interpretive program development largely focused on the McCosker sub-area, and trail development and use for the entire Project area.

This section also evaluates the impacts of the selected alternatives relative to those of the proposed Project. Similarly, to the Project, the alternatives analysis is largely centered on development in the McCosker sub-area and trail development Project-wide.

Since the alternatives are conceptual, the evaluation is based on the available information and reasonable assumptions about how each alternative would be implemented. For each alternative, this section presents the following:

- A description of the alternative, including the rationale for its selection, and associated improvements and auxiliary components
- An evaluation of the alternative's ability to meet Project goals and objectives
- Analysis of the environmental impacts of each alternative compared to those of the Proposed Project

The three alternatives to the Proposed Project selected for detailed analysis in this EIR are:

- **Alternative 1:** No Project Alternative
- **Alternative 2:** Day Use Focus - Minimal Improvements - Reduced Restoration
- **Alternative 3:** Day Use Focus – Parking Maximized

A description of each of these alternatives follows with summary tables. *Table 4-1, Comparison of Alternatives to the Purpose and Objectives* shows how the Project and the alternatives are in accordance, or not, with the Project objectives. *Table 4-2, Selected CEQA Alternatives* provides a brief description of the alternatives and highlights how they differ from the proposed Project. *Table 4-3, Comparison of the Environmental Impacts of the CEQA Alternatives* summarizes the environmental impacts of the selected alternatives compared to the potential significant impacts of the Proposed Project.

TABLE 4-1
COMPARISON OF ALTERNATIVES TO THE PURPOSE AND OBJECTIVES

Project Objectives	No Project Alternative	Alternative 2	Alternative 3
Objective 1: Protect and Support Natural Plant Communities and Wildlife Habitat: Protect and support natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages, including habitat for special status species.	Although, this alternative would not disrupt protected wildlife species, it ***would not meet*** the Project objective for riparian enhancement	Although, this alternative could have less disturbance on natural communities and habitat than the Project, it also ***would not fully meet*** the Project objective for riparian enhancement	Similar to the Project, this alternative could create disruption to wildlife during construction, but ***would fully meet*** the Project objective for supporting habitat protection and enhancement
Objective 2: Creek Restoration: Improve creek functions in the McCosker sub-area, including overall ecosystem health for native aquatic organisms, water quality protection, sediment sorting and transport, flood storage capacity, and site aesthetics.	***Would not meet*** the Project objective for creek restoration	***Would partially meet*** the Project objective for creek restoration	***Would partially meet*** the Project objective for creek restoration as the full length of the creek restoration would area would be completed, but there would be reduced riparian habitat benefits resulting from the installation of a culvert drainage structure for parking
Objective 3: Trail Development: Develop a trail circulation system that considers cultural resources, natural communities and ecosystem functioning, and identifies links between District lands and connections to the City of Orinda.	***Would not fully meet*** the Project objective for trail expansion, although opening existing trails in the Western Hills sub-area for public use – ***per prior analysis and permitting decisions would partially meet*** this objective	***Would partially meet*** the Project objective for trail development through opening of existing trails throughout the Project area for public use, but would not provide for any new trail development	***Would fully meet*** the Project objective for trail development

TABLE 4-1
COMPARISON OF ALTERNATIVES TO THE PURPOSE AND OBJECTIVES (CONTINUED)

Project Objectives	No Project Alternative	Alternative 2	Alternative 3
Objective 4: Recreation Facility and Interpretive Program Elements: Provide facilities for passive and active recreation that connect District residents and visitors to natural areas and cultural features in support of the mission, vision, and policies of the District's 2013 Master Plan, including but not limited to, providing camping, trail use, staging areas, and outdoor education focused on natural ecology and cultural history.	***Would not meet*** the Project objective for recreation and interpretive facility and program elements	**Would partially meet** the Project objective for recreation and interpretive facility and program elements through added opportunities for visitors to connect to nature through creek restoration and the accommodation of additional parking for day use activities	***Would partially meet*** the Project objective for recreation and interpretive facility and program elements through added opportunities for visitors to connect to nature through creek restoration and the accommodation of additional parking and restrooms for day use activities
Objective 5: Operations and Maintenance: Provide facilities, equipment, and programs that facilitate staff in providing safe and enriching recreation and interpretive experiences and supporting habitat protection, conservation and enhancement programs.	***Would not contribute*** to the Project objective for operations and maintenance and increased site deterioration at McCosker site and Preserve staging areas could adversely impact operations and maintenance	***Would partially meet*** the Project objective for operations and maintenance, but increased site deterioration at McCosker site and Preserve staging areas could adversely impact operations and maintenance	***Would partially meet*** the Project objective for operations and maintenance
Objective 6: Climate Adaptation and Resiliency: Incorporate climate adaptation and resiliency strategies into the creek restoration actions, recreational facility design and material selection, and program development to provide project stability and programming that reflect an era of changing climate conditions.	**Would not meet** the Project objective for climate change and resiliency	***Would partially meet*** the Project objective for climate change and resiliency	***Would partially meet*** the Project objective for climate change and resiliency

TABLE 4-2
SELECTED CEQA ALTERNATIVES

Alternative	How Does the Alternative Differ from the Proposed Project?
Alternative 1: No Project - The District would not restore Alder Creek or Leatherwood Creek in the McCosker sub-area, construct any new recreation or interpretive facilities or trails.	The No Project Alternative would retain: • Sibley - Visitor pavilion at the Main Staging Area • Sibley - 8.8 miles of existing trails in their current use • Sibley - The existing backpack camp • McCosker - Wilcox Station Staging Area - Pinehurst Road - Parking for 10 cars • McCosker - 2 miles of existing trails in their current use and design configuration, including no dogs on the McCosker Loop Trail McCosker • McCosker - Equipment shed for maintenance • Sibley and McCosker - Park residences and the park office The No Project Alternative would incorporate in the Western Hills sub-area[1]: • The land use designation of Conservation Easement for the 389-acre Western Hills Open Space • City of Orinda Wilder Park - 10 spaces parking dedicated to Sibley Preserve access • Wilder Rd. S. Terminus - District Staging -19 cars – 2 horse trailers

TABLE 4-2
SELECTED CEQA ALTERNATIVES (CONTINUED)

Alternative	How Does the Alternative Differ from the Proposed Project?
Alternative 1: No Project (continued)	• 3 miles of existing narrow and ranch roads as multi-use trails The No Project Alternative could incorporate: • Sibley - Main Staging Area - Skyline Blvd. – Added Parking • Sibley - Old Tunnel Road – Added Parking The No Project Alterative would NOT include: • McCosker - Restoration of creek • McCosker - Any new recreation or interpretive facilities, including camping • McCosker - Any additional parking • Preserve and McCosker - Any additional utility infrastructure • Project-wide - Any trail development
Alternative 2: Day Use Focus - Minimal Improvements - Reduced Restoration - The District would not restore Leatherwood Creek in the McCosker sub-area, construct any new recreation or interpretive facilities or trails. The District would restore Alder Creek and add parking at the McCosker sub-area for day use activities.	Alternative 2 would retain: • Sibley - Main Staging Area - Skyline Blvd. - Parking for 38 cars • Sibley - Old Tunnel Road - Parking for 13 cars • Sibley - Visitor pavilion at the Main Staging Area • Sibley - 8.8 miles of existing trails in their current use • Sibley - The existing backpack camp • McCosker - 2 miles of existing trails in their current use and design configuration, including no dogs on the McCosker Loop Trail • McCosker - Equipment shed for maintenance • Sibley and McCosker - Park residences and the park office Alternative 2 would incorporate in the Western Hills sub-area[1]: • The land use designation of Conservation Easement for the 389-acre Western Hills Open Space • City of Orinda Wilder Park - 10 parking spaces dedicated to Sibley Preserve access • Wilder Rd. S. Terminus – District Staging -19 cars – 2 horse trailers • 3 miles of existing narrow and ranch roads as multi-use trails Alternative 2 development in the McCosker sub-area would include: • Restoration of Alder Creek at McCosker site to the full extent of 2,291 linear feet • Partial road development, including one new vehicle bridge to provide access to Fiddleneck Field parking • 5 additional parking spaces to the existing 10-car day use lot at Wilcox Station Staging Area - Pinehurst Road for a total of 15 vehicles • Day use parking for up to 26 vehicles in Fiddleneck Field – 26 Alternative 2 would allow for: • Project-wide opening up to 5.2 miles of existing trails and changing use for 2.6 miles of existing trails Alterative 2 would NOT include: • McCosker - Restoration of Leatherwood Creek • McCosker - Any new recreation or interpretive facilities, including camping • Preserve and McCosker - Any additional utility infrastructure • Project-wide - Any trail development
Alternative 3: Day Use Focus - Parking Maximized Alternative - Similar to the Project, the District would restore Alder and Leatherwood Creek in the McCosker sub-area, construct new recreation and interpretive facilities and trails. Parking would be increased substantially, at the McCosker site. The District would not add camping or any include any infrastructure or amenities that would support camping activities.	Alternative 3 would retain: • Sibley - Visitor pavilion at the Main Staging Area • Sibley - 8.8 miles of existing trails • Sibley - The existing backpack camp • McCosker - Equipment shed for maintenance • Sibley and McCosker - Park residences and the park office Alternative 3 development would include: • McCosker - Restoration of Alder and Leatherwood Creeks at McCosker site to full extent of 3,061 linear feet • McCosker – Added parking for a total of up to 139 cars • McCosker - Installation of a vault toilet

TABLE 4-2
SELECTED CEQA ALTERNATIVES (CONTINUED)

Alternative	How Does the Alternative Differ from the Proposed Project?
Alternative 3: Day Use Focus - Parking Maximized Alternative - (continued)	• Trails Project-wide - Opening up to 5.2 miles of existing trails, changing use for 2.6 miles of existing trails, and constructing approximately 3.9 miles of new, narrow trails Alternative 3 would incorporate in the Western Hills sub-area[1]: • The land use designation of Conservation Easement for the 389-acre Western Hills Open Space • City of Orinda Wilder Park - 10 parking spaces dedicated to Sibley Preserve access • Wilder Rd. S. Terminus - District Staging -19 cars – 2 horse trailers • 3 miles of existing narrow and ranch roads as multi-use trails Alterative 3 would NOT include: • McCosker - Any new recreation or interpretive facilities, including camping • Preserve and McCosker - Any additional utility infrastructure

[1] In accordance with pre-determined conditions set forth in the 2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Aesthetics ***Impact AES-1: Scenic Vista***	**Less than Significant** Project improvements would occur in areas with limited visibility due to steep terrain and heavy woodland vegetation and thus would not affect a scenic vista.	**Less Beneficial than the Project** No Project Alternative site would look the same as present and there would be no aesthetic change.	**Less than Significant** Alt. 2 improvements would occur in areas with limited visibility due to steep terrain and heavy woodland vegetation and thus would not affect a scenic vista.	**Less than Significant** Alt. 3 improvements would occur in areas with limited visibility due to steep terrain and heavy woodland vegetation and thus would not affect a scenic vista.
Aesthetics ***Impact AES-2: Scenic Highway***	**No Impact** Project would not alter views from State Route Highway 24.	**No Impact** No Project Alternative site would look the same as present and there would be no aesthetic change.	**No Impact** Alt. 2 would not alter views from State Route Highway 24	**No Impact** Alt. 3 would not alter views from State Route Highway 24
Aesthetics ***Impact AES-3: Visual Quality and Character***	**Less than Significant with Mitigation** Project improvements during construction could have a short term adverse effect on the visual quality of the Project area. Project improvements in the McCosker sub-area would substantially alter the existing visual character of the valley floor through grading activities, site facility development, and creek restoration work. Trail construction activities in the upland areas could have an impact on the visual character of the hillside areas. Implementation of specified mitigation measures would ensure that in the McCosker sub-area parking is screened views highlighted, utilities are placed underground, new structures are finished with materials and colors that fit with the character of the landscape, riparian woodlands area enhanced and construction staging takes places outside the public viewing area. In addition, new trail alignments would be determined using District standard BMPs to minimize impacts to the land. With implementation of these measures impacts would be reduced to below the threshold of significance.	**Less Beneficial than the Project with Mitigation** No Project Alternative site would look the same as present and there would be no aesthetic change. In the absence of the grading for the public access and creek restoration activities required for the Project, there would be no short-term, construction-related impacts to the visual quality of the Project area. However, in the McCosker sub-area invasive, non-native plant species and deteriorating, exposed culverts in the drainage channel would not be removed, the Project site would not be restored with native vegetation, and riparian habitat would not be created, or enhanced. A nature trail providing access to an enhanced riparian corridor would not be built. There would not be an enhancement in overall visual quality of the McCosker site as would occur under the Project.	**Less than Significant with Mitigation** Alt. 2 improvements during construction could have a short term adverse effect on the visual quality of the Project area. Project improvements in the McCosker sub-area would less substantially alter the existing visual character of the valley floor as the acreage of grading activities would be reduced to some degree. Implementation of the specified mitigation measures would reduce impacts to below the threshold of significance as with the Project.	**Potentially Significant** Alt. 3 improvements during construction could have a short term adverse effect on the visual quality of the Project area. Project improvements in the McCosker sub-area would substantially alter the existing visual character of the valley floor through grading activities, site facility development, and creek restoration work. Lesser impacts from not building camping amenities would be offset by the intensification of parking, which would have a greater adverse impact on the natural environment than the Project. Also, the introduction of a substantially larger parking area at Pinehurst Road would adversely impact views from the Pinehurst Road into the Project area. Implementation of the specified mitigation measures set forth for the Project would reduce some impacts to below the threshold of significance, but additional mitigation would be required to minimized additional impacts associated with the added parking.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Aesthetics ***Impact AES-4: Night Light and Glare***	**Less than Significant** New sources of light would be limited to vehicle headlights, and the light from campfires and flashlights associated with camping activities. New sources of glare could result from added vehicles. The steep terrain and heavy woodland vegetation would reduce the effects of night lighting and glare from vehicles to the immediate area. Thus, impacts from lighting and glare would be below the threshold of significance.	**No Impact** No Project Alternative would not introduce new sources of light or glare.	**Less than Significant** Alt. 2 improvements would not introduce new sources of light. New sources of glare could result from added vehicles. The steep terrain and heavy woodland vegetation would reduce the effects of night lighting and glare from vehicles to the immediate area. Thus, impacts from lighting and glare would be below the threshold of significance.	**Less than Significant** Alt. 3 would not introduce new sources of light. New sources of glare could result from added vehicles proposed in this alternative. The steep terrain and heavy woodland vegetation would reduce the effects of night lighting and glare from vehicles to the immediate area. Thus, impacts from lighting and glare would be below the threshold of significance.
Agricultural and Forest Resources	**No Impact** The Project area is not designated as prime farmland, unique farmland, or farmland of statewide importance or under any Williamson Act contracts. Nor is it is zoned as forest land or timberland. Therefore, there would be no impact on Agricultural and Forest Resources.	**No Impact** The No Project Alternative would not cause an impact on Agricultural and Forest Resources.	**No Impact** As with the Project, there would be no impact on Agricultural and Forest Resources.	**No Impact** As with the Project, there would be no impact on Agricultural and Forest Resources.
Air Quality ***Impact AIR-1: Air Quality Plans***	**Less than Significant** The Project would be consistent with, or not conflict with, Federal Air Quality Standards.	**No Impact** As the No Project Alternative would not involve construction activities, it would not conflict with Federal Air Quality Standards.	**Less than Significant** As with the Project, Alt. 2 would be consistent with, or not conflict with, Federal Air Quality Standards.	**Less than Significant** As with the Project, Alt. 3 would be consistent with, or not conflict with, Federal Air Quality Standards.
Air Quality ***Impact* AIR-2: *Generate Air Pollutant Emissions***	**Less than Significant with Mitigation** Short-term degradation of air quality could occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities during construction of the Project improvements. Implementation of Basic Construction Mitigation Measures including requiring properly maintained equipment, watering exposed surfaces, covering material in haul trucks, limiting speeds and idling of equipment would reduce construction particulate emissions impacts to below the threshold of significance.	**No Impact** The No Project Alternative would not introduce construction activities using diesel-power equipment or causing soil disturbance.	**Less than Significant with Mitigation** Similar to the Project, but to a lesser extent, Alt. 2 construction activities could cause short-term degradation of air quality due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Implementation of Basic Construction Mitigation Measures including requiring properly maintained equipment watering exposed surfaces, covering material in haul trucks, limiting speeds and idling of equipment would reduce construction particulate emissions impacts to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt. 3 construction activities could cause short-term degradation of air quality due to the release of particulate emissions generated by excavation, grading, hauling, and other activities. Implementation of Basic Construction Mitigation Measures including requiring properly maintained equipment, watering exposed surfaces, covering material in haul trucks, limiting speeds and idling of equipment would reduce construction particulate emissions impacts to below the threshold of significance.
Air Quality	**Less than Significant**	**No Impact**	**Less than Significant**	**Less than Significant**

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Impact AIR-3: Violate Air Quality Standards	The Project would not exceed the significance criteria for daily ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions.	As the No Project Alternative would not would not involve construction activities, it would not exceed the significance criteria for daily ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions.	As with the Project, Alt. 2 would not exceed the significance criteria for daily ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions.	As with the Project, Alt. 3 would not exceed the significance criteria for daily ROG, NO_x, PM_{10} or $PM_{2.5}$ emissions.
Air Quality ***Impact AIR-4: CO Emissions***	**Less than Significant** The Project would not result in localized CO concentrations that exceed State or federal standards and impacts.	**No Impact** As the No Project Alternative would not involve construction activities, it would not result in localized CO concentrations that exceed State or federal standards and impacts.	**Less than Significant** As with the Project, Alt. 2 would not result in localized CO concentrations that exceed State or federal standards and impacts.	**Less than Significant** As with the Project, Alt. 3 would not result in localized CO concentrations that exceed State or federal standards and impacts.
Air Quality ***Impact AIR-5: Cumulative Pollutant Contribution***	**Less than Significant** The Project would not result in individually significant contributions to pollutants and therefore, would also not make a cumulatively considerable contribution to regional air quality impacts.	**No Impact** As the No Project Alternative would not involve construction activities, it would not result in individually significant contributions to pollutants and therefore, would also not make a cumulatively considerable contribution to regional air quality impacts.	**Less than Significant** As with the Project, Alt. 2 would not result in individually significant contributions to pollutants and therefore, would also not make a cumulatively considerable contribution to regional air quality impacts.	**Less than Significant** As with the Project, Alt. 3 would not result in individually significant contributions to pollutants and therefore, would also not make a cumulatively considerable contribution to regional air quality impacts.
Air Quality ***Impact AIR-6: Expose Sensitive Receptors to Pollutant Concentrations***	**Less than Significant** Project construction emissions would be well below the BAAQMD significance thresholds and, once the Project is constructed, the Project would not be a source of substantial emissions. During construction Basic Construction Mitigation Measures including requiring properly maintained equipment, watering exposed surfaces, covering material in haul trucks, limiting speeds and idling of equipment would be implemented to reduce construction pollutant impacts to below the threshold of significance.	**No Impact** As the No Project Alternative would not involve construction activities, it would not expose sensitive receptors to pollutant concentrations.	**Less than Significant** As with the Project, Alt. 2 construction emissions would be well below the BAAQMD significance thresholds and, once the Project is constructed, the Project would not be a source of substantial emissions. During construction Basic Construction Mitigation Measures including requiring properly maintained equipment, watering exposed surfaces, covering material in haul trucks, limiting speeds and idling of equipment would be implemented to reduce construction pollutant impacts to below the threshold of significance.	**Less than Significant** As with the Project, Alt. 3 construction emissions would be well below the BAAQMD significance thresholds and, once the Project is constructed, the Project would not be a source of substantial emissions. During construction Basic Construction Mitigation Measures including requiring properly maintained equipment, watering exposed surfaces, covering material in haul trucks, limiting speeds and idling of equipment would be implemented to reduce construction pollutant impacts to below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Air Quality ***Impact AIR-7: Objectionable Odors***	**Less than Significant** The Project would not include any activities or operations that would generate objectionable odors and once operational, the Project would not be a source of odors.	**No Impact** As the No Project Alternative would not involve construction activities, it would not generate objectionable odors or be a source of odors.	**Less than Significant** As with the Project, Alt. 2 would not include any activities or operations that would generate objectionable odors and once operational, the Project would not be a source of odors.	**Less than Significant** As with the Project, Alt. 3 would not include any activities or operations that would generate objectionable odors and once operational, the Project would not be a source of odors.
Biological Resources ***Impact BIO-1: Habitat Modifications***	**Less than Significant with Mitigation** Long-term, the Project would create and enhance 3,061 LF of creek restoration and provide about four acres of riparian woodland vegetation that could benefit habitat for special status species. In the short-term, the Project would involve ground-disturbing construction activities that could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species. Implementation of Best Management Practices (BMPs) in the District's Standard Technical Specifications and specified mitigation measures including general conservation measures to protect habitat quality; and avoidance, minimization, and compensation for impacts to special-status plants directed at protecting habitat, implementing pre-construction protocol-level surveys and avoidance measures, relocating extant populations, and compensating for impacts to special-status plants that could not be avoided, if present, would reduce construction related impacts to below the threshold of significance.	**Less Beneficial than the Project with Mitigation** The No Project Alternative would not create or enhance any habitat acreage. In the absence of grading for the public access and creek restoration activities required for the Project, there would be no short-term, construction-related impacts to wildlife species, or jurisdictional waters and no trees would be removed. However, invasive, non-native plant species would not be removed, the McCosker site would not be restored with native vegetation, and riparian habitat would not be created, or enhanced. Overall, although the No Project Alternative would not have biological impacts on habitat, it would not produce the biological benefits provided by the Project creek restoration activities. Thus, the No Project Alternative would be *less beneficial* than the Project for Biological Resources.	**Less Beneficial than the Project with Mitigation** Similar to the Project, but to a lesser extent, Alt. 2 would create and enhance riparian habitat over the long-term and over the short-term would involve ground-disturbing construction activities that could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species. Implementation of BMPs in the District's Standard Technical Specifications and specified mitigation measures including general conservation measures to protect habitat quality; and avoidance, minimization, and compensation for impacts to special-status plants directed at protecting habitat, implementing pre-construction protocol-level surveys and avoidance measures, relocating extant populations, and compensating for impacts to special-status plants that could not be avoided, if present, would reduce construction related impacts to below the threshold of significance.	**Less Beneficial than the Project with Mitigation** Similar to the Project, but to a lesser extent, Alt. 3 would create and enhance riparian habitat over the long-term. However, Alt. 3 would result in a higher area of permanent development through the implementation of more parking, including the addition of a new arch culvert over the restored creek. Over the short-term, Alt. 3 would involve ground-disturbing construction activities that could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species. Implementation of BMPs in the District's Standard Technical Specifications and specified mitigation measures including general conservation measures to protect habitat quality; and avoidance, minimization, and compensation for impacts to special-status plants directed at protecting habitat, implementing pre-construction protocol-level surveys and avoidance measures, relocating extant populations, and compensating for impacts to special-status plants that could not be avoided, if present would reduce construction related impacts to below the threshold of significance.
				However, the Alt. 3 Design would contribute less to habitat restoration and thus, would be *less beneficial* than the Project for Biological Resources.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Biological Resources ***Impact BIO-2: Riparian Habitat***	**Less than Significant with Mitigation** Long-term, the Project includes a riparian woodland restoration plan for the McCosker sub-area that would result in the enhancement and development of riparian woodland and aquatic habitat. In the short-term, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat would involve temporary disturbance to riparian woodland habitat, including tree trimming and tree removal. Implementation of BMPs in the District's Standard Technical Specifications and specified mitigation measures including general conservation measures to protect habitat quality; and avoidance, minimization, and compensation for impacts to special-status plants, directed at protecting habitat, implementing pre-construction protocol-level surveys and avoidance measures, relocating extant populations, and compensating for impacts to special-status plants that could not be avoided, if present, and measures to minimize, and mitigate for temporary and permanent impacts to wetlands and waters of the U.S. and of the State would reduce construction related impacts to below the threshold of significance.	**Less Beneficial than the Project with Mitigation** As the No Project Alternative would not involve any construction activities, it would not alter any waters of the U.S. or the State from filling, dredging, bridge construction, and other stream channel modifications, thus it would not have any impacts on riparian habitat in the short term. However, the No Project Alternative would not create or enhance any riparian habitat. Invasive, non-native plant species would not be removed, the McCosker site would not be restored with native vegetation, and there would not be an increase in riparian habitat as would occur under the Project. Overall, although the No Project Alternative would not have biological impacts associated with constructing a riparian woodland environment, it would not produce the biological benefits provided by the Project creek restoration activities. Thus, the No Project Alternative would be *less beneficial* than the Project for Biological Resources.	**Less than Significant with Mitigation** Similar to the Project, Alt. 2 includes a riparian woodland restoration plan, although to a lesser extent, for the McCosker sub-area that would result in the enhancement and development of riparian woodland and aquatic habitat over the long-term. In the short-term, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat would involve temporary disturbance to riparian woodland habitat, including tree trimming and tree removal. Implementation of BMPs in the District's Standard Technical Specifications and specified mitigation measures including general conservation measures to protect habitat quality; and avoidance, minimization, and compensation for impacts to special-status plants, directed at protecting habitat, implementing pre-construction protocol-level surveys and avoidance measures, relocating extant populations, and compensating for impacts to special-status plants that could not be avoided, if present, and measure to minimize, and mitigate for temporary and permanent impacts to wetlands and waters of the U.S. and of the State would reduce construction related impacts to below the threshold of significance.	**Less Beneficial than the Project** Similar to the Project, Alt. 3 includes a riparian woodland restoration plan for the McCosker sub-area that would result in the enhancement and development of riparian woodland and aquatic habitat over the long-term, although to a lesser extent than the Project. In the short-term, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat would involve temporary disturbance to riparian woodland habitat, including tree trimming and tree removal. Implementation of BMPs in the District's Standard Technical Specifications and specified mitigation measures including general conservation measures to protect habitat quality; and avoidance, minimization, and compensation for impacts to special-status plants, directed at protecting habitat, implementing pre-construction protocol-level surveys and avoidance measures, relocating extant populations, and compensating for impacts to special-status plants that could not be avoided, if present. Measures to minimize, and mitigate for temporary and permanent impacts to wetlands and waters of the U.S. would likely be increased with the installation of a new culvert intended to provide added parking. Thus, Alt. 3 would be *less beneficial* than the Project for Biological Resources.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Biological Resources ***Impact BIO-3: Wetlands***	**Less than Significant with Mitigation** In the short-term, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat would have impacts to riparian habitat and aquatic wildlife from filling, dredging, bridge construction, and other stream channel modifications required to complete the restoration work and create the developed recreation sites. Implementation of the District Best Management Practices in the District's Standard Technical Specifications and specified mitigation measures including conducting a jurisdictional wetland delineation to determine the extent of waters of the U.S. and waters of the state, designing the Project improvements to minimize to avoid direct impacts on wetlands, and providing compensation where disturbance to jurisdictional waters cannot be avoided would reduce construction related impacts to below the threshold of significance.	**No Impact** As the No Project Alternative would not involve any construction activities, it would not alter any waters of the U.S. or the State from filling, dredging, bridge construction, and other stream channel modifications.	**Less than Significant with Mitigation** Alt. 2, as with the Project, would include in the short-term, although to a lesser extent, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat that would have impacts to riparian habitat and aquatic wildlife from filling, dredging, bridge construction, and other stream channel modifications required to complete the restoration work and create the developed recreation sites. Implementation of the District Best Management Practices in the District's Standard Technical Specifications and specified mitigation measures including conducting a jurisdictional wetland delineation to determine the extent of waters of the U.S. and waters of the state, designing the Project improvements to minimize to avoid direct impacts on wetlands, and providing compensation where disturbance to jurisdictional waters cannot be avoided would reduce construction related impacts to below the threshold of significance.	**Less Beneficial than the Project** Alt. 3, as with the Project, would include in the short-term, creek daylighting and restoration work, recreation facility development, and trail construction crossing riparian habitat that would have impacts to riparian habitat and aquatic wildlife from filling, dredging, bridge construction, and other stream channel modifications required to complete the restoration work and create the developed recreation sites. Implementation of BMPs in the District's Standard Technical would help to minimize short-term effects associated with construction. However, measures to minimize, and mitigate for temporary and permanent impacts to wetlands and waters of the U.S. would likely be increased with the installation of a new culvert intended to provide added parking. Thus, Alt. 3 would be *less beneficial* than the Project for Biological Resources.
Biological Resources ***Impact BIO-4: Fish & Wildlife Movement***	**Beneficial** The Project includes a creek restoration plan for the McCosker sub-area allowing for additional cover for wildlife movement and nursery sites. In addition, the Project would incorporate the Western Hills sub-area, a protected open space conservation easement that would retain the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands. Thus, the long-term impact of the Project on wildlife corridors and nursery sites is beneficial, and no mitigation is required.	**Less Beneficial than the Project** The No Project Alternative would not create or enhance any creek acreage. The Project would incorporate the Western Hills sub-area, a protected open space conservation easement that would retain the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands. Overall, although the No Project Alternative would incorporate the Western Hills sub-area, a protected open space conservation easement, it would	**Beneficial** Similar to the Project, Alt. 2, although to a lesser extent, includes a creek restoration plan for the McCosker sub-area allowing for additional cover for wildlife movement and nursery sites. In addition, the Project would incorporate the Western Hills sub-area, a protected open space conservation easement that would retain the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands.	**Less Beneficial than the Project** Similar to the Project, Alt. 3, although to a lesser extent, includes a creek restoration plan for the McCosker sub-area allowing for additional cover for wildlife movement and nursery sites. In addition, the Project would incorporate the Western Hills sub-area, a protected open space conservation easement that would retain the ability of wildlife to move between other protected open space lands within and adjacent to the District parklands.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
		not produce the biological benefits provided by the Project creek restoration activities. Thus, the No Project Alternative would be *less beneficial* than the Project for Biological Resources.	Thus, the long-term impact of the Project on wildlife corridors and nursery sites is beneficial, and no mitigation is required.	Thus, the long-term impact of the Project on wildlife corridors and nursery sites is beneficial. However, measures to minimize, and mitigate for temporary and permanent impacts to wetlands and waters of the U.S. would likely be increased with the installation of a new culvert intended to provide added parking. Thus, Alt. 3 would be *less beneficial* than the Project for Biological Resources.
Cultural Resources and Tribal Cultural Resources (TCRs) ***Impact CUL-1 Archaeological Resources***	**Less than Significant with Mitigation** The Project would involve ground-disturbing activities during construction that could result in an unanticipated discovery of archaeological resources. Implementation of specified mitigation measures would ensure that any unanticipated precontract or historic-era resources would be treated in accordance with standard protocols, including in the case of TCRs, consultation with appropriate Native American tribes. With implementation of these measures impacts would be reduced to below the threshold of significance.	**No Impact** As the No Project Alternative would not involve ground-disturbing construction activities there would be no impact to archaeological resources	**Less than Significant with Mitigation** Similar to the Project, though to a lesser extent, Alt 2 would involve ground-disturbing activities during construction could result in an unanticipated discovery of archaeological resources. Implementation of specified mitigation measures would ensure that any unanticipated precontract or historic-era resources would be treated in accordance with standard protocols, including in the case of TCRs, consultation with appropriate Native American tribes. With implementation of these measures impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt 3 would involve ground-disturbing activities during construction could result in an unanticipated discovery of archaeological resources. Implementation of specified mitigation measures would ensure that any unanticipated precontract or historic-era resources would be treated in accordance with standard protocols, including in the case of TCRs, consultation with appropriate Native American tribes. With implementation of these measures impacts would be reduced to below the threshold of significance.
Cultural Resources and Tribal Cultural Resources ***Impact CUL-2 Paleontological Resources***	**Less than Significant with Mitigation** The Project would involve ground-disturbing activities during construction that could extend into previously undisturbed sediments considered to have a high paleontological sensitivity. Implementation of specified mitigation measures including monitoring and development of a treatment plan would ensure that discovery of any fossils resources would be handled in accordance with standard protocols of the SVP.	**No Impact** As the No Project Alternative would not involve ground disturbing construction activities there would be no impact to paleontological resources	**Less than Significant** Similar to the Project, though to a lesser extent, Alt 2 would involve ground-disturbing activities during construction. However, since Alt 2 would not involve the construction of trails where soils with high paleontological sensitivity occur, impacts to paleontological resources is considered less than significant and no mitigation would be required.	**Less than Significant with Mitigation** Similar to the Project, Alt 3 would involve ground-disturbing activities that could extend into previously undisturbed sediments considered to have a high paleontological sensitivity. Implementation of specified mitigation measures including monitoring and development of a treatment plan would ensure that discovery of any fossils resources would be handled in accordance with standard protocols of

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
	With implementation of these measures impacts would be reduced to below the threshold of significance.			the SVP. With implementation of these measures impacts would be reduced to below the threshold of significance.
Cultural Resources and Tribal Cultural Resources ***Impact CUL-3 Human Remains***	**Less than Significant with Mitigation** The Project would involve ground-disturbing activities during construction that could result in an unanticipated discovery of human remains. Implementation of specified mitigation measures including adherence to the procedures and protocols set forth in the CEQA Guidelines, including contacting the county coroner and, if the remains are determined to be of native American origin the NAHC, would ensure that any unanticipated human remains would be treated in accordance with standard protocols. With implementation of these measures impacts would be reduced to below the threshold of significance.	**No Impact** As the No Project Alternative would not involve ground-disturbing construction activities there would be no impact to human remains.	**Less than Significant with Mitigation** Similar to the Project, though to a lesser extent, Alt 2 would involve ground-disturbing activities during construction that could result in an unanticipated discovery of human remains. Implementation of specified mitigation measures including adherence to the procedures and protocols set forth in the CEQA Guidelines, including contacting the county coroner and, if the remains are determined to be of native American origin the NAHC, would ensure that any unanticipated human remains would be treated in accordance with standard protocols. With implementation of these measures impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt 3 would involve ground-disturbing activities during construction that could result in an unanticipated discovery of human remains. Implementation of specified mitigation measures including adherence to the procedures and protocols set forth in the CEQA Guidelines, including contacting the county coroner and, if the remains are determined to be of native American origin the NAHC, would ensure that any unanticipated human remains would be treated in accordance with standard protocols. With implementation of these measures impacts would be reduced to below the threshold of significance.
Cultural Resources and Tribal Cultural Resources ***Impact CUL-4 Tribal Cultural Resources***	**Less than Significant with Mitigation** As discussed under Impact CUL-1 and CULT-3 previously unrecorded or unknown TCR or human remains could be discovered during ground-disturbing activities. With implementation of mitigations described under Impact CUL-1 and CUL-3 impacts would be reduced to below the threshold of significance.	**No Impact** As the No Project Alternative would not involve ground-disturbing construction activities there would be no impact to cultural tribal resources.	**Less than Significant with Mitigation** As discussed under Impact CUL-1 and CULT-3 previously unrecorded or unknown TCR or human remains could be discovered during ground-disturbing activities. With implementation of mitigations described under Impact CUL-1 and CUL-3 impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** As discussed under Impact CUL-1 and CULT-3 previously unrecorded or unknown TCR or human remains could be discovered during ground-disturbing activities. With implementation of mitigations described under Impact CUL-1 and CUL-3 impacts would be reduced to below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Geology and Soils ***Impact GEO-1: Groundshaking***	**Less than Significant** The Project would include development of several structures and features that would be susceptible to ground shaking. Adherence to current CBC requirements including incorporation of industry standard measures would minimize the effects of strong ground shaking to below the threshold of significance.	**Potentially Significant** While the No Project Alternative avoids potential impacts to geology and soils that could result from the implementation of the Project, deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features and risk to the public and staff from strong ground shaking. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to strong ground shaking.	**Less than Significant** While the Alt. 2 Project reduces the number of site structures, it does include installation of one bridge requiring adherence to current CBC requirements to minimize the effects of strong ground shaking to below the threshold of significance as with the Project.	**Less than Significant** While the Alt. 3 Project reduces the number of site structures, including the water tank and pavilion, it does include installation of bridges and other features that would require adherence to current CBC requirements to minimize the effects of strong ground shaking to below the threshold of significance as with the Project.
Geology and Soils ***Impact GEO-2: Seismic-Related Ground Failure, including Liquefaction***	**Less than Significant** The Project would include development of several structures and features that could be susceptible to liquefaction. Adherence to current CBC requirements which would include incorporation of industry standard measures would minimize the potential for liquefaction to below the threshold of significance.	**Potentially Significant** While the No Project Alternative avoids potential impacts to geology and soils that could result from the implementation of the Project, deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features and risk to the public and staff from liquefaction. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to liquefaction.	**Less than Significant** While the Alt. 2 Project reduces the number of site structures, it does include installation of one bridge requiring adherence to current CBC requirements to minimize the potential for liquefaction to below the threshold of significance as with the Project.	**Less than Significant** While the Alt. 3 Project reduces the number of site structures, including the water tank and pavilion, it does include installation of bridges and other features that would require adherence to current CBC requirements to minimize the potential for liquefaction to below the threshold of significance as with the Project.
Geology and Soils ***Impact GEO-3: Earthquake-Induced Landslides***	**Less than Significant** The Project would include development of several structures and features and would involve excavation and fill of approximately 30,300 cubic yards of soil in the McCosker sub-area that could be susceptible to earthquake induced landslides. With oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist, current engineering practices and recommendations from the design level geotechnical report would be implemented and risks of earthquake induced landslides would be minimized to below the threshold of significance.	**Potentially Significant** While the No Project Alternative avoids potential impacts to geology and soils that could result from the implementation of the Project, deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features and risk to the public and staff from earthquake induced landslides. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to landslides.	**Less than Significant** While the Alt. 2 Project reduces the number of site structures and restoration area, it still includes massive grading in the McCosker sub-area requiring oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist to ensure that current engineering practices and recommendations from the design level geotechnical report are implemented to minimize the risks of earthquake induced landslides to below the threshold of significance as with the Project.	**Less than Significant** While the Alt. 3 Project reduces the number of site structures, including the water tank and pavilion, it does include installation of bridges and a similar quantity of excavation and fill in the McCosker sub-area requiring oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist to ensure that current engineering practices and recommendations from the design level geotechnical report are implemented to minimize the risks of earthquake induced landslides to below the threshold of significance as with the Project.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Geology and Soils ***Impact GEO-4: Erosion or Loss of Topsoil***	**Less than Significant** The Project would involve excavation and fill of approximately 30,300 cubic yards of soil in the McCosker sub-area. Implementation of construction Best Management Practices (BMPs), as detailed in the Storm Water Pollution Prevention Plan (SWPPP) as required in the District's Technical Specifications and Special Conditions and by the General Construction Permit from the National Pollution Discharge Elimination System program would minimize the potential for soil erosion, loss of topsoil and sedimentation transport off site to below the threshold of significance.	**Potentially Significant** While the No Project Alternative avoids potential impacts to geology and soils that could result from the implementation of the Project, deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to erode, potentially increasing sediment transport into the receiving waters of San Leandro Creek. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to soil erosion, loss of topsoil, and sedimentation transport off site.	**Less than Significant** While Alt. 2 Project reduces the number of site structures and restoration area, it still includes massive grading in the McCosker sub-area requiring implementation of construction BMPs, that would be detailed in the Storm Water Pollution Prevention Plan (SWPPP) as required in the District Technical Specifications and Special Conditions and by the General Construction Permit from the National Pollution Discharge Elimination System program to minimize the potential for soil erosion, loss of topsoil and sedimentation transport off site to below the threshold of significance, as with the Project.	**Less than Significant** Similar to the Project Alt. 3 would involve excavation and fill of approximately 30,000 cubic yards of soil in the McCosker sub-area, plus installation of a large culvert to accommodate the added parking near the entry to the McCosker sub-area. Implementation of construction BMPs, as detailed in the Storm Water Pollution Prevention Plan (SWPPP) as required in the District's Technical Specifications and Special Conditions and by the General Construction Permit from the National Pollution Discharge Elimination System program would minimize the potential for soil erosion, loss of topsoil and sedimentation transport off site to below the threshold of significance, as with the Project.
Geology and Soils ***Impact GEO-5: Unstable Geologic Unit or Soil***	**Less than Significant** While the Project area includes a range of topographic conditions that could be susceptible to landslides, oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist would ensure that current engineering practices and recommendations from the design level geotechnical report are implemented thereby minimizing risks of earthquake induced landslides to below the threshold of significance.	**Potentially Significant** While the No Project Alternative avoids potential impacts to geology and soils that could result from the implementation of the Project, deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features and risk to the public and staff from landslides. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to landslides.	**Less than Significant** While the Project area includes a range of topographic conditions that could be susceptible to landslides, oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist would ensue that current engineering practices and recommendations are implemented thereby minimizing risks of earthquake induced landslides to below the threshold of significance, as with the Project.	**Less than Significant** While the Project area includes a range of topographic conditions that could be susceptible to landslides, oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist would ensure that current engineering practices and recommendations are implemented thereby minimizing risks of earthquake induced landslides to below the threshold of significance, as with the Project.
Geology and Soils ***Impact GEO-6: Expansive Soil***	**Less than Significant** While the Project area includes a range of soil conditions that could include soils that are susceptible to expansion over time, oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist would ensure that current engineering practices and recommendations are implemented thereby	**Potentially Significant** While the No Project Alternative avoids potential impacts to geology and soils that could result from the implementation of the Project, deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features and risk to the public and	**Less than Significant** While Alt. 2 Project reduces the number of site structures and restoration area, it still includes massive grading in the McCosker sub-area with soils that are susceptible to expansion over time requiring oversight of field earthwork activities by a licensed geotechnical engineer or engineering geologist would	**Less than Significant** The Alt. 3 area involving grading activities would be similar in acreage to the Project area. Thus, the improvements would occur in an area that could include soils that are susceptible to expansion over time, requiring oversight of field earthwork activities by a licensed geotechnical

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
	minimizing risks of damage or injury from expansive soils to below the threshold of significance.	staff from expansive soils. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to expansive soils.	ensure that current engineering practices and recommendations are implemented thereby minimizing risks of damage or injury from expansive soils to below the threshold of significance, as with the Project.	engineer or engineering geologist would ensure that current engineering practices and recommendations are implemented thereby minimizing risks of damage or injury from expansive soils to below the threshold of significance, as with the Project.
Geology and Soils ***Impact GEO-7: Wastewater Disposal***	**Less than Significant** The Project includes the installation of vault toilets. Installation of the pre-manufactured vault toilets in accordance with current CBC codes and County Health requirements and installation of an unlined gravel bed for infiltration of greywater generated from these recreation uses would minimize risks associated with alternative waste water disposal systems to below the threshold of significance.	**No Impact** The No Project Alternative avoids potential impacts to wastewater disposal that could result from the implementation of the Project.	**Less than Significant** Alt 2. includes the installation of a vault toilet. Installation of the pre-manufactured vault toilets in accordance with current CBC codes and County Health requirements would minimize risks associated with alternative waste water disposal systems to below the threshold of significance as with the Project.	**Less than Significant** Alt 3. includes the installation of vault toilets. Installation of the pre-manufactured vault toilets in accordance with current CBC codes and County Health requirements would minimize risks associated with alternative waste water disposal systems to below the threshold of significance as with the Project.
Greenhouse Gases ***Impact GHG-1: Construction Emissions***	**Less than Significant** The Project would generate approximately 160 metric tons of CO_2e during the construction period. Implementation of the BAAQMD Basic Construction Mitigation Measures and additional Construction Best Management Practices would reduce greenhouse gas emissions during the construction period to ensure impacts remain below the threshold of significance.	**No Impact** As the No Project Alternative would not involve construction activities, it would not generate construction-related CO_2e.	**Less than Significant** As with the Project, Alt. 2 would generate CO_2e, although to a slightly lesser extent, during the construction period. Implementation of the BAAQMD Basic Construction Mitigation Measures and additional Construction Best Management Practices would reduce greenhouse gas emissions during the construction period to ensure impacts remain below the threshold of significance.	**Less than Significant** As with the Project, Alt. 3 would generate a similar quantity of CO_2e, during the construction period. Implementation of the BAAQMD Basic Construction Mitigation Measures and additional Construction Best Management Practices would reduce greenhouse gas emissions during the construction period to ensure impacts remain below the threshold of significance.
Greenhouse Gases ***Impact GHG-2: Long-term Emissions***	**Less than Significant** Project operations would generate approximately 389.3 metric tons of CO_2e; well below the BAAQMD's numeric threshold of 1,100 metric tons CO_2e. Therefore, the Project would not generate greenhouse gas emissions that would have a significant impact on the environment.	**No Impact** As the No Project Alternative would not involve construction activities, it would not generate construction-related CO_2e.	**Less than Significant** As with the Project, Alt. 2 operations would generate CO_2e; well below the BAAQMD's numeric threshold of 1,100 metric tons CO_2e. Therefore, the Project would not generate greenhouse gas emissions that would have a significant impact on the environment.	**Less than Significant** As with the Project, Alt. 3 operations would generate CO_2e; well below the BAAQMD's numeric threshold of 1,100 metric tons CO_2e. Therefore, the Project would not generate greenhouse gas emissions that would have a significant impact on the environment.
Greenhouse Gases ***Impact GHG-3:***	**Less than Significant**	**Less Beneficial than the Project**	**Less Beneficial than the Project**	**Less Beneficial than the Project**

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Plans, Policies & Regulations	To the extent that the Project encourages use of the neighborhood connections for bicycle and pedestrian travel, instead of by automobile, there would be a net reduction in vehicle trips. In addition, the installation of electric changing stations would also benefit air quality by encouraging use of electric vehicles. Moreover, the Project would adhere to the District's Sustainability Policy directed at reducing solid waste generation. As such, the Project would be consistent with plans, policies, and regulations to reduce greenhouse gases.	As the No Project Alternative would not involve construction activities, it would not be in non-compliance with any plans, policies or regulations. The District's Sustainability Policy directed at reducing solid waste generation would continue consistent with plans, policies, and regulations to reduce greenhouse gases. However, the No Project would not any include any actions or improvements directed at encouraging use of the neighborhood connections for bicycle and pedestrian travel, instead of by automobile, to reduce vehicle trips, or the installation of electric changing stations, which would benefit air quality by encouraging use of electric vehicles. As such, the No Project Alternative would have *lesser beneficial* impacts than the Project pertaining to Greenhouse Gases.	As with the Project, Alt. 2 would adhere to the District's Sustainability Policy directed at reducing solid waste generation consistent with plans, policies, and regulations to reduce greenhouse gases. However, Alt. 2 t would not include the installation of electric changing stations, which would benefit air quality by encouraging use of electric vehicles, or expand the trail system that could encourages use of the neighborhood connections for bicycle and pedestrian travel, instead of by automobile. As such, Alt. 2 would have *lesser beneficial* impacts than the Project pertaining to Greenhouse Gases.	As with the Project, Alt. 3 could include improvements the installation of electric changing stations, which would benefit air quality by encouraging use of electric vehicles. Alt. 3 would expand the trail system that to encourage use of the neighborhood connections for bicycle and pedestrian travel, and would adhere to the District's Sustainability Policy directed at reducing solid waste generation consistent with plans, policies, and regulations to reduce greenhouse gases. However, the greatly expanded parking area in the McCosker sub-area could discourage park visitors from considering alternative modes of travel to access the Project area. As such, Alt. 3 would have *lesser beneficial* impacts than the Project pertaining to Greenhouse Gases.
Hazards and Hazardous Materials ***Impact HAZ-1: Transport, use, or Disposal of Hazardous Materials***	**Less than Significant with Mitigation** Hazardous materials such as petroleum products, solvents, paints, oils, and herbicides may be used and stored on-site as a part of construction and in part for the riparian landscape establishment process, the fuels management program, and routine park operations. Transport, use storage of these materials would be done in compliance with standard state and county regulations and District Best Management programs currently in place. The Project also includes excavation activities that could expose construction workers to hazards in the McCosker Sub-area including excavating potentially contaminated soil and work around live and abandoned utility lines. Implementation of the Project improvements would include: developing a site Health and Safety Plan, testing for contaminants and establishing and implementing a remediation plan should contaminates be identified, and	**No Impact** The No Project Alternative would not involve construction excavation activities that could expose construction workers to hazards	**Less than Significant with Mitigation** Similar to the Project, Alt. 2 also includes use of hazardous materials that must be done in compliance with regulations and BMPs and excavation activities that could expose construction workers to hazards in the McCosker Sub-area including excavating potentially contaminated soil and work around live and abandoned utility lines. Implementation of the Project improvements would include: developing a site Health and Safety Plan, testing for contaminants and establishing and implementation of a remediation plan should contaminates be identified, and contacting utility line locator to ensure avoidance of utility lines. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt. 3 also includes use of hazardous materials that must be done in compliance with regulations and BMPs and excavation activities that could expose construction workers to hazards in the McCosker Sub-area including excavating potentially contaminated soil and work around live and abandoned utility lines. Implementation of the Project improvements would include: developing a site Health and Safety Plan, testing for contaminants and establishing and implementation of a remediation plan should contaminates be identified, and contacting utility line locator to ensure avoidance of utility lines. With implementation of these measures, impacts would be reduced to below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
	contacting utility line locator to ensure avoidance of utility lines. With implementation of these measures, impacts would be reduced to below the threshold of significance.			
Hazards and Hazardous Materials ***Impact HAZ-2: Release of Hazardous Materials into the Environment***	**Less than Significant** Hazardous materials such as petroleum products, solvents, paints, oils, and herbicides may be used and stored on-site as a part of construction and in part for the riparian landscape establishment process, the fuels management program, and routine park operations. Transport, use storage of these materials would be done in compliance with standard state and county regulations and District Best Management programs currently in place. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**Potentially Significant** The No Project Alternative would not involve the use of construction equipment and materials, and therefore e risk of accidental spills of fuels, lubricants, etc. would not occur, and impacts associated with construction would not take place. However, with continued degradation of the culvert system containing water flows in the McCosker sub-area there would be an increased risk of sediment and hazardous material transport into the receiving waters of San Leandro Creek. As such, the No Project Alternative would have *greater* impacts than the Project pertaining to transporting sediments and hazardous materials off site.	**Less than Significant** Similar to the Project, Alt. 2 hazardous materials such as petroleum products, solvents, paints, oils, and herbicides may be used and stored on-site as a part of construction and in part for the riparian landscape establishment process, the fuels management program, and routine park operations. Transport, use storage of these materials would be done in compliance with standard state and county regulations and District Best Management programs currently in place. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**Less than Significant** Similar to the Project, Alt. 3 hazardous materials such as petroleum products, solvents, paints, oils, and herbicides may be used and stored on-site as a part of construction and in part for the riparian landscape establishment process, the fuels management program, and routine park operations. Transport, use storage of these materials would be done in compliance with standard state and county regulations and District Best Management programs currently in place. With implementation of these measures, impacts would be reduced to below the threshold of significance.
Hazards and Hazardous Materials ***Impact HAZ-3: Urban Interface Wildfire Hazard Risk***	**Less than Significant** The Project would maintain current protocols for handling a wildfire situation consistent with District policies, agreements and emergency preparedness plans, including the MOU with the Moraga-Orinda Fire Protection District.	**Less than Significant** The District would maintain current protocols for handling a wildfire situation consistent with District policies, agreements and emergency preparedness plans, including the MOU with the Moraga-Orinda Fire Protection District with the No Project Alternative.	**Less than Significant** The District would maintain current protocols for handling a wildfire situation consistent with District policies, agreements and emergency preparedness plans, including the MOU with the Moraga-Orinda Fire Protection District with Alternative 2.	**Less than Significant** The District would maintain current protocols for handling a wildfire situation consistent with District policies, agreements and emergency preparedness plans, including the MOU with the Moraga-Orinda Fire Protection District with Alternative 3.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Hydrology and Water Quality ***Impact HYD-1: Water Quality and Waste Discharge***	**Less than Significant** The Project would include trail construction/ modification, road improvements, repaving, parking lot expansion, and restoration and enhancement of creeks. District Technical Specifications required that this work be completed in compliance with the NPDES General Construction Activities Permit (Order No. 2012-0006-DWQ; NPDES No. CAS000002), which requires the Project applicant to prepare a Stormwater Pollution Prevention Plan (SWPPP) including BMPs for preventing the discharge of other NPDES pollutants. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**No Impact** The No Project alternative would not involve the construction of new impervious surfaces that would require preparation of a SWPPP.	**Less than Significant** Similar to the Project, but to a lesser degree, Alt. 2 would involve the construction of new impervious surfaces requiring preparation of a SWPPP. With implementation of the measures described above impacts would be reduced to below the threshold of significance.	**Less than Significant** Similar to the Project, Alt. 3 would involve the construction of new impervious surfaces requiring preparation of a SWPPP. With implementation of the measures described above impacts would be reduced to below the threshold of significance.
Hydrology and Water Quality ***Impact HYD-2: Drainage and Sediment Transport***	**Less than Significant** The Project would include trail construction/ modification, road improvements, repaving, parking lot expansion, and restoration and enhancement of creeks. District Technical Specifications require BMPs in accordance with NPDES Construction General Permit and NPDES MS4 to minimize the potential for erosion or sedimentation. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**No Impact** The No Project alternative would not involve the construction of new impervious surfaces that would require preparation of a SWPPP	**Less than Significant** Similar to the Project, but to a lesser degree, Alt. 2 would involve the construction improvements. District Technical Specifications require BMPs in accordance with NPDES Construction General Permit and NPDES MS4 to minimize the potential for erosion or sedimentation. With implementation of these measures impacts would be reduced to below the threshold of significance.	**Less than Significant** Similar to the Project, Alt. 3 would involve the construction improvements. District Technical Specifications require BMPs in accordance with NPDES Construction General Permit and NPDES MS4 to minimize the potential for erosion or sedimentation. With implementation of these measures impacts would be reduced to below the threshold of significance.
Hydrology and Water Quality ***Impact HYD-3: Impede or Redirect Flood Flows***	**Less than Significant** The Project would remove storm-related flooding impediments such as buried culverts and retrofit the culvert conveying discharge off the site under Pinehurst Road with internal flow baffles and augment the scour pool downstream of this pipe. Overall, these improvements are anticipated to reduce impediments to natural flood flows, improve overall ecosystem functions, and facilitate fish passage between San Leandro Creek and Alder Creek.	**Potentially Significant** The No Project Alternative would not physically alter flood flows. However, with continued degradation of the culvert system containing water flows in the McCosker sub-area there would be an increased risk of flows naturally redirecting to alternate routes due to flooding impediments in the buried culverts, which could accelerate failure of infrastructure at the McCosker site.	**Potentially Significant** Similar to the Project, Alt. 2 would partially remove storm-related flooding impediments such as buried culverts and retrofit the culvert conveying discharge off the site, but delaying the Leatherwood Creek restoration has potential hydrologic risks should the aging culvert system fail. As such, Alt. 2 would have potentially *greater* impacts than the Project	**Less than Significant** Similar to the Project, Alt. 3 would remove storm-related flooding impediments such as buried culverts and retrofit the culvert conveying discharge off the site. As a result, the potential for structures to impede or redirect flood flows would be below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
	As a result, the potential for structures to impede or redirect flood flows would be below the threshold of significance.	As such, the No Project Alternative would have *greater* impacts than the Project pertaining to flood flows and damage from redirected flows.	pertaining to flood flows and damage from redirected flows.	
Hydrology and Water Quality Impact HYD-4: Increased Flooding	**Less than Significant** The Project would alter the existing drainage patterns through restoration of creeks in the McCosker sub-area to improve overall hydrologic functions including flood storage capacity. With implementation of these measures, impacts relating to flooding would be reduced to below the threshold of significance	**Potentially Significant** The No Project Alternative would not physically alter flood flows.	**Potentially Significant** Similar to the Project, Alt. 2 would alter the existing drainage patterns through restoration of Alder Creek in the McCosker sub-area to improve overall hydrologic functions including flood storage capacity. However, delaying the Leatherwood Creek restoration has potential hydrologic risks should the aging culvert system fail. As such, Alt. 2 would have potentially *greater* impacts than the Project pertaining to flood flows and damage from redirected flows.	**Less than Significant** Similar to the Project, Alt. 3 would alter the existing drainage patterns through restoration of creeks in the McCosker sub-area to improve overall hydrologic functions including flood storage capacity. With implementation of these measures, impacts relating to flooding would be reduced to below the threshold of significance
Hydrology and Water Quality ***Impact HYD-5: Stormwater Infrastructure Capacity***	**Less than Significant** The Project would include parking lot expansions, road modifications and features to support camping that would add to impervious surfaces at the site. These features would include installation of drainage control features in accordance with the NPDES MS4 requirements to minimize impacts related to stormwater both on- and off-site. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**No Impact** The No Project alternative would not involve the construction of new impervious surfaces that would require installation of drainage control features.	**Less than Significant** Similar to the Project, but to a lesser degree, Alt. 2 would include parking lot expansions, road modifications and features to support camping that would add to impervious surfaces at the site. These features would include installation of drainage control features in accordance with the NPDES MS4 requirements to minimize impacts related to stormwater both on- and off-site. With implementation of the measures described above, impacts would be reduced to below the threshold of significance.	**Less than Significant** Similar to the Project, Alt. 3 would include parking lot expansions, road modifications and features to support camping that would add to impervious surfaces at the site. These features would include installation of drainage control features in accordance with the NPDES MS4 requirements to minimize impacts related to stormwater both on- and off-site. With implementation of the measures described above, impacts would be reduced to below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Hydrology and Water Quality ***Impact HYD-6: Water Quality Degradation***	**Less than Significant** The Project would include the creation of some new impervious surfaces which could introduce typical urban/recreation pollutants, that would be addressed through the installation of drainage control features in accordance with the NPDES MS4 requirements and standard routine maintenance practices by District staff. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**No Impact** The No Project alternative would not involve the construction of new impervious surfaces that would require installation of drainage control features.	**Less than Significant** Similar to the Project, but to a lesser degree, Alt. 2 would include the creation of some new impervious surfaces which could introduce typical urban/recreation pollutants, that would be addressed through the installation of drainage control features in accordance with the NPDES MS4 requirements and standard routine maintenance practices by District staff. With implementation of the measures described above, impacts would be reduced to below the threshold of significance.	**Less than Significant** Similar to the Project, Alt. 3 would include the creation of some new impervious surfaces which could introduce typical urban/recreation pollutants, that would be addressed through the installation of drainage control features in accordance with the NPDES MS4 requirements and standard routine maintenance practices by District staff. With implementation of the measures described above, impacts would be reduced to below the threshold of significance.
Land Use and Planning	**No Impact** As there are no established communities located within the Project site, the Project would not introduce new land uses that would conflict with established or intended uses for these lands, and the Project would not be within an area covered by a habitat conservation plan or natural community conservation plan, there would be no impact on Land Use and Planning.	**No Impact** The No Project Alternative would not cause a change in Land Use and Planning.	**No Impact** As with the Project, there would be no impact on Land Use and Planning.	**No Impact** As with the Project, there would be no impact on Land Use and Planning.
Mineral Resources	**No Impact** As there are presently no active mining sites are at or within the Project area, and no mining activities are occurring or would occur in the future at or within the vicinity of the Project site, there would be no impact on Mineral Resources.	**No Impact** The No Project Alternative would not cause a change in Mineral Resources.	**No Impact** As with the Project, there would be no impact on Mineral Resources.	**No Impact** As with the Project, there would be no impact on Mineral Resources.
Noise ***Impact NOI-1: Exceed Noise Standards***	**Less than Significant** The Project would include the opening of recreation sites and trails that would result in increases in noise levels associated with recreation use. However, these noise levels would be consistent with County and City noise and land use compatibility standards.	**Less than Significant** As the No Project Alternative would include the opening of staging areas and trails through pre-determined actions there may be increases in noise levels associated with recreation use. However, these noise levels would be consistent with City of Orinda noise and land use compatibility standards.	**Less than Significant** Similar to the Project, Alt. 2 would include the opening of recreation sites and trails that would result in increases in noise levels associated with recreation use. However, these noise levels would be consistent with County and City noise and land use compatibility standards.	**Less than Significant** Similar to the Project, Alt. 3 would include the opening of recreation sites and trails that would result in increases in noise levels associated with recreation use. However, these noise levels would be consistent with County and City noise and land use compatibility standards.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Noise ***Impact NOI-2: Groundborne Vibration and Noise levels***	**Less than Significant** While construction of the Project would require use of bulldozers and other heavy-tracked construction equipment, use of this equipment would not exceed the FTA threshold of 94 VdB (0.2 in/sec PPV) for building damage when bulldozers and loaded trucks operate within 50 feet of the Project construction boundary. Additionally, this level is also below the FTA's "barely perceptible" human response criteria of 0.04 PPV for transient sources of vibration events.	**No Impact** As the No Project Alternative would not include any construction there would be no short-term construction-related noise.	**Less than Significant** Similar to the Project, Alt. 2 construction activities are not anticipated to exceed FTA thresholds	**Less than Significant** Similar to the Project, Alt. 3 construction activities are not anticipated to exceed FTA thresholds
Noise ***Impact NOI-3: Permanent Increase in Ambient Noise Levels***	**Less than Significant** The Project would include the opening of recreation sites and trails that would result in increases in noise levels associated with recreation use. However, these noise levels would be consistent with County and City noise and land use compatibility standards.	**Less than Significant** As the No Project Alternative would include the opening of staging areas and trails through pre-determined actions there may be increases in noise levels associated with recreation use. However, these noise levels would be consistent with City of Orinda noise and land use compatibility standards.	**Less than Significant** Similar to the Project, Alt. 2 would include the opening of staging areas, recreation sites and trails that would result in increases in noise levels associated with recreation use. However, these noise levels would be consistent with Contra Costa County and City of Oakland noise and land use compatibility standards.	**Less than Significant** Similar to the Project, Alt. 3 would include the opening of staging areas, recreation sites and trails that would result in increases in noise levels associated with recreation use. However, these noise levels would be consistent with Contra Costa County and City of Oakland noise and land use compatibility standards.
Noise ***Impact NOI-4: Temporary Increase in Ambient Noise Levels***	**Less than Significant with Mitigation** Construction of the Project would result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the project. Implementation of the Project would include adherence to BMPs including proper equipment use and maintenance, limiting hours of operation and assigning and assigning a District "disturbance coordinator" to address noise complaints. With implementation of these measures, Construction noise impacts would be reduced to below the threshold of significance.	**No Impact** As the No Project Alternative would not include any construction there would be no short-term construction-related noise.	**Less than Significant with Mitigation** Similar to the Project, Alt. 2 would include construction of the project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project that could be reduced to below the threshold of significance with implementation BMPs including proper equipment use and maintenance, limiting hours of operation and assigning and assigning a district "Disturbance coordinator" to address noise complaints. With implementation of these measures, Construction noise impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt. 3 would include construction of the project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project that could be reduced to below the threshold of significance with implementation BMPs including proper equipment use and maintenance, limiting hours of operation and assigning and assigning a district "Disturbance coordinator" to address noise complaints. With implementation of these measures, Construction noise impacts would be reduced to below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Population and Housing	**No Impact** As none of the Project improvements would directly or indirectly add to the population or the demand for housing or displace anyone from existing housing, there would be no impact on Population and Housing.	**No Impact** The No Project Alternative would not cause a change in Population and Housing.	**No Impact** As with the Project, there would be no impact on Population and Housing.	**No Impact** As with the Project, there would be no impact on Population and Housing.
Public Services ***Impact PUB-1: Disruption of Park Services***	**Less than Significant with Mitigation** Construction of the elements would require temporary closure of recreation/staging units causing a disruption of public park services. Implementation of the Project would include adherence to specified mitigation measures directed at notifying the public of pending closures and directing them to other District parklands in the surrounding area. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**Potentially Significant** The No Project Alternative would not cause a disruption in public services due to construction in the near term. However, with the No Project Alternative deterioration of facilities and site resources and associated risks to public safety would increase potentially leading to the eventual long-term closure of recreation/staging units in the Project area, thereby reducing parks services in this region.	**Less than Significant with Mitigation** Similar to the Project, Alt. 2 implementation would require temporary closure of recreation/staging units during construction and include adherence to specified mitigation measures directed at notifying the public. As Alternative 2 involves a lesser amount of construction activities, park closures could be of potentially be of shorter duration. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt. 3 implementation would require temporary closure of recreation/staging units during construction and include adherence to specified mitigation measures directed at notifying the public. With implementation of these measures, impacts would be reduced to below the threshold of significance.
Recreation ***Impact REC-1 Added Recreation Facilities***	**Less than Significant with Mitigation** The Project would include modifications to and expansion of recreation facilities and trails that would change the physical the environment. With implementation of specified mitigation measures, regulations and best management practices set forth for *Aesthetics, Geology and Soils, Hazardous and Hazardous Materials, and Public Services,* impacts would be reduced to below the threshold of significance.	**Potentially Significant** The No Project Alternative would not lessen the anticipated increase in use from adjacency to neighborhoods or added access from prior decisions or from the anticipated increase in growth, but could add to the wear and tear of existing facilities as new facilities would not be developed to accommodate growth and additional staffing projected to be hired to maintain the added facilities may not be forthcoming, reducing the current standard of care.	**Less than Significant with Mitigation** Similar to the Project, Alt. 2, would include modifications to and expansion of recreation facilities and trails that would change the physical the environment, although to a lesser degree. With implementation of specified mitigation measures, regulations and best management practices set forth for *Aesthetics, Geology and Soils, Hazardous and Hazardous Materials, and Public Services,* impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt. 3 would include modifications to and expansion of recreation facilities and trails that would change the physical the environment. While the proposed elements would differ and the focus would be shifted to day-use only, the impacted area would be similar. With implementation of specified mitigation measures, regulations and best management practices set forth for *Aesthetics, Geology and Soils, Hazardous and Hazardous Materials, and Public Services,* impacts would be reduced to below the threshold of significance.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
Transportation and Traffic ***Impact TRA-1: Construction Traffic***	**Less than Significant** Project would generate short-term construction-related vehicle trips from construction workers and delivery by construction vehicles that could be minimized by scheduling trips outside of peak uses periods with nearby land uses (e.g., outside of school drop-off and pick-up periods) as set forth in the project description.	**No Impact** As the No Project alternative would not involve the construction activities, it would not generate short-term construction-related vehicle trips from construction workers and delivery by construction vehicles.	**Less than Significant** As with the Project, Alt. 2 would generate short-term construction-related vehicle trips from construction workers and delivery by construction vehicles that could be minimized by scheduling trips outside of peak uses periods with nearby land uses (e.g., outside of school drop-off and pick-up periods) as set forth in the project description.	**Less than Significant** As with the Project, Alt. 3 would generate short-term construction-related vehicle trips from construction workers and delivery by construction vehicles that could be minimized by scheduling trips outside of peak uses periods with nearby land uses (e.g., outside of school drop-off and pick-up periods) as set forth in the project description.
Transportation and Traffic ***Impact TRA-2: Operations Traffic***	**Less than Significant** Project would continue to operate at acceptable LOS B or better after the addition of Project traffic.	**No Impact** As with the Project, the No Project Alternative would continue to operate at acceptable LOS B or better after the addition of Project traffic.	**Less than Significant** As with the Project, Alt. 2 would continue to operate at acceptable LOS B or better after the addition of Project traffic.	**Less than Significant** As with the Project, Alt. 3 would continue to operate at acceptable LOS B or better after the addition of Project traffic.
Utilities and Service Systems ***Impact UTI-1: Energy Supplies***	**Less than Significant** The Project would add to the electrical demand to service vehicle charging units, operate the water treatment system and operate tools in the equipment shed used to maintain park facilities. Electric demand associated with water usage and charging electrical vehicles would typically be limited and short term. In addition, where feasible and appropriate, solar features may be incorporated to reduce consumption of non-renewable resources. As a result, the energy usage would be below the threshold of significance.	**No Impact** The No Project Alternative would not add to the electrical demand.	**Less Beneficial than the Project** While Alt. 2 would not add to the electrical demand associated with service vehicle charging units, operating the water treatment system or operating tools in the equipment shed in the McCosker service. Nor, would Alt. 2 extend any electrical or solar services to the recreation area, thus reducing opportunities for recharging electrical vehicles. Additionally, a lack of energy improvements would require staff to maintain reliance on a generator to operate tools in the equipment shed. Thus, Alt. 2 the energy usage would be below the threshold of significance, it would be *less beneficial* than the Project.	**Less than Significant** Similar to the Project, Alt. 3 would add to the electrical demand to service vehicle charging units, operate the water treatment system and operate tools in the equipment shed used to maintain park facilities. Electric demand associated with water usage and charging electrical vehicles would typically be limited and short term. In addition, where feasible and appropriate, solar features may be incorporated to reduce consumption of non-renewable resources As a result, the energy usage would be below the threshold of significance.
Utilities and Service Systems ***Impact UTI-2: Energy Standards***	**Less than Significant** The Project would replace deteriorating poles and above-ground utility lines with new, underground new communication lines consistent with District Master Policy PRPT29. Installation of electrical charging units would be consistent with District goals directed at embracing use of alternative energy sources and SB50. Consistent with	**Less Beneficial than the Project** The No Project Alternative would not change conditions at the site. Deteriorating poles and above-ground utility lines would be retained. Electric charging would not be installed. Solar energy sources would not be installed. As such, the Project area would not be brought up to current energy standards	**Less Beneficial than the Project** Alt. 2 would not change infrastructure conditions at the site. Deteriorating poles and above-ground utility lines would be retained. Electric charging would not be installed. Solar energy sources would not be installed. As such, the Project area would not be brought up to current	**Less than Significant** Similar to the Project, Alt. 3 would replace deteriorating poles and above-ground utility lines with new, underground new communication lines, install electrical charging units and incorporate alternative energy sources such as solar into the design of facilities.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
	supporting strategies for *Objective 6: Climate Adaptation and Resiliency*, the Project would incorporate alternative energy sources such as solar into the design of facilities. With implementation of these measures, the Project would be consistent with current energy standards, and impacts would be reduced to below the threshold of significance.	and the No Project Alternative would be *less beneficial* than the Project.	energy standards and Alt. 2 would be *less beneficial* than the Project.	With implementation of these measures, the Project would be consistent with current energy standards, and impacts would be reduced to below the threshold of significance.
Utilities ***Impact UTI-3 Wastewater Treatment Facilities***	**Less than Significant** Wastewater generation from Project implementation would be contained in sealed vault toilets and in unlined gravel beds designed to infiltrate greywater generated from camping uses. Thus, risks associated with alternative waste water disposal would be reduced to below the threshold of significance.	**No Impact** The No Project Alternative would not include construction of any amenities that would require development of any new wastewater systems.	**Less than Significant** Alt. 2 wastewater generation would be contained in sealed vault toilets. Thus, risks associated with alternative waste water disposal would be reduced to below the threshold of significance.	**Less than Significant** Alt. 3 wastewater generation would be contained in sealed vault toilets. Thus, risks associated with alternative waste water disposal would be reduced to below the threshold of significance.
Utilities ***Impact UTI-4 Water Treatment Facilities***	**Less than Significant** The Project would development of a water line, 4,000-gallon tank and water treatment facility that would be tied into spring water sources at the McCosker site and installation of a water tank at the Sibley backpack camp. As water system generation from implementation of the Project would include installation of water systems for which the District has existing entitlements, impacts associated with water system development, would be below the threshold of significance.	**No Impact** The No Project Alternative would not include construction of any amenities requiring development of any new water treatment systems.	**No Impact** Alt. 2 would not include construction of any water treatment systems.	**No Impact** Alt. 3 would not include construction of any water treatment systems.
Utilities ***Impact UTI-5 Stormwater***	**Less than Significant** The Project would include parking lot expansions, road modifications and features to support camping that would add to impervious surfaces at the site. These features would include installation of drainage control features in accordance with the NPDES MS4 requirements to minimize impacts related to flooding both on- and off-site.	**No Impact** The No Project Alternative would not change conditions at the site. As such, no drainage control features would be required.	**Less than Significant** Similar to the Project, Alt. 2 would include parking lot expansions and road modifications that would add to impervious surfaces at the site. These features would include installation of drainage control features in accordance with the NPDES MS4 requirements to minimize impacts related to flooding both on- and off-site.	**Less than Significant** Similar to the Project, Alt. 3 would include parking lot expansions and road modifications that would add to impervious surfaces at the site. These features would include installation of drainage control features in accordance with the NPDES MS4 requirements to minimize impacts related to flooding both on- and off-site.

TABLE 4-3
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES (CONTINUED)

Impact	Project	Alternative 1: No Project	Alternative 2: Minimal Improvements – Day Use Focus – Reduced Restoration Alternative	Alternative 3: Maximized Improvements – Day Use Focus – Enhanced Parking
	With implementation of these measures, impacts would be reduced to below the threshold of significance.		With implementation of these measures, impacts would be reduced to below the threshold of significance.	With implementation of these measures, impacts would be reduced to below the threshold of significance.
Utilities ***Impact UTI-6 Water Supply***	**Less than Significant** Use resulting from implementation water tank at the backpack camp in the Preserve, and from installation of water systems to serve the Fiddleneck Field recreation area in the McCosker site for park visitors and for irrigating the new established riparian zones would increase water use at the Project area. As these uses would be short-term and incremental, the added use is not anticipated to exceed the capacity of existing District water supply sources for which the District has entitlements and impacts associated with water use, would be below the threshold of significance.	**No Impact** The No Project Alternative would not change conditions at the site. As such, water use is not anticipated to increase.	**Less than Significant** Alt. 2 water use would temporarily increase at the McCosker site to irrigate the new and establishing riparian zones. As this use would be short-term and incremental, the added use is not anticipated to exceed the capacity of existing District spring supply sources for which the District has entitlements and impacts associated with water use, would be below the threshold of significance.	**Less than Significant** Alt. 3 water use would temporarily increase at the McCosker site to irrigate the new and establishing riparian zones. As this use would be short-term and incremental, the added use is not anticipated to exceed the capacity of existing District spring supply sources for which the District has entitlements and impacts associated with water use, would be below the threshold of significance.
Utilities ***Impact UTI-7 Solid Waste***	**Less than Significant with Mitigation** Waste generated from the construction of Project would involve disposal of a substantive quantity of solid waste material, requiring the contractor to develop a waste disposal plan to minimize disposal of solid waste, including recycling and balancing cut and fill on site. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**No Impact** The No Project Alternative would not change conditions at the site. As such, solid waste generation associated with construction would not occur.	**Less than Significant with Mitigation** Similar to the Project, Alt. 2, but to a lesser extent, waste generated from the construction of project would involve disposal of a substantive quantity of solid waste material, requiring the contractor to develop a waste disposal plan to minimize disposal of solid waste, including recycling and balancing cut and fill on site. With implementation of these measures, impacts would be reduced to below the threshold of significance.	**Less than Significant with Mitigation** Similar to the Project, Alt. 3, waste generated from the construction of project would involve disposal of a substantive quantity of solid waste material, requiring the contractor to develop a waste disposal plan to minimize disposal of solid waste, including recycling and balancing cut and fill on site. With implementation of these measures, impacts would be reduced to below the threshold of significance.

Alternative 1: No Project Alternative

CEQA Guidelines Section 15126.6(e) requires that EIRs include an evaluation of the No Project Alternative to provide decision-makers the information necessary to compare the relative impacts of approving the Project and not approving the Project. The No Project Alternative is defined as a continuation of existing conditions, as well as conditions that are reasonably expected to occur if the Proposed Project is not implemented.

Description of the No Project Alternative

Much of the Project area is situated on moderately steep to steeply sloping terrain with prominent ridges bisected by interior valleys and side canyons. Natural Units (comprising approximately 99 percent of the Project area) consist of a mix of California annual grassland, coyote brush scrub, oak woodland, riparian woodland, tree plantations, developed/ruderal habitat, and seasonal wetlands. Recreation/Staging Units (comprising approximately one percent of the Project area) are generally located near access roads on relatively flat lands that have been previously developed, including in the McCosker sub-area, terraced areas, along with vehicle access, utility services, and trail connections between these areas.

An unnamed perennial stream, referred to as Alder Creek, occurs mainly within the McCosker sub-area. Alder Creek generally flows from the northern portion of the sub-area south towards Pinehurst Road. It converges with San Leandro Creek immediately south of Pinehurst Road. The lower reach of Alder Creek and several of its tributaries have largely been filled and culverted and some portions of the culverts have failed resulting in severe erosion. The culverted portions of Alder Creek are located beneath oak woodland and developed/ruderal areas. There are a few daylighted segments of Alder Creek within this lower reach that support riparian woodland vegetation. An unnamed tributary of Alder Creek, referred to as Leatherwood Creek, originates in the eastern hills of the sub-area and flows southwest until it converges with Alder Creek. The lower reach of Leatherwood Creek is almost entirely culverted, except for a small daylighted segment that is surrounded by oak woodland vegetation. The culverted portion is located beneath non-native grassland, oak woodland and coyote brush scrub.

In the event that the District does not approve the Project, restoration of the creeks in the McCosker sub-area would not occur. The failing culvert system would not be replaced and the aquatic species would not benefit from a restored and reconnected natural system. Site conditions would continue to deteriorate in the valley floor of the McCosker sub-area including a potential increase in sediment transport into San Leandro Creek and deterioration of geologic and soil conditions on previously graded pads. Without remedy, these conditions pose a risk to site resources within and downstream of the Project area, and staff and public safety that could accelerate.

No new recreation or interpretive facilities, including added parking, would be created. Additional trails throughout the Project area would also not be constructed. Climate adaptation and resiliency would not be woven into the proposed changes. The No Project Alternative would maintain the existing land use designations including the established conservation easement, and

developed trails and a staging area in the Western Hills sub-area, and the transfer of said items to the District.

The *No Project Alternative* would not change the following existing features:

- Sibley Wilcox Station Staging Area with parking for 10 cars on Pinehurst Road
- 8.8 miles of existing trails in their current use and design configuration, including no dogs on the McCosker Loop Trail
- The existing backpack camp near the Sibley Main Staging Area
- Three park security residences and one park office
- The visitor pavilion at the Main Staging Area
- The graded terraces and culverted creeks in the McCosker sub-area
- Equipment shed in the McCosker sub-area

In accordance with prior District decisions (stated in the Project purpose -Resolution 2006-12-280), City of Orinda planning documents and CEQA analysis, including provisions set forth in the *2004 Second Supplemental EIR for the Montanera Project* and *City of Orinda Resolution 13-05,* and the Resource Management Plan and Biological Opinion authorized by the U.S. Department of Fish and Wildlife and the California Department of Fish and Wildlife, the No Project Alternative would incorporate:

- The land use designation of Conservation Easement for the 389-acre Western Hills Open Space
- City of Orinda Wilder Park - 10 parking spaces dedicated to Sibley Preserve access
- Wilder Road South Terminus - District staging area with a restroom and parking for 19 cars and two horse trailers
- Three miles of existing narrow and ranch roads as multi-use trails.

In accordance with recommendations identified in the District 1985 and 2006 Land Use Development Plans (LUDP), additional parking could be added at the Sibley Main Staging Area and Old Tunnel Road, respectively.

Ability to Meet Project Objectives

The *No Project Alternative* would not meet most of the project objectives, specifically creek restoration, trail development, recreation facility and interpretive program elements, operations and maintenance, and climate adaptation and resiliency as shown in *Table 4-1, Comparison of Alternatives to the Purpose and Objectives.*

Environmental Impacts of the No Project Alternative Compared to those of the Project

As summarized in *Table 4-3, Comparison of the Environmental Impacts of the CEQA Alternatives*, the No Project Alternative would have adverse impacts to the environment as invasive, non-native plant species and deteriorating, exposed culverts in the drainage channel would not be removed and existing barriers for the upstream migration of rainbow trout would continue. Failure of culverts and severe, in some cases catastrophic, and continued erosion around the culverts containing Alder Creek that have created sink holes and unstable ground would continue and possibly accelerate threatening public safety and potentially precluding future public access. The Project site would not be restored with native vegetation, and riparian habitat would not be created, or enhanced. Deterioration of the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features and risk to the public and staff. Continued deterioration of facilities and site resources and associated risks to public safety could lead to the eventual long-term closure of recreation/ staging units in the Project area, thereby reducing parks services in this region. Degrading geological and soils conditions could result in increased soil erosion, loss of topsoil, and sedimentation transport off site into San Leandro Creek, which may negatively affect spawning conditions and habitat conditions for rainbow trout. The existing road that provides a loop turn-around near the park residence is not functional due to erosion around this culvert, making emergency vehicle access risky and challenging. Elimination of the water system and emergency communication system recommended in the Proposed Project would not meet Project objectives for fire hazard reduction and emergency response objectives in the McCosker sub-area. Lack of implementation of Proposed Project improvements would limit opportunities to reduce greenhouse gases that could occur with improvements neighborhood connections for bicycle and pedestrian travel that could serve to reduce vehicle trips, the installation of electric changing stations, which would benefit air quality by encouraging use of electric vehicles, and the incorporation of alternative energy sources, such as solar into the design of facilities.

The No Project Alternative would avoid all construction-related short-term impacts, because no excavation or grading would occur to restore the stream, construct trails, parking lots and recreational facilities. Plantings to restore the riparian corridor along the Alder and Leatherwood Creek would not be required. Therefore, there would be no potential to cause wind-blown dust that could generate particulate matter or use of diesel-powered construction equipment emitting criteria pollutants and violate air quality standards (*Impacts AIR-1 – AIR-6,*); no disruption to protected wildlife species (*Impact BIO-1*); no tree removal (*Impact BIO-2*); no alteration of jurisdictional waters or wetlands or habitats (*Impact BIO-3*); no potential to encounter significant archaeological resources or disturb human remains (*Impacts CUL-1* and *CUL-3*); no potential to encounter significant paleontological resources (*Impact CUL-2*); no potential to create a significant hazard through the transport, use, disposal and accidental release of contaminated soil (*Impact HAZ-1*); and, no construction activities to exceed standards of the Noise Ordinance (*Impact NOI-4*).

Alternative 2: Day Use Focus – Minimal Improvements - Reduced Restoration

Description of Alternative 2

The purpose of Alternative 2 is to identify the minimum specific project features that are critical to open the site to the public more broadly.

The *Day Use Focus-Minimal Improvements -Reduced Restoration Alternative* (Refer to *Figure 4-1, Alternative 2, McCosker Sub-area*) would restore Alder Creek at the McCosker site to the full extent of 2,291 linear feet. Fiddleneck Field would be created from the fill material excavated to daylight the Alder Creek Channel. Leatherwood Creek, which is almost entirely culverted, except for a small daylighted segment that is surrounded by oak woodland vegetation would not be restored.

Limited road development, including widening the access road to accommodate two-way, day-use traffic and installing one new vehicle bridge would occur to provide access to the Fiddleneck Field parking area with space for up to 26 cars. Fiddleneck Field development would also include installation of a vault toilet for day use visitors. The existing equipment shed would be retained to facilitate maintenance at the site. Up to five additional parking spaces would also be provided at the existing Wilcox Staging Area.

This alternative would also allow for opening up to 5.2 miles of existing trails and changing use options for 2.4 miles of existing trails Project-wide, including 0.4 miles of added bike use in the Preserve sub-area and 2.0 miles of added dogs on leash use in the McCosker sub-area. There would be no trail development or other facility improvements.

Ability to Meet Project Objectives

Alternative 2 would only partially meet the Project objective for creek restoration as shown in *Table 4-1, Comparison of Alternatives to the Purpose and Objectives*. The remaining objectives for trail development, recreation facility and interpretive program elements, operations and maintenance, and climate adaptation and resiliency would not be fully met.

Environmental Impacts of Alternative 2 Compared to those of the Project

The erosional processes associated the Alder Creek would be addressed through restoration of the creek to the natural conform point with this alternative. Restoration work would enhance downstream water quality and on-site public safety for this creek. As summarized in *Table 4-2, Selected CEQA Alternatives,* Alternative 2 would restore 2,291 linear feet of Alder Creek at the McCosker site, but not the 770 linear feet of Leatherwood Creek. Delaying the Leatherwood Creek restoration has potential hydrologic risks should the aging culvert system fail. The condition of the 36-inch corrugated metal culvert that contains Leatherwood Creek is unknown, however it is likely the same vintage as the other culvert facilities on site, which are showing severe signs of deterioration including scouring of the pipe inverts and dislocation of pipe connections which has resulted in the erosion and sinkholes observed along the Alder Creek alignment. It is estimated that the Leatherwood Creek culvert has up to 25 feet of fill on top of it

SOURCE: ESA, 2018

McCosker Sub-Area Recreation/Staging Unit Proposed Improvements
ALTERNATIVE 2
DAY USE FOCUS - MINIMAL IMPROVEMENTS

FIGURE 4-1 ALTERNATIVE 2: MCCOSKER SUB-AREA CONCEPT PLAN

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

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and large cracks indicative of creeping terrain were also observed on the hillside northeast of the fill area. In addition, the Project design shows the addition of 10 to 15 feet of additional material that would be placed on Fiddleneck Field over the culverts from the excavated material required to daylight Alder Creek. This fill would place an additional burden on the buried pipes. Failure of culverts could threaten public safety and preclude public access to the Fiddleneck Field. It could also result in increased soil erosion, loss of topsoil, and sedimentation transport off site into San Leandro Creek which may negatively affect spawning conditions and habitat conditions for rainbow trout, California red-legged frog, California newt, and other herpetofauna species.

The Project would construct day-use areas only. No rustic campground or supporting amenities of infrastructure would be constructed, including the water supply infrastructure. In addition, existing limitations for public access, trail connectivity, facility upgrades and interpretive opportunities would continue.

Alternative 2 would avoid some minor the construction-related short-term impacts, because no excavation or grading would occur to construct trails. However, by limiting project development, existing limitations for public access, trail connectivity, facility upgrades and interpretive opportunities would continue and the Project area would not be brought up to current energy standards. Elimination of the water system and emergency communication system recommended in the Proposed Project would not meet project objectives for fire hazard reduction and emergency response objectives in the McCosker sub-area. Elimination of the camping opportunities would not fully meet recreation objectives for a rustic group camp and multi-day backpack camp options in the East Bay Hills.

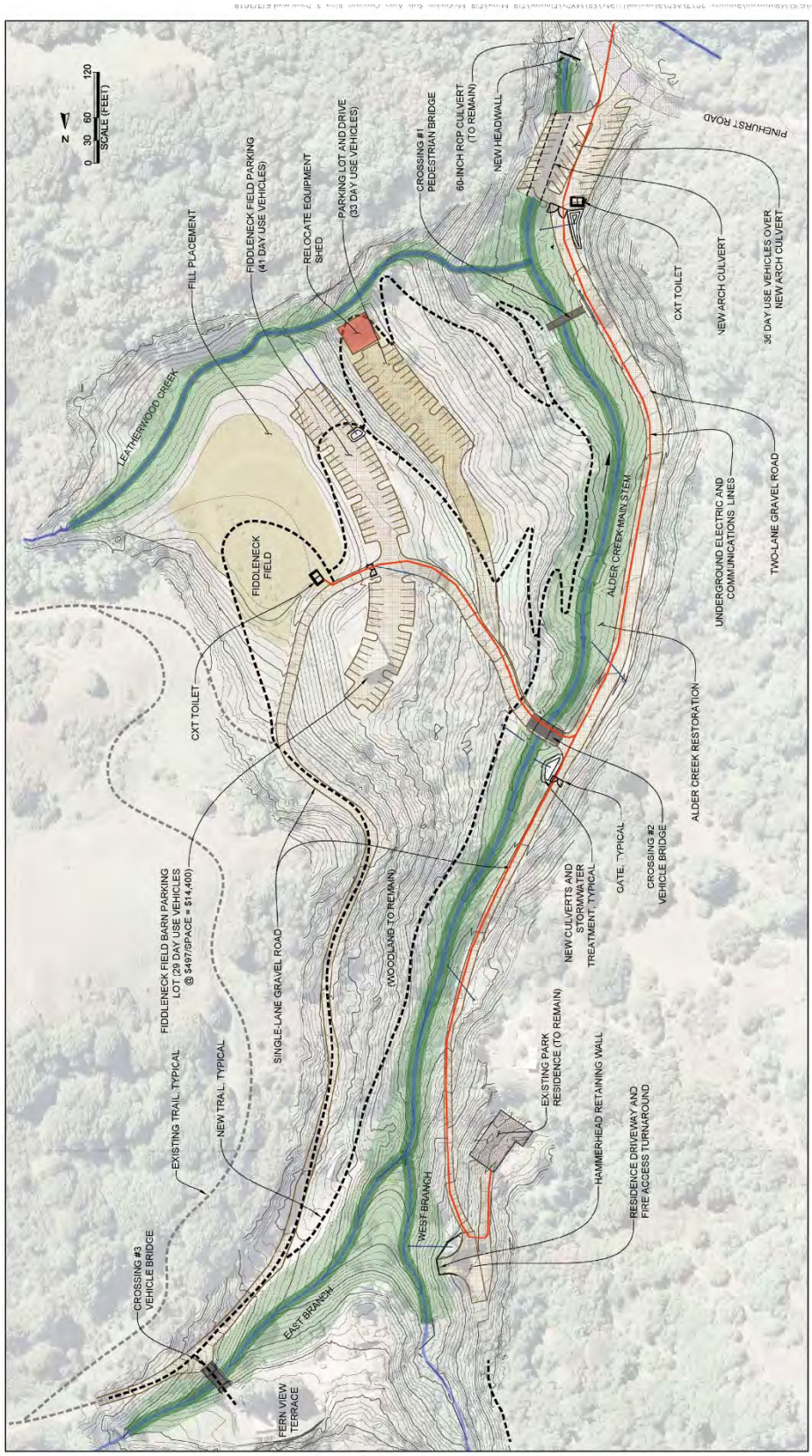
Additionally, while this alternative would reduce construction impacts in the short-term, it could result in more construction in the future as documented deteriorating facilities such as roads, trails and infrastructure need to be repaired, upgraded, and/or replaced.

Alternative 3: Day Use Focus - Parking Maximized

Description of Alternative 3

The purpose of Alternative 3 is to take into consideration population increases by developing a scenario that could optimize capacity/use by maximizing parking opportunities in the Project area. It would include all the added parking proposed by the Proposed Project, plus 81 additional spaces in the McCosker sub-area.

Similar to the Project, the *Day Use Focus -Parking Maximized Alternative* (Refer to *Figure 4-2, Alternative 3, McCosker Sub-area Concept Plan*) would restore Alder and Leatherwood Creek in the McCosker sub-area to the full extent consistent with the Project, construct new recreation and interpretive facilities on Fiddleneck Field. Parking would increase equivalent to the Proposed Project in the Preserve sub-area Recreation/Staging Units and substantially at the McCosker sub-area Recreation/Staging Units to support increased day use activities.



SOURCE: ESA, 2018

McCosker Sub-Area - Recreation/Staging Unit Proposed Improvements
ALTERNATIVE 3
DAY USE FOCUS - PARKING MAXIMIZED

FIGURE 4-2 ALTERNATIVE 3: MCCOSKER SUB-AREA CONCEPT PLAN

ENVIRONMENTAL IMPACT REPORT
Robert Sibley Volcanic Regional Preserve

ESA

East Bay Regional Park District

Expanded parking to accommodate a higher level of day use activities in the McCosker sub-area would involve removal and replacement of a culvert drainage structure to add parking at Eastport (formerly) Wilcox Staging Area, thereby reducing the length of restored channel compared to the Project, which would not be consistent with Project restoration objectives.

Alternative 3 would relocate the equipment shed to accommodate the additional parking spaces in Fiddleneck Field. It would incorporate day use-oriented activities for individual and families including individual picnic sites, vault toilet, trails and self-guided interpretive walks at and between Fiddleneck Field and Fern View Terrace.

Alternative 3 would not add camping or any include any infrastructure or amenities that would support camping activities. Thus, Alternative 3 excludes the pavilion and other overnight camping amenities including the water system, emergency communications, fire pit, and cooking facilities. Elimination of the water system and emergency communications recommended in the Proposed Project would not meet Project objectives for fire hazard reduction and emergency response objectives in the McCosker sub-area. Elimination of the camping opportunities would not fully meet recreation objectives for a rustic group camp and multi-day backpack camp options in the East Bay Hills.

Access to the Fiddleneck Field and Fern View Terrace would involve road development, including widening the access road to accommodate two-way traffic to Fiddleneck Field and installing three bridges, consistent with the Project.

Consistent with the Project, Alternative 3 would include trail expansion connecting the McCosker sub-area to other communities and regional parks by adding approximately 4.3 miles of existing ranch roads and 3.9 miles of new narrow trails for public use to the existing 13.9-mile trail system, including 3.1 miles of trails in Huckleberry Preserve, for a total of 22.1 miles.

Ability to Meet Project Objectives

Alternative 3 maintains most elements presented in the Proposed Project, and presents the potential for additional parking at the Eastport Staging Area and Fiddleneck Field, although it eliminates specific elements related to camping (group and backpacking) and special programming at Fiddleneck Field.

As such, Alternative 3 would meet many of the Project objectives, specifically trail development, operations and maintenance, and climate adaptation and resiliency. While the full extent of the creek daylighting would occur, removing storm-related flooding impediments such as buried culverts and the culvert conveying discharge off the site would be retrofitted to encourage fish movement, Alternative 3 would also include development of a new, open bottom arched culvert intended to provide added parking. This would reduce the area of open channel and riparian woodland habitat. As such, this Alternative would not fully meet habitat and creek restoration objectives. This alternative would not fulfill the recreation facility and interpretive program objectives, and may conflict with trail and recreation objectives associated with consideration of traffic patterns on neighborhood streets and providing parking such that it does not overwhelm the site or interfere with scenic and visual resources.

Environmental Impacts of the Alternative 3 Compared to those of the Project

As summarized in *Table 4-3*, Alternative 3 would have similar temporary construction-related impacts as the Project. Long-term, lesser impacts from not building camping amenities would be offset by the intensification of parking, which would have a greater adverse impact on the natural environment than the Project (*Impact AES-3*); Impacts to the environment would include habitat loss and reduce riparian habitat benefits resulting from the installation of a culvert drainage structure to add parking at Eastport Staging Area, thereby reducing the length of restored channel compared to the Project and the overall parking area compared to the size of the valley floor in the McCosker sub-area would reduce the natural character of the terraced area compared with the Proposed Project which would develop some of the same area as informal meadow areas (*Impact BIO-1, BIO-2, BIO-4*).

Table 4-3, Comparison of the Environmental Impacts of the CEQA Alternatives, below summarizes the environmental impacts of the selected alternatives compared to the significant impacts of the Proposed Project.

4.3 Environmentally Superior Alternative

A summary table showing the differences between the alternatives and the Proposed Project (after mitigation) is provided below in *Table 4-4, Comparison of Impacts of Project Alternatives (After Mitigation*.

TABLE 4-4
COMPARISON OF IMPACTS OF PROJECT ALTERNATIVES (AFTER MITIGATION)

Environmental Issue Area	Project	Alt 1 No Project	Alt 2 Reduced Development & Restoration	Alt 3 Maximized Development
Aesthetics	Less than Significant with Mitigation	While having no impacts associated with construction, this alternative would be ***less beneficial*** than the Proposed Project	Impacts would be ***similar*** to the Proposed Project	***Greater adverse*** impacts than the Proposed Project
Agricultural and Forest Resources	No Impact	***Equivalent*** to the proposed project	***Equivalent*** to the proposed project	***Equivalent*** to the Proposed Project
Air Quality	Less than Significant	***Less of an impact*** than the Proposed Project	***Similar*** to the Proposed Project	***Similar*** to the Proposed Project
Biological Resources	Less than Significant with Mitigation	While having no impacts associated with construction, this alternative would be ***less beneficial*** than the Proposed Project	***Less Beneficial*** than the Proposed Project	***Less Beneficial*** than the Proposed Project
Cultural Resources and Cultural Tribal Resources	Less than Significant with Mitigation	***Less of an impact*** than the Proposed Project	***Similar*** to the Proposed Project for cultural resources, ***less*** of an impact than the Proposed Project for paleontological resources	***Equivalent*** to the Proposed Project

TABLE 4-4
COMPARISON OF IMPACTS OF PROJECT ALTERNATIVES (AFTER MITIGATION) (CONTINUED)

Environmental Issue Area	Project	Alt 1 No Project	Alt 2 Reduced Development & Restoration	Alt 3 Maximized Development
Geology, Soils, and Seismicity	Less than Significant	While having no impacts associated with construction, this Alternative would have g***reater adverse impacts*** than the Proposed Project	***Greater risks and impacts*** to the Proposed Project	Similar risks and impacts to the Proposed Project
Greenhouse Gas Emissions	Less than Significant	While having no impacts associated with construction, this alternative would be ***less beneficial*** than the Proposed Project for climate adaptation	***Similar*** to the Proposed Project	*Equivalent* to, or *greater impacts* than the Proposed Project
Hazards and Hazardous Materials	Less than Significant with Mitigation	No construction risks ***greater adverse impacts*** than the Proposed Project	***Similar risks and impacts*** to the Proposed Project	***Equivalent risks and impacts*** to the Proposed Project
Hydrology and Water Quality	Less than Significant	While having no impacts associated with construction, this alternative would have g***reater adverse impacts*** than the Proposed Project for water quality	***Similar risks and impacts*** to the Proposed Project for construction and *greater* long-term water quality risks than the Proposed Projects	***Similar*** to the Proposed Project
Land Use and Land Use Planning	No Impact	***Equivalent*** to the Proposed Project	***Equivalent*** to the Proposed Project	***Equivalent*** to the Proposed Project
Mineral Resources	No Impact	***Equivalent*** to the Proposed Project	***Equivalent*** to the Proposed Project	***Equivalent*** to the Proposed Project
Noise	Less than Significant with Mitigation	***Less of an impact*** than the Proposed Project	***Similar*** to the Proposed Project during construction activities, but shorter duration	***Equivalent*** to the Proposed Project
Population and Housing	No Impact	***Equivalent*** to the Proposed Project	***Equivalent*** to the Proposed Project	***Equivalent*** to the Proposed Project
Public Services	Less than Significant with Mitigation	While having no impacts associated with construction, this alternative would be ***less beneficial*** than the Proposed Project	***Similar*** to the Proposed Project	***Equivalent*** to the Proposed Project
Recreation	Less than Significant with Mitigation	While having no impacts associated with construction, this alternative would be ***less beneficial*** than the Proposed Project	While having no impacts associated with construction, this alternative would be ***less beneficial*** than the Proposed Project in accommodating anticipated increase in added use	***Similar construction impacts*** to the Proposed Project, this Alternative could accommodate more day use visitors, but would not accommodate overnight use, thus ***less beneficial*** in meeting project objectives

TABLE 4-4
COMPARISON OF IMPACTS OF PROJECT ALTERNATIVES (AFTER MITIGATION) (CONTINUED)

Environmental Issue Area	Project	Alt 1 No Project	Alt 2 Reduced Development & Restoration	Alt 3 Maximized Development
Transportation and Traffic	Less than Significant	***Similar LOS*** to the Proposed Project	***Similar LOS*** to the Proposed Project	***Similar LOS*** to the Proposed Project
Utilities and Service Systems	Less than Significant with Mitigation	While having no impacts associated with construction, this alternative would be ***less beneficial*** *than* the Proposed Project	Somewhat *less* than the Proposed Project with some elements associated with meeting current energy standards and emergency support being ***less beneficial*** than the Proposed Project	Somewhat *less* than the Proposed Project with some elements associated with meeting current energy standards and emergency support being ***less beneficial*** than the Proposed Project

Identification of an Environmentally Superior Alternative

CEQA requires that an environmentally superior alternative be identified.

No Project Alternative

The No Project Alternative would avoid most environmental impacts associated with construction of the Proposed Project, including cultural resources, but would not meet any of the Project objectives. In the McCosker sub-area invasive, non-native plant species and deteriorating, exposed culverts in the drainage channel would not be removed. The Project site would not be restored with native vegetation, riparian habitat would not be created, and there would not be an enhancement in overall visual or biological quality of the McCosker site as would occur under the Proposed Project.

Overall, although the No Project Alternative would not have construction impacts, it would not produce the aesthetic, biological, geological, greenhouse gas, public service, recreation or utility benefits provided by the Proposed Project. Thus, the No Project Alternative would be *less beneficial* than the Proposed Project for these elements.

Moreover, while the No Project Alternative avoids potential impacts to geology and soils, and hydrology and water quality that could result during construction of the Proposed Project elements, the creek channels and existing graded pads in the McCosker sub-area would continue to degrade, potentially increasing damage to site features, safety risks to the public and staff, and an increased risk of sediment and hazardous material transport into the receiving waters of San Leandro Creek. As such, the No Project Alternative would have *greater* impacts than the proposed Project pertaining to geology and soils, and hydrology and water quality.

Like the Proposed Project it would have *no impact* on agricultural and forest resources, land use and land use planning, mineral resources, population and housing.

Given that the No Project Alternative would be *less beneficial* than the Proposed Project for aesthetic, air quality, biological, geological, greenhouse gas, public service, recreation and utility

resources, and *greater impacts* than the Proposed Project pertaining to geology and soils, and hydrology and water quality, the No Project Alternative is not considered the environmentally superior alternative.

Alternative 2

Alternative 2 would consist of a limited set of improvements with a focus on day use activities and restoration in the McCosker sub-area. This alternative would not include any additions to the existing trail system, including ADA accessibility improvements, or the existing infrastructure system. Water use for temporary irrigation for plant establishment would be slightly less because the habitat restoration area would be reduced. Alternative 2 would involve less grading and land disturbance than the Proposed Project. Alternative 2 would partially, but not fully meet each of the Project objectives, which are presented above and in *Chapter 2, Project Description*.

Project Alternative 2 would have a similar impact on Cultural resources in the McCosker sub-area and a *lesser environmental impact* than the Project on paleontological resources as trail development would not occur in soils with a high paleontological sensitivity.

Alternative 2 would be *less beneficial* than the Project for biological resources, as it would not fully restore creek channels contained in deteriorating and buried metal and concrete pipes, *less beneficial* for recreation, as it would not accommodate overnight use or add to trail connectivity, and *less beneficial* for utilities because it would not include enhancements to the existing utility infrastructure in the Preserve and McCosker sub-areas.

Alternative 2 would have a *similar or equivalent effect* on aesthetic, air quality, seismicity, greenhouse gases, hazards and hazardous materials, hydrology and water quality, noise, public services, and traffic based on the projected construction impacts and services and effects post construction. As Alternative 2 would have less site disturbance, including trail development in steep terrain, and in some areas soils with a high paleontological sensitivity, it would have a *less impact* on paleontological resources.

However, while Alternative 2 would restore 2,291 linear feet of Alder Creek at the McCosker site, it would not include restoration of the 770 linear feet of Leatherwood Creek. Delaying the Leatherwood Creek restoration has potential risks. Should this culverted creek fail, Alternative 2 would have *greater impacts* than the proposed Project pertaining to geology and soils, and hydrology and water quality, including a potential increase in soil erosion, loss of topsoil, and sedimentation transport off site into San Leandro Creek which may negatively affect spawning conditions and habitat conditions for rainbow trout, California red-legged frog, California newt, and other herpetofauna species.

Like the Proposed Project it would have *no impact* on agricultural and forest resources, land use and land use planning, mineral resources, population and housing.

Alternative 3

Alternative 3 would involve a similar amount of grading and land disturbance as the Proposed Project, including trail development and in the McCosker sub-area creek restoration. However,

the focus on maximizing parking to accommodate day use activities would result in a greater developed area.

Alternative 3 would fully meet the Project objectives for trail development. Alternative 3 would partially meet the Project objectives for recreation and interpretive facility and program elements, operations and maintenance, climate change and resiliency.

Alternative 3 would be *less beneficial* than the Proposed Project for creek and habitat objectives as there would be habitat loss and reduced riparian habitat benefits resulting from the installation of a culvert drainage structure to provide parking at the Eastport Staging Area, which would reduce the length of restored channel compared to the Project. This alternative would be *less beneficial* than the Proposed Project for aesthetic resources due a larger area at the McCosker site that would be developed for parking, recreation because opportunities for camping and ancillary amenities would not be provided, and public services because emergency communication and water storage facilities would not be developed.

This alternative would have *equivalent or greater impacts* for greenhouse gas emissions from more vehicle use, but no "green infrastructure development to support electric vehicle use.

Alternative 3 would have *similar or equivalent effects* on air quality, cultural resources and cultural tribal resources, geology, soils, and seismicity, hazards and hazardous materials, hydrology and water quality, noise, and public services elements.

Like the Proposed Project it would have *no impact* on agricultural and forest resources, land use and land use planning, mineral resources, population and housing.

Superior Alternative

In this case, the Proposed Project would be the environmentally superior alternative.

While the No Project Alternative would have no short term construction impacts and Alternative 2 would have lesser short-term construction phase impacts through less construction activities, including potential impacts paleontological resources, and lesser long-term operational impacts through less gain in developed recreation amenities, and a smaller overall development footprint, these alternatives would have *greater environmental impacts* than the Project with respect to geology and soils, and hydrology and water quality and biologic resources should the culverts containing Leatherwood Creek fail. Additionally, they would be less beneficial for riparian woodland establishment through no or reduced creek habitat creation. Alternative 3 is not considered the environmentally superior alternative as it would have less habitat creation, less emergency response improvements, and less recreation benefits, as well as only partially meeting the Proposed Project objectives.

Therefore, the Proposed Project would be the environmentally superior alternative as it would:

- Restore the largest area of creek channel reducing existing adverse geologic and hydrologic hazard conditions through the establishment of a properly sized channel, the creation of steps

and step pools that use rock or wood, and the establishment riparian vegetation using native plantings and soil bioengineering principles.

- Have the greatest benefits to:

    1) Aesthetics from developing the recreation site with landscaping to screen parking, define use areas and augment the natural character of a previously disturbed site

    2) Biological resources through the creation of four acres of riparian woodland and aquatic habitat that could support rainbow trout, California red-legged frog, California newt, and other herpetofauna species

    3) Fire hazard and emergency response through water supply and communication improvements

    4) Recreation from added day use and destination site amenities, including expanded interpretive program/rustic group camping area that could a) offer a variety of outdoor education programs with universal access directed at serving families, seniors and persons with disabilities, and b) offer close to home overnight camping opportunities that could encourage multi-day treks along the East Bay Hills consistent with District regional trail objectives and public health objectives

    5) Added trail connectivity for multiple types of users to encourage to access this parkland area from neighboring communities

    6) Energy conservation programs, including solar and added bike parking and add electric recharging stations that would encourage use of alternative transportation options that would result in a reduction in petroleum emissions and vehicle traffic noise when accessing the Project area.

4.4 Alternatives Considered but Rejected from Further Analysis

CEQA *Guidelines § 15126.6* sets forth several requirements regarding the consideration of alternatives in an EIR. This section, and related case law, hold that alternatives that are not reasonable or are infeasible need not be discussed at length; alternatives that do not offer substantial environmental advantages over the Project can be rejected from consideration; and alternatives that do not accomplish most of the basic objectives of the Project can be excluded from detailed analysis. Accordingly, this section briefly summarizes alternatives considered, but rejected from further analysis.

4.4.1 Development Intensity

As the development scenarios are focused on the McCosker sub-area and this was the area of focus at the community meetings, this section focuses recreation facility development in the McCosker sub-area. Development alternatives considered included: 1) botanic gardens; 2) highly developed parkland areas; and 3) meeting/event facilities. Each of these alternatives were considered as potentially feasible, as these types of recreation development can be found at other District parks with similar acreage (2.8 acres) to the previously disturbed area at the McCosker

site. Clustering the area of development to previously disturbed sites was set as a parameter in keeping with the District Master Plan for a Regional Preserve which calls for Recreation/Staging Units providing for public access and services to comprise no more than five percent of the area and further states that higher levels of use and concentrations of service facilities should be clustered and located along the edges of a park.

A description of each of the options considered and a summary of reasons why these alternatives were determined to be unreasonable, infeasible, or not offering substantial advantages over the Proposed Project is provided in *Table 4-5- Alternatives Considered, but Rejected from Further Consideration.*

TABLE 4-5
ALTERNATIVES CONSIDERED, BUT REJECTED FROM FURTHER CONSIDERATION

Potential Alternative Identified	Description	Ability to Meet Project Objectives and Constraints on Implementation
Botanic Garden	• Developed garden devoted to the collection, growth, display, and preservation of the native plants with interpretive information about plants and habitat • Visitor center for lectures and slide shows • Building, garden and parking - 10 acres • Tours 20 people, 20-40 cars	Consistency with Objectives: • Could partially meets some of the Project Objectives Reasons for Rejection: • Size of development imprint on the site • Anticipated visitor demand and associated parking requirements along with botanic garden would exceed site capacity • Transformation of area from native habitat to constructed habitat • Infeasibility to meeting infrastructure requirements • Access constraints Public support: • Community members expressed opposition to development of this intensity; felt creek restoration with habitat and interpretive amenities would better meet project objectives
Highly Developed Parkland Areas	• Open area, picnicking, play area and swimming and parking – 9+ acres developed area • 10 reservable picnic sites - 35 – to 300 people	Consistency with Objectives: • Would not meet most of the project objectives Constraints on Implementation: • Size of development imprint on the site • Anticipated visitor demand and associated parking requirements along with the developed recreation amenities would exceed site capacity • High impact on site resources • Transformation of area from natural to developed environment • Infeasibility to meeting infrastructure requirements • Access constraints • Site could not accommodate development at this scale and creek restoration

TABLE 4-5
ALTERNATIVES CONSIDERED, BUT REJECTED FROM FURTHER CONSIDERATION (CONTINUED)

Potential Alternative Identified	Description	Ability to Meet Project Objectives and Constraints on Implementation
		Public support: • Community members expressed opposition to development of this intensity.
Meeting and Event Facility	• Meeting and event facility for 130 -164 people and 28-30 cars with the building and parking encompassing 0.9 – 1.3 acres	Consistency with Objectives: • Would not meet most of the project objectives: Constraints on Implementation: • Size of development imprint on the site • Anticipated visitor demand and associated parking requirements along with a building of this size would exceed site capacity • High impact on site resources • Transformation of area from natural to developed environment • Infeasibility to meeting infrastructure requirements • Access constraints • Site could not accommodate development at this scale and creek restoration Public support: • Community members expressed opposition to development of this intensity.

4.4.2 Alternative Location

Alternative locations for the provisions of the programs and facilities identified in the Proposed Project were not considered because: 1) the overriding purpose of the Project is to Append the 1985 LUPD to incorporate the Western Hills and McCosker sub-areas and developed local trails into Robert Sibley Volcanic Regional Preserve in accordance with prior District, City of Orinda and regulatory agency decisions; and 2) the proposed programs and physical improvements are specific to the unique conditions of the Project area. Selecting an alternative location would fundamentally fail to meet the purpose and objectives of the Proposed Project, including restoration of creeks, connectivity to regional trails in the East Bay Hills and connections to surrounding communities, and improving existing parking and utility infrastructure within the designated Project area.

4.4.2 Restore McCosker Site to Original Landforms

Notice of preparation comments included a comment on the consideration of restoring the McCosker site to the original landforms. This alternative was not considered because: 1) the site landforms have been substantially altered over time by human activities that have extended from the 1800s to the near present through activities that have included ranching, quarrying, road and trail construction, and residential habitation that would make it difficult to ascertain what the original landforms were; 2) a return to original landforms, if it could be ascertained what these landforms were, could result in greater environmental impacts than the Project from the massive grading activities that would be required on a site that contains fill areas exceeding twenty feet in depth in some areas; and 3) this alternative would not meet many of the Project objectives.

CHAPTER 5
Other CEQA Considerations

Consistent with CEQA *Guidelines Section 15126.2*, this section summarizes the growth-inducing effects, significant irreversible environmental changes, significant and unavoidable environmental effects, and effects found to be less than significant associated with the Project. This section also provides a summary of cumulative impacts, which are separately discussed in more detail for each topic section in *Chapter 3, Project Analysis*.

5.1 Growth-Inducing Impacts

CEQA *Guidelines Section 15126.2(d)* requires that an EIR evaluate,

> "*the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this [evaluation] are projects which would remove obstacles to population growth .... It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*"

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involved construction of new housing. A project can have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) that would encourage development of new housing for employees, or if it would involve a substantial construction effort creating short-term employment opportunities. Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. Infrastructure projects could also indirectly stimulate growth by enhancing access to properties, or increasing their desirability for development.

Increases in population could tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The CEQA *Guidelines* also require analysis of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The timing, magnitude and location of land development and population growth are based on various interrelated land use and economic variables. Key variables include: 1) regional economic trends; 2) market demand for residential and non-residential uses; 3) land availability and cost; 4) the availability and quality of transportation facilities and public services; 5) proximity to employment centers; 6) the supply and cost of housing; 7) and regulatory policies or conditions.

The growth inducing impacts analysis addresses the potential of the project for growth inducement in the project vicinity or broader area. Under CEQA, a project is generally considered to be growth-inducing if it would result in any one of the following:

1. Extension of urban services or infrastructure into a previously unserved area;
2. Extension of a transportation corridor into an area that may be subsequently developed; or,
3. Removal of obstacles to population growth (such as provision of major new public services to an area where those services are not currently available).

5.1.1 Special District Powers and District Master Plan Policy Guidelines

The District is an independent special district under the State Public Resources Code. Under the California Public Resources Code (Article 3, 5500 series). As a Special District, the District has the power to: *"...acquire land...to plan...develop...and operate a system of public parks… trails, natural areas, ecological and open space preserves, … and other facilities for public recreation, for the use and enjoyment of all the inhabitants of the District*." Residential and non-residential uses, transportation facilities and public services, employment centers, and housing are beyond the authority of the District under the State Public Resources Code.

The Project is a Land Use Plan Amendment (LUPA), the purpose of which, in accordance with 2013 District Master Plan Policy PRPT12, is "*to protect park resources while providing for regional recreational use and access by maintain up-to-date information about each of its parks*." Per the District Master Plan, the Project describes: 1) the various levels of resource protection and recreational intensity in the Project area, and 2) park and trail development projects and land management strategies for the Project area.

This EIR for the Project analyses: 1) land development associated with recreation and land conservation and restoration in *Section 3.10, Land Use*; 2) population growth trends as they relate to visitor use and experience expectations in *Sections 3.13, Population and Housing* and *3.15, Recreation*; and 3) the availability and quality of transportation facilities and public services as they relate to providing access to, and services for, the Project in *Sections 3.16 Transportation and Traffic* and *3.17, Utilities*. Regulatory policies or conditions as they apply to the District parklands are described in each of the sections in *Chapter 3, Project Analysis*.

5.1.2 Direct Impacts

The proposed Robert Sibley Volcanic Regional Park Land Use Plan Amendment Project (LUPA, Project) is a restoration and public access and recreation project. As such, as discussed in *Chapter 3, Section 3.13, Population and Housing*, the Project would not involve the construction of new housing or result directly in any new housing or jobs in the area that would have any direct growth-inducing impacts.

5.1.3 Indirect Impacts

The Project is a restoration and public access and recreation project. The recreation and public access improvements include six main elements: 1) improvements to existing staging areas, 2) improvements to existing roadways, 3) bridge installation, 4) trail system expansion, 5) recreation facility development, and 6) improvements to utility infrastructure. As such, the Project would not establish substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) that would encourage development of new housing for employees, or remove obstacles to additional growth and development through the development of additional infrastructure systems that could stimulate growth.

Extension of Urban Services or Infrastructure

Utility infrastructure improvements in the Preserve sub-area supporting individual day use would include replacement of a chemical toilet with a vault toilet and installation of a water tank in the Sibley backpack campsite. Utility infrastructure improvements in the McCosker sub-area supporting individual day use and reservation-only group activities would include: 1) development of a potable water supply including installation of a 4,000-gallon water tank and water treatment system and installation of a distribution pipe extending from an existing spring, for which the District has water rights, to the Fiddleneck Field recreation area; 2) connections to existing electrical and communications services to meet recreation and maintenance needs; 3) installation of fencing and gates to control site access; and 4) installation of sealed vault toilet restrooms. Although on-site infrastructure improvements would occur as part of the Project, these improvements would occur within lands owned and managed by the District for land conservation and recreation purposes. As a result of the Project infrastructure improvements, the public recreation opportunities of this area would be enhanced, but the improvements would not have any indirect growth-inducing impacts on adjacent communities.

Extension of Transportation Corridors

Infrastructure improvement activities would involve improvements to existing roadways, both paved and natural surface ranch roads, including bridge installation, and extension of the trail system. Improvements in the Preserve sub-area would improve a deteriorating roadway and add parking and improvements at the Old Tunnel Road Staging Area. In the McCosker sub-area, two existing roadways, referred to the Ninebark Trail and the Meadow Barley Trail would be improved to provide access to proposed recreation areas and maintains access to the existing park residence. The Project trail system would incorporate existing trails in Robert Sibley Volcanic Regional Preserve, the trail system set forth in the Western Hills Open Space Long Term Management Plan, and new trails proposed within the three sub-areas with connections through the eastern side of Huckleberry Preserve. This expanded trail system would improve circulation within the Project area and provide greater connectivity with other District lands, including connections to a series of District campsites, and access from adjoining residential communities consistent with the Project objectives discussed in *Chapter 2, Project Description, Section 2.4, Project Purpose and Statement of Objectives*.

The Project would not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The Project would not change the existing roadway design or existing access points to the local roadway network, or change existing roadway design and or impede the travel of emergency vehicles on adjoining transportation corridors. The Project would include installation of wayfinding signs to direct park visitors to existing visitor access points. As discussed in *Chapter 3, Section 3.16 Transportation and Traffic*, the roadways providing access to the six existing Project access intersections currently operate at acceptable LOS B or better and are anticipated to continue to operate at acceptable LOS B or better after the addition of Project traffic. As a result of the Project, the staging area parking and the trail system would be enhanced, but would not have any indirect growth-inducing impacts on adjacent transportation corridors.

Removal of Obstacles to Population Growth

CEQA *Guidelines Section 15126.2(d)* states that an EIR should discuss "*the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment*."

Growth can be induced in several ways, including through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through precedent-setting action. CEQA requires a discussion of how a project could increase population, employment, or housing in the areas surrounding the Project, as well as an analysis of the infrastructure and planning changes that would be necessary to implement the project.

Projects that are characterized as having significant impacts associated with the inducement of growth are frequently those that would remove obstacles to additional growth, such as the expansion of sewer or water facilities that would permit construction of more development in the service area covered by the new facilities.

Chapter 3, Section 3.13 Population and Housing, analyzes the Project's overall effect on population and housing. Based on this analysis, the Project would not directly increase population or housing in the Project area, or foster significant economic or population growth, and therefore would not result in significant growth-inducing impacts or significantly exceed growth that is projected for the adjacent cities of Orinda and Oakland, or the unincorporated community of Canyon.

The Project is a restoration and public access and recreation project. As a result of the Project, the public recreation opportunities of this area would be enhanced. As discussed in *Chapter 3, Section 3.17, Utilities and Service Systems,* the water supply system in the McCosker sub-area would be expanded and as discussed in *Chapter 3, Section 3.16 Transportation and Traffic*, the roadway systems within the Preserve and McCosker sub-areas would be improved and the trail system would be expanded throughout the Project Area. These improvements would be located on lands managed by the District for District parkland purposes and would not overburden existing infrastructure so as to require construction of new facilities by adjoining communities that could result in significant impacts. Nor, would these improvements would remove obstacles to growth leading to construction of more development in the surrounding communities.

5.2 Significant and Irreversible Environmental Changes

Per CEQA *Guidelines Section 15127(a),* irreversible changes, need be included in connection with the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency. CEQA *Guidelines Section 15126.2(c)* specifies that an EIR discuss potential impacts associated with a proposed project that may be considered to be significant and irreversible for the following reasons:

- Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes the removal or non-use thereafter unlikely;
- Primary impacts (e.g., removal of agricultural lands) and, particularly, secondary impacts (such as a highway improvement that provides access to a previously inaccessible area) generally commit future generations to similar uses; and
- Irreversible damage can result from environmental accidents associated with the project.

5.1.4 Use of Nonrenewable Resources

Appendix F (Energy Conservation) of the *CEQA Guidelines* provides that potentially significant energy implications of a project must be considered in an EIR, with particular emphasis on avoiding or reducing the inefficient, wasteful, and unnecessary consumption of energy.

Public Resources Code Section 21100(b)(3) further specifies that an EIR shall include mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy.

Resources that would be permanently and continually consumed by implementation of the Project include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources. To encourage the conservation of resources, the Project includes secured bicycle storage facilities to facilitate bike use, and provisions to accommodate electric vehicles. These measures are intended to promote smart mobility when combined with connections to regional bike routes and trails as described in *Chapter 2, Project Description, Section 3.3.6 - Existing Trail System* and illustrated in *Figure 2-3, Existing and Proposed Regional Trails and Local Campsites*. Additionally, the Project objectives incorporate climate adaptation and resiliency strategies into the recreational facility design and material selection, including use of alternative energy sources such as solar into the Project design, where feasible and appropriate, and incorporates recycling and composting measures consistent with the District's sustainability policy as described in *Chapter 3, Section 3.17, Utilities*.

Construction activities related to the Project, previously analyzed in *Chapter 3, Sections 3.7 Greenhouse Gas Emissions, 3.16 Transportation and Traffic* and *3.17, Utilities and Service Systems* of this EIR, would result in the irretrievable commitment of nonrenewable energy

resources, primarily in the form of fossil fuels, natural gas, and gasoline for automobiles and construction equipment. With respect to the operational activities of the Project, compliance with all applicable building codes, as well as mitigation measures in the EIR, would ensure that natural resources are conserved to the maximum extent practicable. It is also possible that new technologies or systems would emerge, or would become more cost-effective or user-friendly, and would further reduce the Project's reliance upon nonrenewable energy resources. Consequently, impacts associated with nonrenewable energy resources would *be less than significant*.

5.1.5 Commit Future Generations to Similar Uses

Infrastructure improvement activities would involve improvements to existing roadways, both paved and natural surface ranch roads, including bridge installation, and extension of the trail system within the Project area owned and managed by the District. The Project would not change external existing roadway designs or existing access points to the local roadway network, impede the travel of emergency vehicles on adjoining transportation corridors, or involve development of highway or roadway improvements that would provide access to a previously inaccessible area leading to urban development or other types of uses where conversion of the Project area from a regional preserve would result. Consequently, impacts associated with changes in land use would *be less than significant*.

5.1.6 Damage from Environmental Accidents

The CEQA *Guidelines* also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the Project. Completion of the Project would not involve the routine use, transport, storage, or disposal of hazardous wastes other than small amounts of construction chemicals and non-acute hazardous materials by the contractor and by District as part of the creek restoration and public access and recreation improvements. As stated in *Chapter 3, Section 3.9, Hazards and Hazardous Materials*, of the EIR, these materials are regulated through a series of federal, state, and local laws and regulations.

State and local laws and regulations that are administered and enforced by the U.S. Environmental Protection Agency (EPA), U.S. Department of Transportation (DOT), the California Environmental Protection Agency (Cal/EPA), the Department of Toxic Substances Control (DTSC), the San Francisco Bay Regional Water Quality Control Board (RWQCB), and the California Department of Pesticide Regulation have been enacted to reduce risks associated with the routine use, storage, and transportation of hazardous materials in connection with construction activities to acceptable levels. Compliance with these existing requirements would ensure that the potential for the completed project to cause significant irreversible environmental damage from an accident or upset of hazardous materials would be *less than significant*.

Once construction activities are completed, the District would continue to manage the Project area to benefit biological resources, including conducting pest management activities in compliance with applicable state and federal law and in accordance with the direction contained within the *Master Plan 2013, Wildland Management Policies and Guidelines* (EBRPD 1992 and

2001) and *Pest Management Policies and Practices* (EBRPD 1987), as well as all regulations as dictated by the California Department of Pesticide Regulation.

Consequently, adherence to existing federal, state, and local regulations, and the District Standard Technical Specifications during construction and regulations as dictated by the California Department of Pesticide Regulation post construction would reduce impacts from potential hazards to *less-than-significant levels*.

5.3 Significant and Unavoidable Environmental Impacts

CEQA *Guidelines Section 21100(b)(2)(A)* requires an EIR to identify significant environmental effects that cannot be avoided if a project is implemented. CEQA *Guidelines Section 15126.2(b)* further specifies that all phases of a project must be considered when evaluating its impact on the environment planning, acquisition, development, including significant environmental effects which cannot be avoided if the Project is implemented.

Project construction would result in the following potentially significant short-term impacts, all of which could be mitigated to a *less-than-significant level* with the implementation of regulations, District standard technical specifications, District standard best management practices, and mitigation measures identified in *Chapter 3, Project Analysis*: 1) temporary adverse effects on visual quality, 2) temporary release of particulate emissions generated by excavation, grading, hauling, and other activities, 3) disturbance to special status plants and wildlife, 4) increase in invasive species populations, 5) temporary impacts to wetlands associated with construction of trail drainage crossings, 6) potential discovery of unknown paleontological, pre-contact or historic-era resources, or human remains, 7) potentially hazardous conditions associated with site excavation activities, 8) disruption of parkland services during project construction activities, 9) temporary or periodic increase in ambient noise, 10) short-term construction-related vehicle trips, and 11) solid waste generation from Project construction activities.

Project operation would result in the following potentially significant and significant long-term impacts as described in *Chapter 3, Project Analysis*: 1) permanent alteration of the visual character of the valley floor in the McCosker sub-area, 2) permanent loss of Alameda whipsnake habitat or mortality to snakes, and 3) permanent change in the physical environment from added recreation facilities in the McCosker and Preserve sub-areas and trails project-wide.

All Project impacts were determined to be *less than significant with mitigation* (LSM), meaning that all significant Project impacts could be reduced to a less-than-significant level through the implementation of mitigation measures identified in this EIR.

5.4 Cumulative Impacts

Section 15130 of CEQA requires consideration of the potential cumulative impacts that could result from a project in conjunction with other similar projects in the vicinity. Such impacts can occur when two or more individual effects together create a considerable environmental impact or

compound other environmental consequences. The goal of such an evaluation is twofold: first, to determine whether the combined impacts of all such projects would be cumulatively significant; and second, to determine whether the project itself would cause a "cumulatively considerable" (and thus significant) incremental contribution to any such cumulatively significant impacts. Per Section 15130(b):

> "*The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact*."

The analysis of each environmental topic included in *Chapter 3, Project Analysis*, evaluates possible cumulative impacts considering regional development in combination with the build-out of the Project. Based on this section by section analysis, the Project would not make a significant contribution to any significant cumulative impacts; thus, cumulative impacts from the Project were found to be *less than significant*.

CHAPTER 6
Report Preparation

6.1 Report Preparers / Persons Consulted

This section of the Environmental Impact Report (EIR) lists the personnel responsible for analysis of the Project and Project alternatives.

EBRPD Report Preparers

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Transportation and Traffic
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6.2 Acronyms

AAQS	Ambient Air Quality Standards
AASHTO	American Association of State Highway and Transportation (HS-20 is a 36-ton load rating)
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act of 1990
ADI	areas of Direct Impact
ADT	Average Daily Traffic
ASTM D-1557	Standard Test Methods for Laboratory Compaction of Soil
ASU	Air Supply Unit
AWS	Alameda Whipsnake
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BMPs	Best Management Practices
BP	Before Present
Cal FIRE	California Department of Forestry & Fire Protection
CalEEMod	California Emission Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CARE	Community Air Risk Evaluations
CBC	California Building Code
CCCSWA	Central Contra Costa Solid Waste Authority
CCEHD	Contra Costa Environmental Health Division
CCR	California Code of Regulations
CCTA	Contra Costa Transportation Authority
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHRIS	California Historical Resources Information Center
CMA	Congestion Management Agency

CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
Corps	Army Corps of Engineers
CRLF	California Red-legged Frog
CRPR	California Native Plant Society Rare Plant Ranking
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted Decibels
DBH	Diameter at Breast Height
Dispatch	Emergency Communication Center
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EIR	Environmental Impact Report
EMS	Emergency Medical Service
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EVMA	Emergency Vehicle and Maintenance Access
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIP	Federal Implementation Plan
FTA	Federal Transit Administration
GHAD	Geologic Hazard Abatement District
GHG	Greenhouse Gas
HCM	Highway Capacity Manual
HRA	Health Risk Assessment
HSC	California Health and Safety Code

Hz	hertz
IPM	Integrated Pest Management
ITE	Institute of Transportation Engineers
KHOC	Kids Healthy Outdoors Challenge
kV	Kilovolts
L_{10}	Noise Level Exceeded 10 Percent
L_{50}	Median Noise Level
L_{dn}	Day-Night Average Noise Level
L_{eq}	Equivalent Continuous Noise Level
L_{max}	Maximum Noise Level
LID	Low Impact Development
LOS	Level of Service
LTMP	Long Term Management Plan
LUDP	Land Use Development Plan
LUPA	Land Use Plan Amendment
MAST	Maintenance and Skilled Trades
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
MOFD	Moraga-Orinda Fire District
MPO	Metropolitan Planning Organization
MRA	Mutual Response Aid
MRP	Municipal Regional Stormwater Permit
MRZ	Mineral Resource Zones
MSA	Magnuson-Stevens Act
MTC	Metropolitan Transportation Commission
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum of 1929
NMFS	National Marine Fisheries Service (NOAA Fisheries)
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center

OHP	Office of Historic Preservation
OPDMD	Other Power-Driven Mobility Devices
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PAC	Park Advisory Committee
PCE	Passenger Car Equivalent
PG&E	Pacific Gas & Electric Company
PM	Particulate Matter
PMMP	Paleontological Monitoring and Mitigation Plan
POTW	Publicly Owned Treatment Works
PPV	Peak Particle Velocity
PRC	Public Resources Code
Q	Quaternary Geologic Unit, Alluvium Deposits
Qls	Quaternary Geologic Unit, Landslide Deposits
RCP	Reinforced Concrete Pipe
RDM	Residual Dry Matter
Rms	Root Mean Square
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act of 1975
SMF	Special Management Feature
SMGB	State Mining and Geology Board
SPF	Special Protection Feature
SR-24	State Route Highway 24
SSC	Species of Special Concern
SVP	Society for Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant

Tcc	Tertiary Geologic Unit, Claremont Chert
Tm	Tertiary Geologic Unit, Monterey Formation
Tmb	Tertiary Geologic Unit, Moraga Formation-basalt
Tor	Tertiary Geologic Unit, Orinda Formation
Tso	Tertiary Geologic Unit, Sobrante Sandstone
Tst	Tertiary Geologic Unit, Siesta Formation
UCMP	University of California Museum of Paleontology
USA	Underground Service Alert
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UTAP	Universal Trail Assessment Process
VdB	Vibration Levels
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WEAP	Worker Environmental Awareness Program
WHF	Wildlife Heritage Foundation

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6.4 Distribution List

The following agencies and libraries will be receiving this draft EIR during the 45-day public review period:

1. State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
2. State of California, Native American Heritage Commission
3. Caltrans, District 4
4. California State Coastal Conservancy
5. California Natural Resources Agency
6. East Bay Municipal Utility District
7. City of Oakland Public Library, Montclair Branch
8. Contra Costa County Public Library – Orinda Library
9. Contra Costa County Public Library – Moraga Library
10. Canyon Post Office
11. City of Orinda – Parks Department
12. Town of Moraga – Planning Department
13. Contra Costa County – Board of Supervisors
14. Contra Costa County – Transportation, Planning, and Public Works Departments
15. City of Oakland – Planning Department