

Sibley Volcanic Regional Preserve



FINAL LAND USE PLAN AMENDMENT

INCORPORATING THE McCOSKER PARCEL
AND WESTERN HILLS OPEN SPACE

2018

*Adopted November 20, 2018
(Resolution No. 2018-11-288)*

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 – 288

November 20, 2018

AUTHORIZE THE ADOPTION OF LAND USE PLAN AMENDMENT FOR ROBERT SIBLEY
VOLCANIC REGIONAL PRESERVE LAND USE PLAN:
ROBERT SIBLEY VOLCANIC REGIONAL PRESERVE

WHEREAS, Robert Sibley Volcanic Regional Preserve and Huckleberry Preserve are two of the earliest parks created in the East Bay Regional Park District's regional park system; and

WHEREAS, the proposed amendment to the Sibley Land Use Plan (the LUPA) would double the size of the Sibley and Huckleberry Preserves by adding 639 acres to the preserve area for a total new preserve area of 1,318 acres;

WHEREAS, the proposed LUPA would include a major stream restoration project, which would daylight 3,061 linear feet of creek that was culverted and filled as part of former quarrying and ranching operations, provide new habitat for native rainbow trout and California red-legged frog, and enhance public safety by removing numerous sink holes and repairing eroded embankments that currently exist due to the failing culverted stream system; and

WHEREAS, the proposed LUPA would protect natural resources by protecting 99% of the 1,318 acre preserve; and

WHEREAS, the proposed LUPA would provide new short loop trails and a group camping and interpretation area for up to 50 people;

WHEREAS, the proposed LUPA would enhance visitor experience by providing two new access points, adding parking spaces to existing staging areas, and by adding new restrooms; and;

WHEREAS, on July 23, 2018, the Park District's Park Advisory Committee reviewed the LUPA and Draft Environmental Impact Report (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, the Final EIR was presented to the Park District's Board of Directors who reviewed and considered the information provided in the EIR;

WHEREAS, on November 20, 2018, the Park District's Board of Directors certified that the EIR the project was prepared in compliance with the California Environmental Quality Act (CEQA), and adopted the accompanying Mitigation, Monitoring and Reporting Plan for the EIR and the CEQA Findings Report; and

WHEREAS, in response to comments on the merits of the LUPA, an addition to the LUPA is recommended to clarify that any trail use recommendations in the LUPA that would not be consistent with the Park District's current Ordinance 38, *Park Rules and Regulations*, would be required to come back to the Board for a formal vote to amend Ordinance 38;

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 approves adoption of the Land Use Plan Amendment for the Robert Sibley Volcanic Regional Preserve, with the following amendments:

1. The LUPA, Chapter 5, Plan Implementation, Section 5.1.2.4, Trail System (LUPA, page 5-6) is modified as follows:

"Any changes to existing dog and bike use recommended in the LUPA could not be implemented unless and until the Board modifies Ordinance 38, which currently prohibits dogs on the McCosker Loop Trail, and use of bikes on narrow trails per Section 409.8, 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."; and

2. The LUPA, Chapter 4, Trail System, Section 4-7 is modified to delete recommendations regarding trail uses for the Meadow Barley Trail and the Blue-Eyed Trail. The uses allowed on these trails will be considered as part of the Board of Directors' regular review of Ordinance 38.

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 Wieskamp, 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.

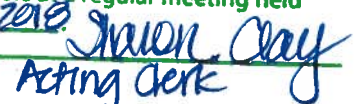
AGAINST: None.
ABSTAIN: None.
ABSENT: None.



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. 2018-11-200 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

Adopted November 20, 2018



Resolution No.: 2018-11-288

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

**ROBERT SIBLEY VOLCANIC REGIONAL PRESERVE
LAND USE PLAN AMENDMENT**

TABLE OF CONTENTS

CHAPTER 1	EXECUTIVE SUMMARY	<u>1-1</u>
1.1	Land Use Plan Amendment Purpose and Contents	1-3
1.2	Land Use Plan Amendment Area	1-3
1.3	Overview of Recommendations	1-3
1.4	Ongoing Programs and Services	1-6
1.4.1	Ongoing Land/Habitat Management Programs	1-6
1.4.2	Operations and Maintenance	1-8
1.4.3	Interpretive and Recreation Services	1-8
1.4.4	Public Safety – Police and Fire Services	1-8
1.5	Project Considerations	1-10
1.5.1	Topography, Soils and Water Quality	1-10
1.5.2	Habitat and Special Status Species	1-10
1.5.3	Fire Hazards	1-10
1.5.4	Planning for Climate Change	1-10
1.5.5	Recreation Development	1-11
1.5.6	Trail Uses and Trail Inclusivity	1-11
1.5.7	Traffic Safety	1-11
1.5.8	Interagency Coordination	1-11
1.6	Land Use Plan Amendment Recommendations	1-12
1.6.1	Resource Restoration and Enhancement	1-12
1.6.2	Public Access, Recreation Facility and Infrastructure Improvements	1-12
1.6.3	Trail System Expansion	1-13
1.6.4	Property Conveyance	1-14
CHAPTER 2	INTRODUCTION	<u>2-1</u>
2.1	Land Use Plan Amendment Overview	2-3
2.2	Land Use Plan Amendment Area	2-4
2.2.1	Regional Context	2-4
2.2.2	LUPA Area and Acquisition History	2-4
2.3	Plan Designation and Annexation	2-8
2.3.1	LUPA Focus	2-8
2.3.2	Prior Planning Studies	2-8
2.3.3	Western Hills Sub-area Conditions	2-9

2.4	Purpose, Goals and Objectives	2-10
2.4.1	Purpose	2-10
2.4.2	Goals	2-10
2.4.3	Statement of Objectives	2-10
2.5	Planning Context	2-14
2.5.1	East Bay Regional Park District Special District	2-14
2.5.2	East Bay Regional Park District Master Plan	2-15
2.6	Planning Process	2-17
2.6.1	Parkland Vision	2-17
2.6.2	Data Gathering, Mapping and Documentation	2-17
2.6.3	Community Engagement	2-18
2.7	Park Facility Naming	2-20
CHAPTER 3	EXISTING CONDITIONS	<u>3-1</u>
Section 3-1 - Existing Conditions Summary Overview		3-3
3.1.1	Summary of Site Conditions	3-3
Section 3-2 - Project Setting		3-7
3.2.1	Natural Features	3-7
3.2.2	Land Use Overview	3-9
3.2.3	Views/Aesthetic Quality	3-15
3.2.4	Climate and Noise	3-25
3.2.5	Topography, Geology and Soils	3-26
3.2.6	Hydrology and Water Resources	3-32
3.2.7	Biological Resources	3-36
3.2.8	Ongoing Land-Habitat Management Programs	3-50
3.2.9	Paleontological and Cultural Resources	3-54
Section 3-3 - Recreation and Interpretation		3-60
3.3.1	Demographics	3-60
3.3.2	Relevant District Facility and Program Types	3-63
3.3.3	Recreation Trends and Preferences	3-64
3.3.4	Existing Access	3-69
3.3.5	Existing Recreation Facilities	3-70
3.3.6	Existing Trail System	3-72
3.3.7	District Trail Campsites in the East Bay Hills	3-74
Section 3-4 - Parkland Services		3-77
3.4.1	District Presence	3-77
3.4.2	District Facilities and Infrastructure	3-82

CHAPTER 4	LAND USE PLAN AMENDMENT RECOMMENDATIONS	<u>4-1</u>
Section 4-1 - Overview of Land Use Plan Recommendations		4-3
4.1.1	Parkland Designations	4-3
4.1.2	Overview of Land Use Plan Amendment Recommendations	4-5
Section 4-2 - Preserve Sub-Area - Public Access, Infrastructure and Recreation		4-9
4.2.1	Overview of Preserve Sub-area Improvements	4-9
4.2.2	Public Access Improvements	4-9
4.2.3	Recreation Facility Development	4-10
4.2.4	Improvements to Utility Infrastructure	4-10
Section 4-3 - Western Hills Sub-Area Property Conveyance and Public Access		4-15
4.3.1	Property Conveyance	4-15
4.3.2	Public Access Improvements	4-16
4.2.3	Recreation Facility Development	4-16
4.2.4	Improvements to Utility Infrastructure	4-16
Section 4-4 - McCosker Sub-Area Public Access, Infrastructure and Recreation		4-19
4.4.1	Overview of McCosker Sub-area Improvements	4-19
4.4.2	Public Access Improvements	4-19
4.4.3	Recreation Facility Development	4-26
4.4.4	Infrastructure Improvements	4-29
Section 4-5 - McCosker Sub-Area Creek Restoration and Enhancement		4-31
4.5.1	Restoration Objectives	4-31
4.5.2	Creek Channel Establishment	4-31
4.5.3	Riparian Habitat	4-32
Section 4-6 - Huckleberry Botanic Regional Preserve Public Access		4-35
4.6.1	Huckleberry Preserve Trail Improvements	4-35
Section 4-7 - Trail System		4-37
4.7.1	Trail System Overview	4-37
4.7.2	Recreation, Environmental and Operation Values	4-37
4.7.3	Trail Types - Standards and Assumptions	4-38
4.7.4	Trail Expansion Recommendations	4-38
4.7.5	Trail Signage	4-45
CHAPTER 5	PLAN IMPLEMENTATION	<u>5-1</u>
5.1	Implementation Programs and Priorities	5-3
5.1.1	Project Priorities	5-3
5.1.2	Construction Phasing, Timing, and Construction Workforce	5-3
5.2	Construction Considerations	5-9
5.2.1	Preserve Sub-area	5-9
5.2.2	McCosker Sub-area	5-9

5.2.3	Preserve and McCosker Vault Toilets	5-12
5.2.4	New Narrow Trails	5-13
5.2.5	Construction Staging	5-16
5.2.6	Construction Safety – Worker Awareness Program	5-16
5.3	Summary of Construction Activities	5-18
5.4	Permits and Approvals	5-22
5.4.1	Permits Required for New Construction	5-22
5.4.2	Permits Previously Obtained	5-22
5.5	Cost of Proposed Improvements	5-23
5.5.1	Preserve Sub-area Public Access Improvements	5-23
5.5.2	Western Hills Sub-area Improvements	5-23
5.5.3	McCosker Sub-area Public Access, Recreation and Creek Restoration Improvements	5-23
5.5.4	New Narrow Trails	5-24
5.6	Construction Financing Strategy	5-24
5.6.1	McCosker Sub-area Public Access and Recreation and Creek Restoration	5-24
5.6.2	Paving Capitalization Program	5-25
5.6.3	MAST Vault Toilet Concrete Building Fund	5-25
5.6.4	Trail Development Program	5-25
5.7	Long-Term Financial Assurances – Endowments and Mitigation Funds	5-25
5.7.1	Overview	5-25
5.7.2	Western Hills Open Space Conservation Easement Endowment	5-25
5.7.3	Zone of Benefit – Western Hills Open Space and McCosker Parcel	5-26
5.7.4	McCosker Pre-donation Improvements	5-27
5.8	Long Term Operations and Maintenance	5-27
5.8.1	District Staffing	5-27
5.8.2	Additional Workforce Options	5-27
5.8.3	Volunteers and Non-Profit Organizations	5-27
5.9	Agency Coordination/Partnerships	5-28
5.10	Community Involvement	5-28
CHAPTER 6	REPORT PREPARATION AND REFERENCES	6-1
6.1	Report Preparation	6-3
6.1.1	Project Team and Support Services	6-3
6.2	References	6-4
6.2.1	Documents	6-4
6.2.3	Websites	6-9
6.2.3	Personal Communications	6-9

TABLES

Table 1-1 - Comparison of Proposed Actions with Existing Conditions	1-7
Table 2-1 - Consistency with Project Objectives	2-14
Table 3-1 - Summary of Site Considerations	3-4
Table 3-2 - Summary of Facilities, Programs, and Services	3-5
Table 3-3 - Sibley Backpack Camp Visitation Rates	3-66
Table 3-4 - 2013 –March 2017 Incident History	3-78
Table 4-1 - Proposed Actions by Location	4-8
Table 4-2 - Preserve -Trails	4-47
Table 4-3 - Western Hills – Trails	4-48
Table 4-4 - McCosker – Trails	4-48
Table 4-5 - Huckleberry Trails	4-49
Table 5-1 - Preserve Sub-area Implementation Program	5-4
Table 5-2 - Western Hills Sub-area Implementation Program	5-5
Table 5-3 - McCosker - Sub-area Implementation Program	5-6
Table 5-4 - Phase I – Trail Implementation Program	5-7
Table 5-5 - Phase II – Trail Implementation Program	5-8
Table 5-6 - Phase III – Trail Implementation Program	5-8
Table 5-7 - Construction Activities for Proposed Actions	5-18
Table 5-8 - Preserve Sub-area Estimate of Probable Costs	5-23
Table 5-9 - McCosker Sub-area Estimate of Probable Costs	5-24
Table 5-10 - New Narrow Trail Construction Estimate of Probable Costs	5-24

FIGURES

Figure 1 - Project Location	1-4
Figure 2 - Land Use Plan Amendment Project Area	1-5
Figure 3 - Land Use Plan Amendment Project Overview	1-9
Figure 4 - USGS. Oakland East Quad	2-5
Figure 5 - Project Area Operations Unit	2-6
Figure 6 - Land Grant Boundaries	3-12
Figure 7 - Existing Public Facilities in Project Vicinity	3-16
Figure 8 - Visual Setting	3-20
Figure 9 - Alder Creek Watershed	3-34
Figure 10 - Natural Communities/Habitat Types	3-39
Figure 11 - Existing and Proposed Regional Trails and Local Campsites	3-65
Figure 12 - Easements, Agreements, and Licenses	3-86
Figure 13 - Special Protection Features	4-6
Figure 14 - Proposed Actions for Preserve Sub-area	4-11
Figure 15 - Proposed Parking Layout, Sibley Main Staging Area	4-12
Figure 16 - Proposed Parking Layout, Old Tunnel Road	4-13
Figure 17 - Proposed Actions for Western Hills Sub-area	4-17
Figure 18 - Proposed Actions for McCosker Sub-area	4-20
Figure 19 - Proposed Actions for McCosker Sub-area-Creek Restoration and Recreation Development Area	4-21
Figure 20 - Creek Restoration and Recreation Development Area Concept Plan	4-22
Figure 21a - Creek Restoration and Recreation Development Area Cross-section A-A	4-23
Figure 21b - Creek Restoration and Recreation Development Area Cross-sections B-B and C-C	4-24
Figure 22 - Proposed Actions for Huckleberry Botanic Regional Preserve	4-36

Figure 23 - Existing and Proposed Trail Types in the Project Area	4-40
Figure 24 - Typical Trail Cross Section	4-41
Figure 25 - Proposed Trail Uses in the Project Area	4-46
Figure 26 - Typical Armored Swale and Causeway	5-17

APPENDICES

Appendix A	Table of Proposed Name Changes and New Name Proposals
Appendix B	Prior Land Use Development Plan Recommendations for Robert Sibley Volcanic Regional Preserve
Appendix C	LUPA Options Considered
Appendix D	Special Status Species List
Appendix E	Fuels Management Areas
Appendix F	Community Meeting Summaries
Appendix G	Trail Construction and Trail Modification Best Management Practices

Chapter 1
EXECUTIVE SUMMARY



This page is intentionally blank

Chapter 1

EXECUTIVE SUMMARY



1.1 Land Use Plan Amendment Purpose and Contents

The purpose of this Land Use Plan Amendment (LUPA) is to append new recommendations to the *1985 Land Use Development Plan Robert Sibley Volcanic Regional Preserve* (LUDP) resulting from the addition of two properties referred to as Western Hills and McCosker. The LUPA presents the results of resource inventories, site evaluations, and recommendations for amending the 1985 LUDP.

1.2 Land Use Plan Amendment Area

The LUPA 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. It 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 1 - Project Location*, and *Figure 2 - Land Use Plan Amendment Project Area* for Project location.

1.3 Overview of Recommendations

This LUPA considers a set of improvements that include: habitat restoration, public access, and interpretive and recreation facility improvements. Recommendations include:

- Creek restoration
- Improvements to existing staging areas
- Improvements to existing roadways and utilities

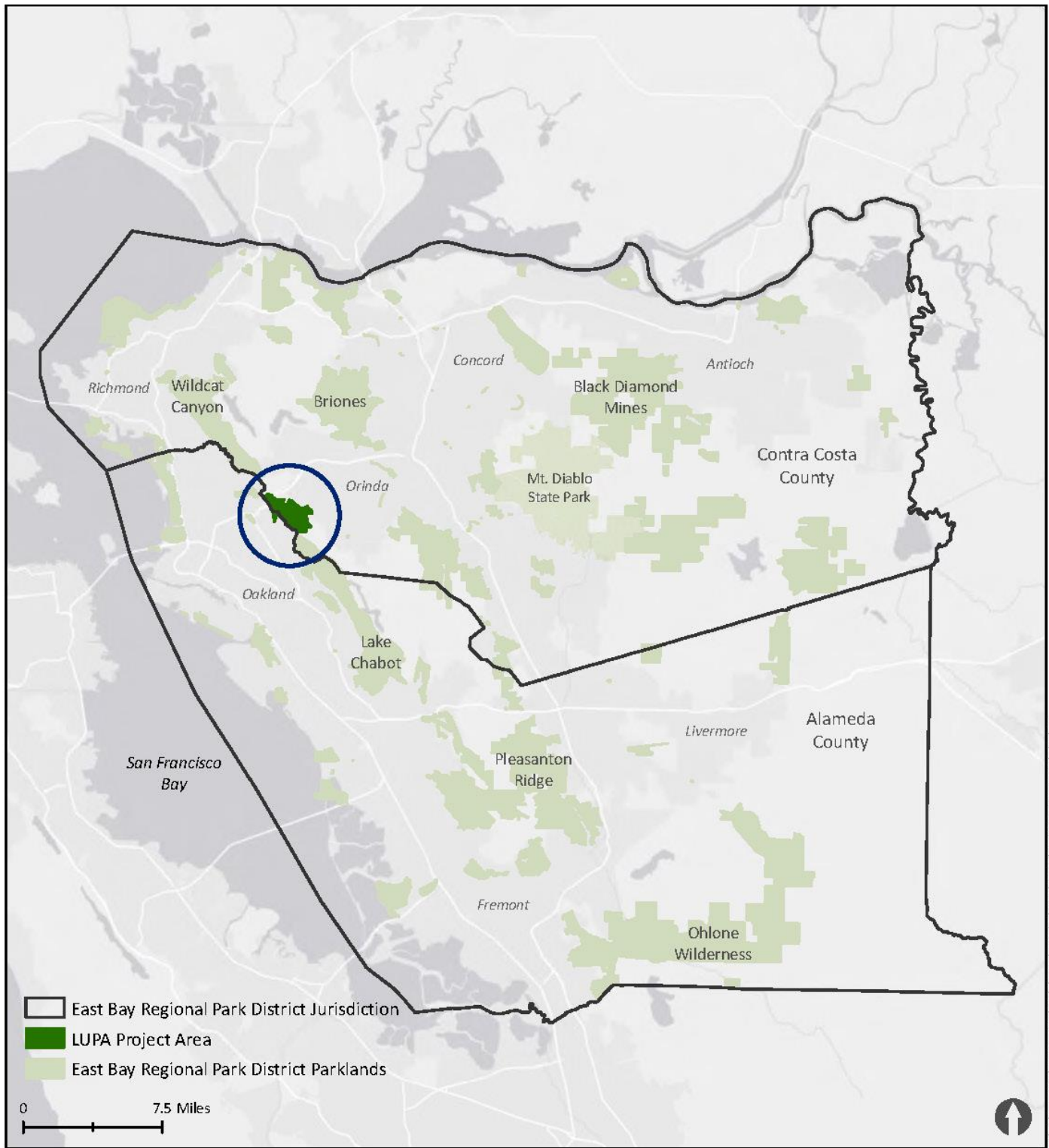


FIGURE 1: PROJECT LOCATION

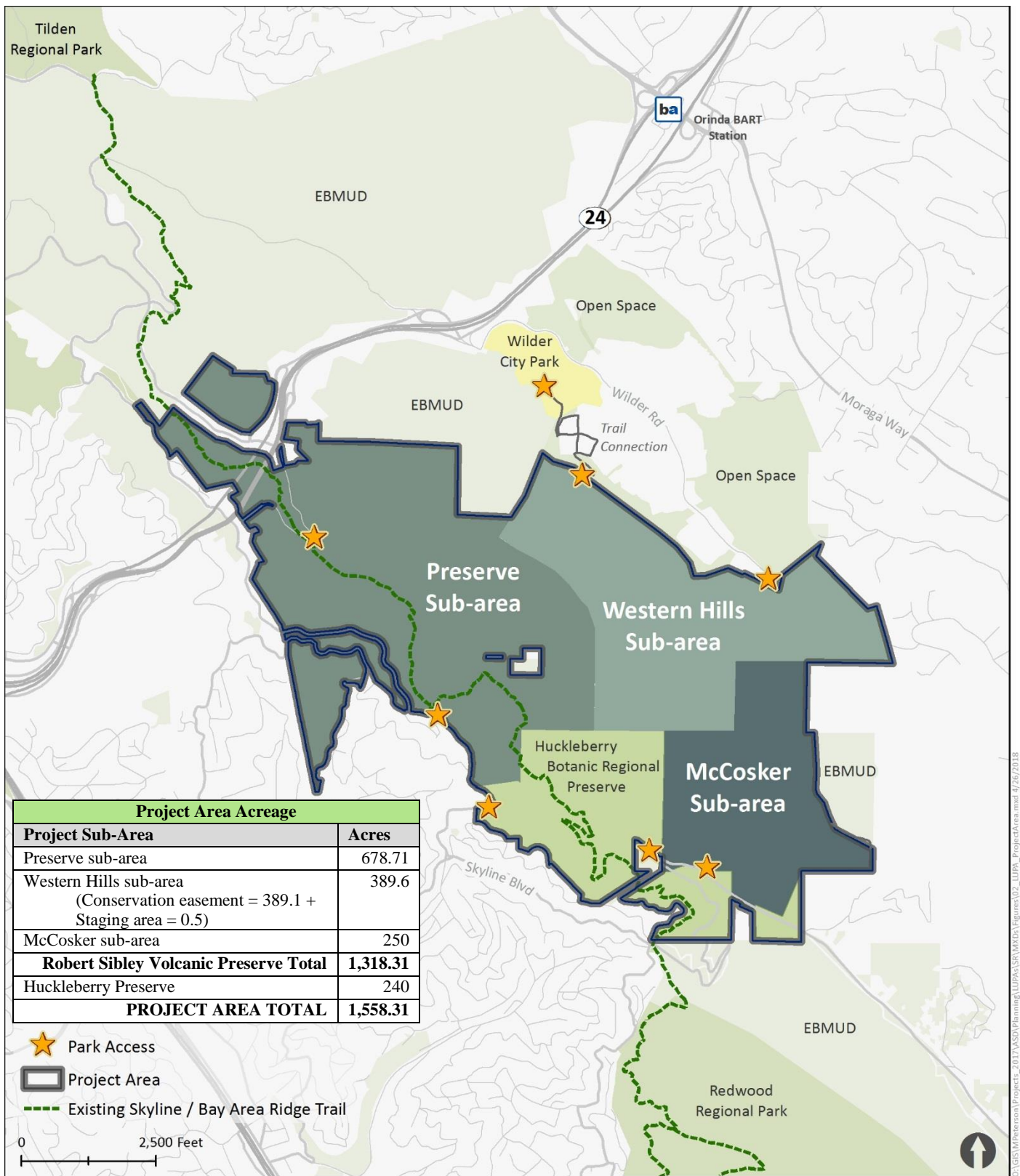


FIGURE 2: LAND USE PLAN AMENDMENT PROJECT AREA

- Bridge installation
- Trail system expansion
- Recreation facility development

Overall, the proposed improvements would add: 2,900 linear feet of restored creek habitat, two new vehicle access points providing a total of 193 single vehicle and three, two-horse trailer 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 the 3.1 miles of existing 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 sub-area and one-half acre in the Western Hills sub-area) 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.

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 forty percent.

Table 1-1 provides a comparative summary of the proposed actions with existing conditions. *Figure 3 - Land Use Plan Amendment Project Overview* provides an illustrative overview of the existing and proposed actions within the Project area. Figures in *Chapter 4 - Land Use Recommendations* identify the locations of each of the LUPA recommendations in more detail.

1.4 Ongoing Programs and Services

1.4.1 Ongoing Land/Habitat Management Programs

The Project area contains a wide range of natural communities, including grassland, shrub habitat, and riparian habitat, 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 special status species, natural communities, biological diversity, and ecosystem function, including: preserving habitat; enhancing grassland to promote native biological diversity through continuation of ongoing grazing and integrated pest management programs; and enhancing habitat for pallid manzanita (*Arctostaphylos pallida*) through development of best management practices as set forth in the Pallid Manzanita Management Plan.

**TABLE 1-1
COMPARISON OF PROPOSED 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 pt. - Wilcox (Eastport)	2 vehicle access pts. None added	2 vehicle access pts. 1 District trailhead 1 Neighborhood trailhead	1 vehicle access pt. 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 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	2-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 Terrace
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
TRAIL SYSTEM OPEN TO PUBLIC USE – ALL SUB-AREAS						

PROPOSED ACTION	EXISTING CONDITIONS	POTENTIAL NEW CONDITIONS
Ranch Roads	8.3 miles	12.6 miles
Narrow Trails	5.6 miles	9.5 miles
TOTAL	13.9 miles	22.1 miles (0.1 miles is a service road not open to public)
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

1.4.2 Operations and Maintenance

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. Park staff serve as the primary presence in the park on a day-to-day basis.

1.4.3 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.

1.4.4 Public Safety – Police and Fire Services

1.4.4.1 Police Services

The District provides police protection services to the Project area out of its Public Safety Headquarters at Lake Chabot Regional Park in Castro Valley. District police vehicles and helicopters patrol the Project area daily.

1.4.4.2 Fire Services

The District provides fire prevention, fire suppression, and life safety services to the Project area. The closest District fire substation to Sibley Preserve is located at Tilden Regional Park. 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.

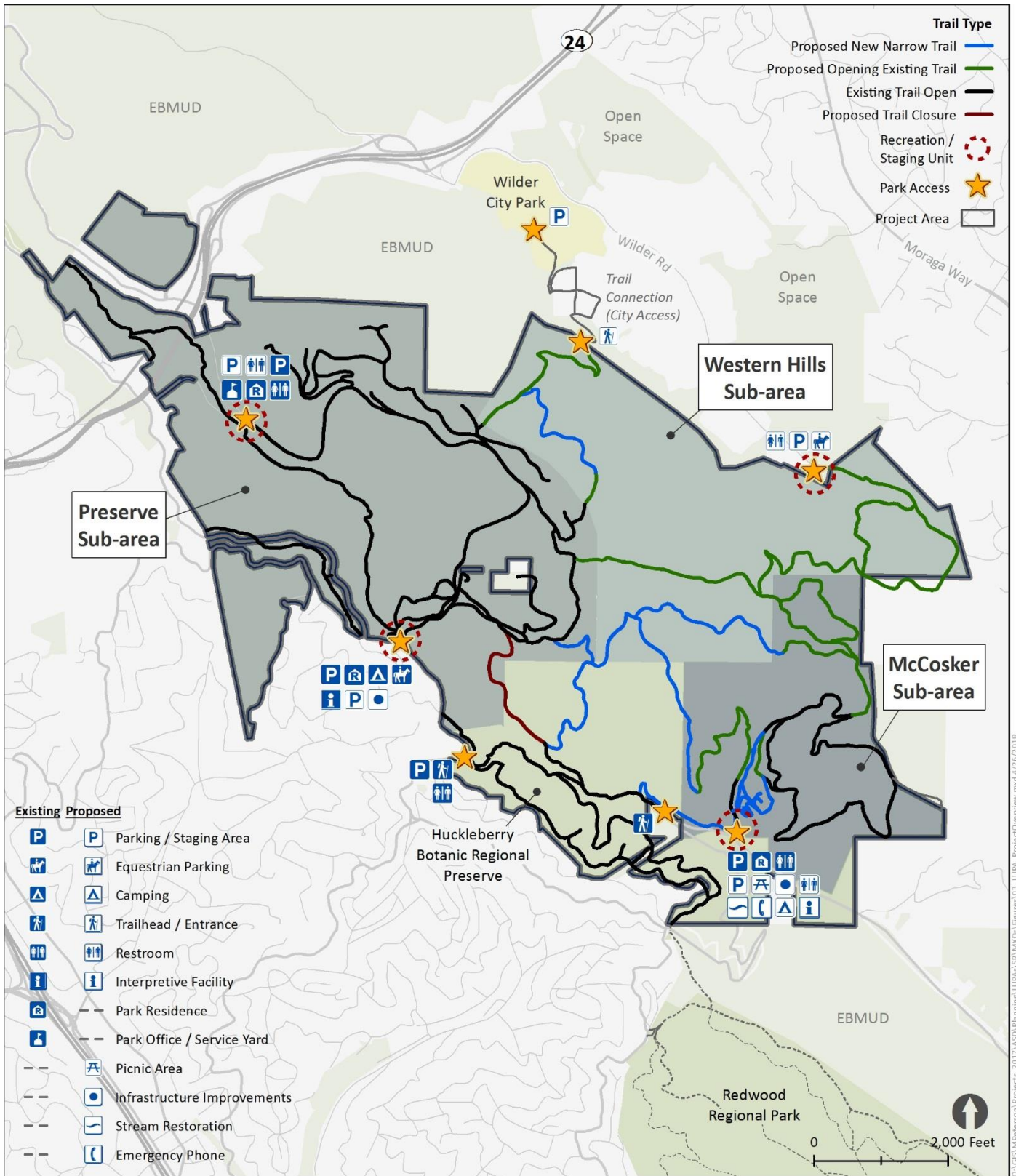


FIGURE 3: LAND USE PLAN AMENDMENT PROJECT OVERVIEW

1.5 Project Considerations

Following is a summary of considerations that have played a part in shaping this LUPA.

1.5.1 Topography, Soils and Water Quality

Steep slopes and erosive soils dominate the landscape of the Project area. Where erosive soils are found on moderately to extremely steep slopes they lend themselves to debris flows and soil creep, particularly in the spring when soil moisture is at its highest. In these areas recreation activities are limited to trail activities and new construction is limited to narrow, natural surface trails and trenching to accommodate new water lines. In the valley floor of the McCosker sub-area creek channels have largely been filled and culverted and are now deteriorating and causing erosion that could result in transport of sediments downstream. In this area, the LUPA provides recommendations for restoring tributaries that contribute flows into San Leandro Creek.

1.5.2 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). LUPA recommendations include project goals, objectives and strategies directed at protecting and supporting natural communities and habitat through conservation and enhancement of riparian corridors, wetlands, and wildlife linkages, including habitat for special status species. In addition, recommendations include the creation of approximately 3,061 linear feet of new and enhanced riparian habitat along creek channels that are largely contained in deteriorating buried pipes in a watershed area that includes approximately 10,085 linear feet of undisturbed riparian habitat in natural drainage channels.

1.5.3 Fire Hazards

As the Project is in a high fire hazard area, the LUPA includes a description of staffing and procedures currently in place to monitor public use, minimize potentially hazardous situations, respond to emergencies, and implement fuels management programs. In addition, the LUPA recommends precautionary design features to address fire hazard risks including: 1) installation of a water system with a 4,000-gallon water storage tank in the McCosker sub-area; 2) installation of emergency communication lines near the McCosker sub-area camping area; 3) design of the McCosker sub-area combined camping and interpretive program area to also serve as an emergency response staging area; and 4) added emergency ingress and egress points with the incorporation of the Western Hills sub-area into Robert Sibley Volcanic Regional Preserve.

1.5.4 Planning for Climate Change

The LUPA goals address climate adaptation and resiliency measures into the creek restoration and recreational facility design, and program development through the inclusion of strategies directed at adaptive vegetation management practices, carbon sequestration through added riparian habitat creation, reuse of materials where feasible and appropriate, and promotion of interpretive programming that highlights climate adaptation and resiliency.

1.5.5 Recreation Development

To minimize areas of new disturbance and the potential to over develop the McCosker sub-area, LUPA recommendations limit new development to previously disturbed areas. Concept plans illustrate how program elements can be combined, parking can be screened, access can be controlled along restored creek channels, and wayfinding and interpretive signage and design features would be incorporated to minimize intrusion into sensitive habitat.

1.5.6 Trail Uses and Trail Inclusivity

Trails adjoining the Project area contain varying use designations ranging from hiker-only to fully multi-use accommodating hiking, bicycling, equestrian use, and dog-walking. To provide trail trips that provide continuity when traveling from one area to another, as well as addressing concerns that various trails uses may conflict with each other, and/or with policies of the adjoining lands, the LUPA includes a section on designating trails and ranch roads for a variety of uses.

To encourage use by visitors with a range of skills and mobility, the LUPA includes recommendations for the design of ADA compliant amenities in the proposed developed recreation area in the McCosker sub-area and adherence to District universal access policies on trails throughout the Project area.

1.5.7 Traffic Safety

During the planning process issues were raised concerning traffic and visitor and community safety around the Project area, specifically along Pinehurst Road and Wilder Road. To promote safety upon entering and existing the Project area the LUPA recommends restricting parking along the road 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. Wayfinding signs would also be installed to identify a clear path of arrival to the various entry points.

1.5.8 Interagency Coordination

1.5.8.1 Wilder Development

Accommodations for future hiking, biking, equestrian, and dog access from Wilder Park and the Wilder subdivision into the Western Hills Sub-area was determined through interagency coordination between the District, the City of Orinda and the Wilder developer, OGLLC, as set forth in the *2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05*.

1.5.8.2 East Bay Municipal Utility District (EBMUD)

Access along sections of the East Bay Skyline National Recreation Trail that traverse EBMUD lands to the north and south of the Project area are managed by the District for recreation use through a license agreement.

1.5.8.3 Other Obligations and Agreements

Other agreements and obligations are discussed in *Section 3.4.3 Obligations, Maintenance Easements Agreements and Licenses*.

1.6 Land Use Plan Amendment Recommendations

1.6.1 Resource Restoration and Enhancement

Creek restoration activities in the McCosker sub-area would involve restoration and enhancement of: an unnamed tributary herein referred to as Alder Creek, including construction of the Alder Creek Nature Trail, and restoration and enhancement of a secondary tributary herein referred to as Leatherwood Creek.

1.6.2 Public Access, Recreation Facility and Infrastructure Improvements

The LUPA recommendations for public use of Robert Sibley Volcanic Regional Preserve focus on “lower intensity” recreational uses and facilities limited to access improvements, trails, rustic camping, interpretive programs and exhibits, and infrastructure improvements to support these recreation amenities.

1.6.2.1 Recreation Facility Development

McCosker Sub-area

Recreation improvements in the McCosker sub-area would involve development of two sites; Fiddleneck Field and Fern View Terrace.

Fiddleneck Field would be designed to accommodate up to 50 people for reservation-only interpretive programs and group camping activities. Facilities would include an open meadow for camping and interpretive program activities, cook area, picnic pavilion, parking for up to 43 vehicles, and restrooms.

The Fern View Terrace would be designed as an informal site for picnicking and interpretive exhibits (e.g., interpretive panels and information panels) to support interpretive programs and/or self-guided activities.

1.6.2.2 Improvements to Existing Staging Areas

Preserve Sub-area

Staging area improvements in the Preserve sub-area would include additional parking at the two 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 at Old Tunnel Road would involve repairing and repaving the existing service road access to increase capacity from 13 to 33 spaces, and add vehicle turn-arounds, bike parking and replacement of a portable toilet with a vault toilet.

McCosker Sub-area

Improvements to the Eastport (formerly Wilcox) Staging Area in the McCosker sub-area would involve: 1) installing a new entry sign with the name “Eastport Staging Area”; 2) replacing an existing gate with an equestrian-friendly, self-closing gate; 3) adding up to five additional parking spaces and installing a new storm treatment feature.

1.6.2.3 Improvements to Existing Roadways and Utilities

Preserve Sub-area

Utility improvements would include installation of a prefabricated water tank to service the existing backpack camp.

McCosker Sub-area

Roadway improvements in the McCosker sub-area would involve: 1) improvements to the existing ranch roads to provide access for visitors and staff vehicles to the developed recreation areas; and 2) reconstruction and repaving the existing the park residence access road and development of a hammerhead turn-around at the terminus of this drive to improve emergency vehicle circulation.

Utility improvements would include: 1) installation of a new water line, water tank and water treatment system to service the Fiddleneck Filed Recreation area; 2) extending undergrounding utility lines connecting to Fiddleneck Field recreation area; and 3) installing a temporary irrigation system to establish new plantings.

1.6.2.4 Bridge Installation

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 Bridge; and 3) Alder Creek Bridge.

1.6.3 Trail System Expansion

The trail system would incorporate: 1) existing trails in Robert Sibley Volcanic Regional Preserve; 2) the trail system set forth in the 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) minor changes in use on ranch road trails; 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 new ranch roads as part of the recreation and public access improvements in the McCosker sub-area; 5) realigning, closing and restoring an over steep trail connecting Huckleberry Botanic and Robert Sibley Volcanic Regional Preserves.

1.6.4 Property Conveyance

As the Western Hills sub-area is: 1) largely contained within an established conservation easement extending eastward from the ridgelines of the East Bay Hills to the western boundary of the Wilder residential development as described in the District *Resolution No: 2006-01-13*, the District and OG Property Owner LLC *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*; and 2) the staging area has also been established through prior development plans analyzed in the *2004 Second Supplemental EIR for the Montanera Project*, the proposed actions in the Western Hills sub-area would be limited to opening existing facilities (staging area and trails) for public use once the land is conveyed to the District. Trail development proposed beyond that which is currently described in the conservation easement and covered in the *2004 Second Supplemental EIR for the Montanera Project* is described in *Chapter 4 - Section 4-7*.

Chapter 2
INTRODUCTION



This page is intentionally blank

Chapter 2 Introduction



2.1 Land Use Plan Amendment Overview

The function of a Land Use Plan Amendment (LUPA) is to: 1) evaluate park resources and facilities; 2) document agreements and restrictions related to park use; 3) provide recommendations for managing resources; and 4) identify future recreation uses, programs and service facilities. In this case, the LUPA addresses the resources, uses, facilities, agreements and restrictions for Robert Sibley Volcanic Regional Preserve. This document is divided into six chapters. The primary topics covered in each chapter are outlined below.

Chapter 1 – Executive Summary. This chapter provides: 1) an overview of factors considered in the development of the LUPA; 2) ongoing programs and staffing; and 3) a summary of recommended actions that are described in more detail in later chapters.

Chapter 2 - Introduction. This chapter provides: 1) a description of the LUPA area; 2) the planning context, including a summary of prior studies; 3) the Project purpose goals, and objectives; 4) the planning and public involvement processes that were undertaken to prepare the LUPA; and 5) a summary of the District naming policy.

Chapter 3 – Existing Conditions. This chapter identifies: 1) the physical resources and features in the LUPA area and describes the methodologies and data sources used to create this resource baseline; 2) on-going land-habitat management programs; 3) existing recreation facilities, park uses and interpretive programs, along with an overview of regional demographics and recreation trends; 4) existing public access points and trail system, including regional and local trails; and 5) parkland services, including staffing levels and responsibilities for this parkland unit, along with a summary of existing facilities and operation practices.

Chapter 4 – Land Use Plan Recommendations. This chapter presents a vision for the future of the Preserve that balances resource management with facility and program development directed at maintaining and augmenting the natural ecology of the land and creating positive visitor experiences.

Chapter 5 – Plan Implementation. This chapter sets forth tasks and priorities for implementing the LUPA, including construction activities, cost estimates, potential funding sources, and long-term management of the Project area.

Chapter 6 - Report Preparation and References. This chapter identifies the Project Team that contributed to the development of the LUPA and provides a list of supporting documents and resources used in the preparation of the LUPA.

2.2 Land Use Plan Amendment Area

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 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 LUPA Area and Acquisition History

The LUPA 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 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.

The LUPA area appears on the Oakland East, California U.S. Geological Survey 7.5-minute quadrangle map (*Figure 4 - USGS. Oakland East Quad*). The project location, including the three sub-areas contained within the Project area, is shown on *Figure 2 - Land Use Plan Amendment Project Area*.

The focus of this LUPA is on two open space areas; the Western Hills Sub-area that is scheduled to be transferred to the District, and the McCosker Sub-area that the District accepted as a donation in fee in 2010. The addition of the McCosker parcel added 250 acres to Robert Sibley Volcanic Regional Preserve. The Western Hills Open Space will add 389 acres to this parkland unit, bringing the total acreage of Robert Sibley Volcanic Regional Preserve to 1,318 acres and the total acreage of this parkland unit to 1,766 acres as shown on *Figure 5 - Project Area Operations Unit*.

2.2.2.1 Preserve Sub-area

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 – Refer to *Figure 4 - USGS Oakland East Quad* and *Figure 6 - Land Grant Boundaries*).

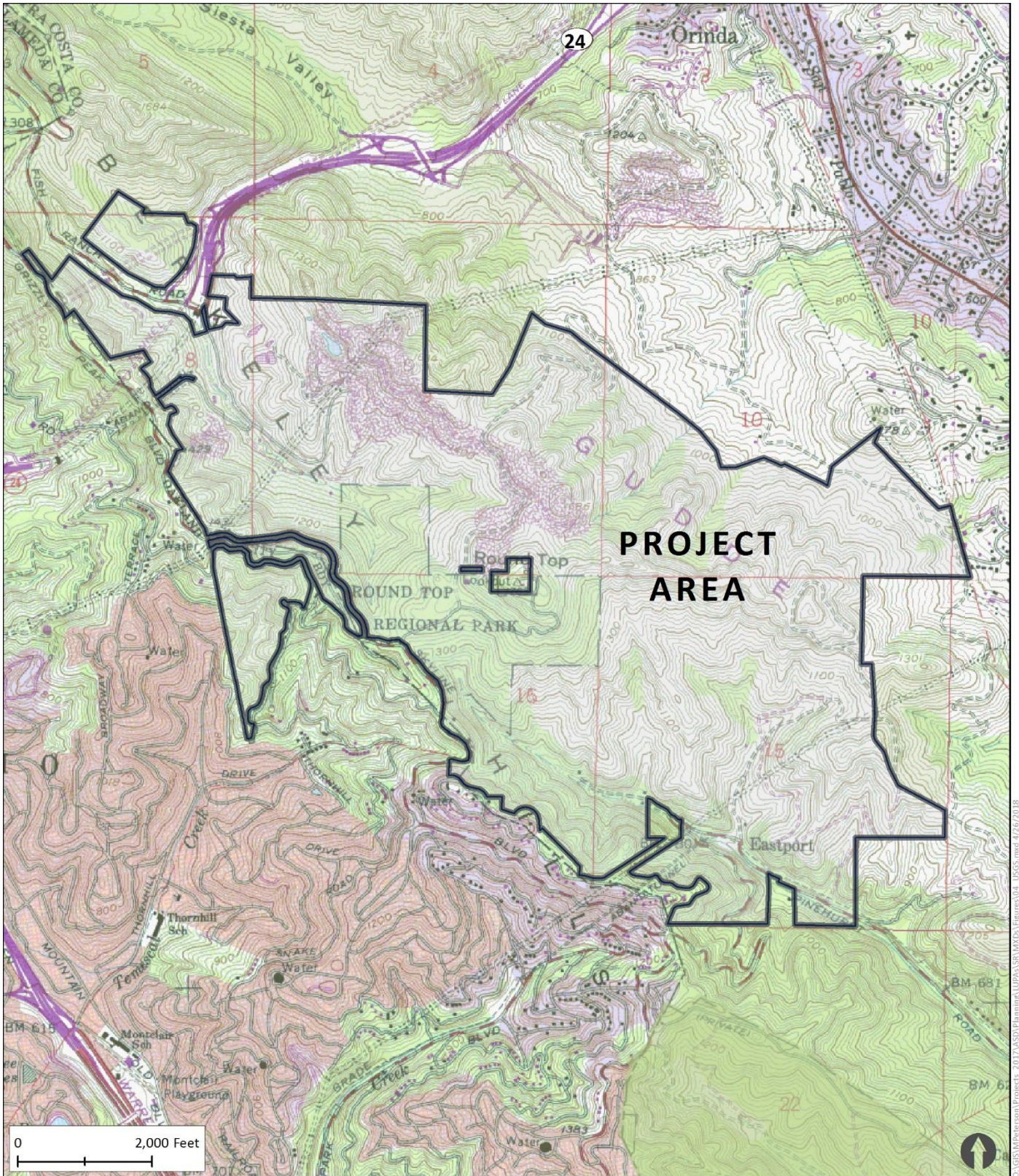


FIGURE 4: USGS OAKLAND EAST QUAD.

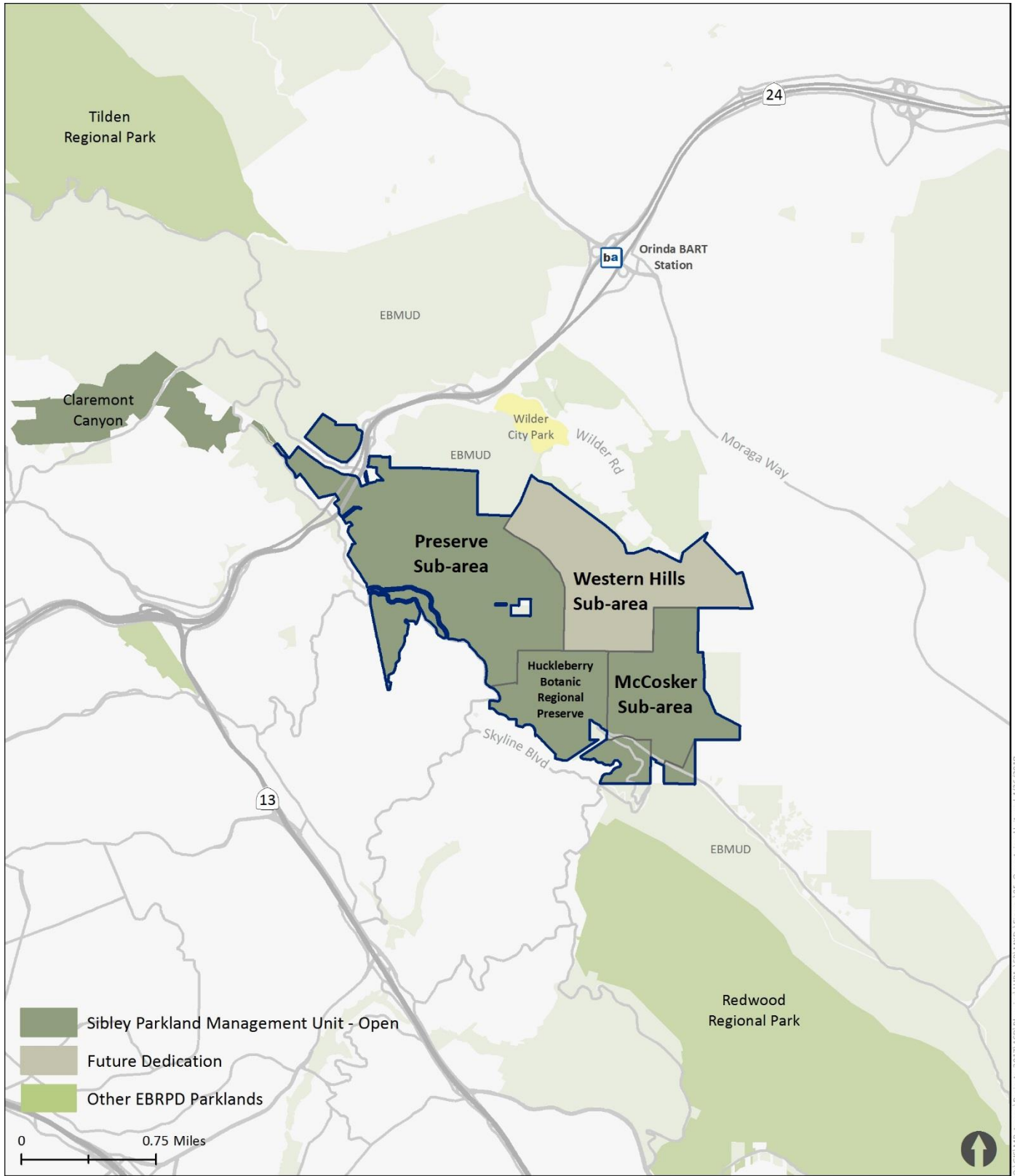


FIGURE 5: PROJECT AREA OPERATIONS UNIT

Purchased between 1936 and 1941 from EBMUD, Robert Sibley Volcanic Regional Preserve, Temescal Regional Recreation Area, and Tilden Regional Park formed the nucleus of the East Bay Regional Park system. 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.

Acquisitions augmenting Sibley Preserve since 1941 have included two quarry sites: a 381-acre site north of Round Top in 1977 and a second 272-acre site in 1991. The more recent acquisitions of the Stone (1991), Lerman (1992), Conley (1993), Uhlund (1999), and Rediger (1998) properties added an additional 660 acres to the Preserve. These acquisitions expanded Sibley northeast towards the City of Orinda adjoining EBMUD watershed lands and creating a permanent wildlife corridor crossing over the Caldecott Tunnel /Highway 24.

2.2.2.2 Western Hills Sub-area

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 North, Range 03 West, Section 15).

A 389-acre conservation easement will be transferred in fee to the District as permanent open space. The Red-tailed Hawk Staging Area will be overlain with an easement granting the District use and management of the facility. This transfer is consistent with District *Resolution No: 2006-01-13*, January 10, 2006, District and Property Owner, OGLLC, *2008 First Amendment to Donation Agreement by and between the East Bay Regional Park District and OG Property Owner LLC*, *2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05*.

The conservation easement will be managed by the District in accordance with a resource agency-approved Long-Term Habitat Management Plan. Public access will be restricted to designated trails and trailheads, with signs noting off trail access prohibitions posted at trailheads and adjacent to areas of sensitive habitat.

2.2.2.3 McCosker Sub-area

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).

The 250-acre area, formerly part of the larger McCosker family ranch property, was purchased by OGLLC, the Wilder residential developer. It was donated to the District in 2010 for parkland purposes to mitigate for impacts to recreation within the Preserve sub-area resulting from the relocation of high voltage transmission lines and towers (*Montanera Second Supplemental EIR 2004*). A staging area accommodating approximately ten vehicles and a two-mile loop trail comprised of existing ranch roads were opened to the public in December 2016.

2.2.2.4 Huckleberry Preserve

Huckleberry Botanic Regional Preserve comprises a 240.3-acre area, also owned and managed by the District, that borders portions of each of the three sub-areas. Recommendations within the Huckleberry Preserve are limited to trail connections to the three sub-areas that will comprise Robert Sibley Volcanic Regional Preserve.

2.3 Plan Designation and Annexation

2.3.1 LUPA Focus

The LUPA provides a formal planning review focused on additional conditions occurring since the adoption of the 1985 LUDP and subsequent planning amendments relating to Robert Sibley Volcanic Regional Preserve, regarding public access, recreation facility development, and the protection and enhancement of site resources.

Specifically, the LUPA focuses on the Western Hills Sub-area and the McCosker Sub-area, that are to be incorporated into Robert Sibley Volcanic Regional Preserve per District Resolution No. 2006-12-280.

2.3.2 Prior Planning Studies

The LUPA is intended to incorporate and supplement, as appropriate, information from prior documents prepared for lands within the LUPA area with the intent of appending the recommendations from this LUPA planning process into the 1985 LUDP. The 1985 LUDP and Environmental Impact Report (EIR) emphasize education/research/study and designate quarry faces as a geologic preserve area. Recommendations included: 1) development of an interpretive facility related to site volcanic and geologic features; 2) a backpack camp for 12-16 persons; 3) a park residence; and 4) enlargement of the Main Staging Area to accommodate approximately 60 cars, a bus turn-around area, and a group gathering place. The interpretive facility, park residence, a gathering area at an 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 1985-09-280. Refer to *Appendix B - Prior Land Use Development Plan Recommendations for Robert Sibley Volcanic Regional Preserve* for a concept plan illustrating the 1985 recommendations.

Additional planning analyses considered in the development of this LUPA, included:

- Robert Sibley Volcanic, Huckleberry Botanic, and Claremont Regional Preserves Resource Analysis, June 18, 1985, Resolution No. 1985-06-184.
- Land Use Plan Amendment for Sibley Volcanic Regional Preserve, December 4, 2001 Resolution No. 2001-12-276. This amendment removed property from land bank status. No new development was proposed.
- Land Use Plan Amendment for Huckleberry Botanic Preserve, December 4, 2001 Resolution No. 2001-12-277. This amendment removed property from land bank status. No new development was proposed.
- Draft Land Use Plan Amendment for Sibley Volcanic Regional Preserve, Initial Study and Proposed Mitigated Negative Declaration for Robert Sibley Volcanic Regional Preserve and Use Plan Amendment (The Former Stone, Conley, Uhland, Lerman, and Rediger Properties) Contra Costa County, California, November 2004. Recommendations

included parking off Old Tunnel Road and 300-person/60-parking space group camp within several reclamation projects affiliated with an old, abandoned quarry pit that was previously filled. 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. Other recommendations included trail improvements, designation of special protection features, and establishment of park security residence-office.

- Response to Comments and Final Changes to the Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment, Initial Study, and Mitigated Negative Declaration, 2004
- Sibley Volcanic Regional Preserve Land Use Plan Amendment, January 10, 2006, Resolution No: 2006-01-13. This amendment rescinded the 300-person/60-parking space group camp use from Sibley Volcanic Regional Preserve, while preserving other elements of the 2004 LUPA including parking at Old Tunnel Road. Refer to *Appendix B - Prior Land Use Development Plan Recommendations for Robert Sibley Volcanic Regional Preserve*.
- East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan and Environmental Impact Report, 2010. Refer to *Appendix E - Fuels Management Areas* for fuel treatment areas within the Project area.
- McCosker Checklist Amendment, April 19, 2016, Resolution No:2016-04-100. This amendment identified minor improvements allowing for removal of the property from land bank status and opening two miles of existing ranch road trails to the public.
- Modification to Ordinance 38 to Prohibit Dogs on McCosker Loop Trail until trail uses could be determined as part of this LUPA process, December 6, 2016, Resolution No: 2016-12-318.

2.3.3 Western Hills Sub-area Conditions

The *2004 Second Supplemental EIR for the Montanera Project* (Wilder development) identified mitigations for impacts to habitat, open space, and District recreation resources resulting from the residential development. They included: 1) a set aside of an on-site, open space area known as” the 389-acre area west of the residential development and adjacent to the Preserve sub-area” and referred to as the “Western Hills Open Space Area”; 2) development of a new trailhead at the (former) Art and Garden parking area (Red-tailed Hawk Staging Area); and 3) transfer of the 250-acre Texas parcel (McCosker sub-area) to the District. The City of Orinda certified the 2004 Second Supplemental EIR for the Montanera Project on February 5, 2005, Resolution 13-05.

The LUPA incorporates obligations and restrictions associated with the Western Hills Conservation Easement as set forth in the following documents:

- Long-term Management Plan for the Montanera Project, Western Hills Open Space, June 27, 2006
- 2004 Second Supplemental EIR for the Montanera Project
- City of Orinda Resolution 13-05.

2.4 Purpose, Goals and Objectives

2.4.1 Purpose

The purpose of the LUPA is to:

- Append the 1985 LUDP 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]; 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 Goals

The overarching goals for the LUPA 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.

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 a natural channel bed.
- 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 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.
- 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

- Provide an all-weather, 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 to 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 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 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.

Table 2-1 - Consistency with Project Objectives below provides a summary of the Project recommendations consistency with the Project objectives.

**TABLE 2-1
CONSISTENCY WITH PROJECT OBJECTIVES**

PROPOSED ACTION	PRESERVE SUB-AREA	WESTERN HILLS OPEN SPACE	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: <u>Objective 1</u> : Protect and Support Natural Plant Communities and Wildlife Habitat; <u>Objective 2</u> : Creek Restoration; and <u>Objective 6</u> : 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 <u>Objective 3</u> : Trail Development and <u>Objective 5</u> : Operations and Maintenance
Improvements to Existing Public Access Routes	✓		✓		Proposed improvements to existing public access routes would benefit park visitors experience consistent with <u>Objective 3</u> : Trail Development, and in the McCosker sub-area would support the proposed recreation facility improvements, consistent with <u>Objective 4</u> : Recreation Facility and Interpretive Program Elements; and <u>Objective 5</u> : Operations and Maintenance
Bridge Installation			✓		Installation of proposed bridges would support proposed recreation facility improvements consistent with <u>Objective 4</u> : Recreation Facility and Interpretive Program Elements and <u>Objective 5</u> : Operations and Maintenance
Trail System Expansion	✓	✓	✓	✓	Expansion of the proposed trail system would be consistent with <u>Objective 3</u> : Trail Development; and <u>Objective 4</u> : Recreation Facility and Interpretive Program Elements
Recreation Facility Development			✓		Implementation of the proposed recreation facility improvements would be consistent with <u>Objective 4</u> : Recreation Facility and Interpretive Program Elements
Improvements to Utility Infrastructure	✓		✓		Implementation of proposed utility infrastructure improvements would support proposed recreation facility improvements consistent with <u>Objective 5</u> : Operations and Maintenance.

2.5 Planning Context

The LUPA area is contained within lands that are now, or through prior commitments, in the future will be owned and/or managed by the District. As such, the LUPA considers Project consistency with District plans and policies as summarized below.

2.5.1 East Bay Regional Park District 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.” [2013 EBRPD Master Plan].

As such, District parklands, including the LUPA area, are consistent with local zoning, but are otherwise independently managed.

2.5.2 East Bay Regional Park District Master Plan

2.5.2.1 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.”

2.5.2.2 Regional Preserve

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:

“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.”

The Recreation/ Staging Unit(s) providing for public access and services within the Preserve sub-area including staging areas, park residences and offices, and a backpack camp comprise approximately 6.9 acres.

The Recreation/ Staging Unit(s) providing for public access and services in the Western Hills sub-area constitutes a 0.5-acre staging area.

The Recreation/ Staging Unit(s) providing for public access and services in the McCosker sub-area would add approximately five acres of improvements including the staging area, a combined group camp and interpretive program area and picnic sites in previously developed areas.

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. Refer to *Section 4.1.1.2 Designation of Parkland Units* for a description of Master Plan Planning Units.

2.5.2.3 Master Plan Policies

The District Master Plan policies were reviewed to ensure that this Plan is consistent with the stated and adopted vision, mission statements, and policies of the District. A summary of Master Plan recreation-related policies relevant to this LUPA are listed below.

Development Policies

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.

Trail Policies

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.

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.

RFA4: The District will expand its unpaved multi-use trail system as additional acreage and new parks are added.

Picnic Policies

RFA6: The District will continue to develop group and family picnic facilities throughout the parks system.

Interpretative and Recreation Program Policies

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.

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 and enjoy the parks and trails, and will collaborate with

other agencies, organizations and partners to provide a broad spectrum of regional recreational opportunities.

Camping Policies

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.

2.6 Planning Process

2.6.1 Parkland Vision

The long-held vision for the East Bay Regional Park District was achieved in the 1930's, as an expression of 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.

In 1936 EBMUD sold 2,162 acres of watershed land, to be purchased in installments over five years, to the District for \$656,544 preserving the first regional parklands for the public's benefit. These lands became the District'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 were formally transferred from EBMUD to the District in 1941 despite Round Top having already been established as a District park. 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. Various parcels have been added to the Preserve over the years, including the 250-acre McCosker parcel, expanding the original 227-acre area to 928 acres.

2.6.2 Data Gathering, Mapping and Documentation

This updated and comprehensive planning effort was initiated as a result of the District gaining two new parcels; the McCosker sub-area in 2010 and the anticipated conveyance of the Western Hills sub-area. The long-term and visionary plan for these parklands is commensurate with the park's significance within the region. The LUPA has been prepared by a Park District staff team representing the many disciplines that work together to manage the park's diverse resources. The process of developing the LUPA for Robert Sibley Volcanic Regional Preserve involved:

- Evaluation of the park's existing resources, facilities, programs, and staffing
- Documentation of legal agreements and restrictions related to use of the park
- Formulation of recommendations for: managing and conserving resources; identifying future recreation uses, programs and service facilities; and defining staffing roles and responsibilities.

2.6.3 Community Engagement

The District Master Plan identifies “a fundamental commitment to public participation and informed review” as one of the key elements of the planning process. Master Plan Policy KEP1 further states:

“The District will notify the public about the publications of plans, including proposed design of new facilities, and scheduled times for public review and comment. The Board will schedule plan review sessions in the geographic locale of interested communities and will conduct other outreach efforts as needed to fully communicate the goals of the plan and to accept review and comment from interested citizens.”

The planning and public involvement processes associated with preparation of this LUPA are described below.

2.6.3.1 Community Meetings

Community meetings were held as part of the Land Use Amendment process to keep the community informed and involved with the Project. The planning process also included presentations to the District Board Executive Committee, Park Advisory Committee and Board of Directors. The purpose of these meetings and presentations was to solicit public input and inform agencies, stakeholders, and other interested parties of the Plan’s progress, potential environmental resources and effects, and mitigation measures undertaken to address potential adverse environmental impacts that could occur as a result of implementing the LUPA.

The Community meetings were held at the Richard C. Trudeau Conference Center, 11500 Skyline Blvd, Oakland, Redwood Regional Park, a geographic central locale of interested communities. Presentations to the District Park Advisory Committee and Board of Directors were conducted at the District Administration office, 2950 Peralta Oaks Court, Oakland.

A list of these meetings with a brief summary of topics follows.

- April 6, 2016 - Community Meeting #1 - Introduced the project and presented baseline conditions.
- July 2, 2016 - On-site Meeting #1 - Provided the public an opportunity to tour the McCosker parcel which was in landbank status.
- August 11, 2016 - Youth Meeting #1 - Provided an opportunity for Eco-teen Camp high schoolers to identify recreation development and interpretive program preferences for the McCosker site.
- November 7, 2016 - Youth Meeting #2 - Provided an opportunity for Canyon Middle Schoolers to identify recreation development and interpretive program preferences for the McCosker site.
- November 16, 2016 Community Meeting #2 - Provided an opportunity for the public to identify recreation development and interpretive program preferences for the McCosker site.
- December 4, 2016 - On-site Meeting #2 - Provided the public an opportunity to tour the McCosker parcel, which was in landbank status, and review their recreation development and interpretive program preferences.
- January 18, 2017 - Community Meeting #3 - Offered the public an opportunity to review and provide input on a potential trail system and recreation design concepts. This meeting

also served as the public scoping meeting for Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA.)

- April 6, 2017 - Board Executive Committee Meeting - Provided Board members a recap of the first three community meetings
- November 27, 2017 - Parks Advisory Committee Meeting - Included a presentation on the proposed LUPA recommendations.
- December 7, 2017 - Board Executive Committee Meeting - Included a presentation on the proposed LUPA recommendations.
- July 23, 2018 - Parks Advisory Committee Meeting - Included a presentation of the draft LUPA and draft EIR leading to a recommendation for certification of the EIR and adoption of the LUPA
- July 25 2018 - Community Meeting #5 – Included a presentation of the draft LUPA and draft EIR and provided the public an opportunity to provide input in accordance with CEQA.
- August 2, 2018 - Board Executive Committee Meeting - Included a presentation of the draft LUPA and draft EIR leading to a recommendation for certification of the EIR and adoption of the LUPA.
- November 20, 2018 - Board Hearing - Included a presentation of the LUPA and EIR leading to a certification of the EIR and adoption of the LUPA.

Summaries of the community meetings can be found in *Appendix F - Community Meetings*.

2.6.3.2 Community Outreach

Noticing and outreach encompassed the broader East Bay Communities, as well as the Lafayette, Orinda and Moraga (Lamorinda) and Canyon populations, as the Project would include: 1) restoration work that would benefit the entire San Leandro Creek watershed, a total of approximately 49.4 square acres, extending from the Oakland/San Leandro Hills to the Town of Moraga; and 2) provide new local and regional recreation opportunities.

Pursuant to State law under AB 52 (codified at California Public Resources Code [PRC] § 21080.3.1), the District, reached out to California Native American Tribes listed in the Native American Heritage Commission's (NAHC[s]) contact list. Letters directed specifically to tribal representatives were sent requesting 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.

Meeting notifications included: mailings, email notifications, web site postings, press releases, and social media outreach. Public notices for community meetings for the Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment and California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) went out to nearly 200 people via email and close to 600 people via regular mail, including notices to libraries, and city departments in Oakland and Orinda, the Town of Moraga and the Canyon community.

Notices were posted at the park and at these locations on the District webpage:
https://www.ebparcs.org/about/planning/default.htm#robert_sibley_lupa
and https://www.ebparcs.org/about/meetings/land_use/default.htm

2.6.3.3 Summary of Community Preferences

Hands-on workshop activities gave the community an opportunity to provide input on the proposed trail system throughout the LUPA area and design concepts for the McCosker Sub-area.

Community input from these exercises included:

- Support for restoring the creek channels in the McCosker Sub-area and interpretive opportunities along the creeks, if it would not lead to creek degradation
- Preference for limited development (e.g., backpack or rustic group camp and open education/interpretive structures), but concern about a) parking overwhelming the natural character of the site, and/or adding to traffic along Pinehurst Road, and b) fire hazards associated with these activities
- Preference for a multi-use trail system (e.g., hike, bike, dog walking, equestrian) including narrow, natural surface trails, that would provide connectivity from the McCosker site to Western Hills Open Space Staging Area, City of Orinda bike routes, existing Sibley Round Top Trail, and Huckleberry Preserve, as well as recognition that not all uses may be appropriate for all trails.

In addition, the District has received letters of support for the McCosker sub-area creek restoration and public access improvement elements of the LUPA from the California Urban Steams Partnership, the Friends of San Leandro Creek, the Regional Water Quality Control Board, Congressman Mark DeSaulnier, Assembly member Catherine Baker, Alameda County Supervisor Wilma Chan and Contra Costa County Supervisor Candace Anderson. Broader community support for restoration activities within the Park District, and specifically for the Project area, was demonstrated with the passage of the District Bond Measure WW in 2008. This measure included line items for creek restoration and restoration of streams and riparian habitat in the Sibley/Huckleberry area.

2.7 Park Facility Naming

The LUPA includes recommendations for changing the names of some features and facilities and giving names to previously unnamed and proposed sites, facilities and trails. To simplify reading, these names are used throughout the document 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 are 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.

The new names are intended for the park brochure. A full listing of name changes and new name proposals can be found in *Appendix A - Table of Proposed Name Changes and New Name Proposals*.

Chapter 3
EXISTING CONDITIONS



This page is intentionally blank

Chapter 3 – Section 3-1

Existing Conditions Summary Overview



3.1.1 Summary of Site Conditions

3.1.1.1 Site Analysis

This chapter provides a summary of existing conditions based on a review of existing documents and studies, interviews with District staff, fieldwork and technical studies prepared to inform the preparation of LUPA. The tables on the following two pages, *Table 3-1 Summary of Site Conditions* and *Table 3-2 Summary of Facilities, Programs and Services*, provide a synthesis of the analysis that factored into the development of the LUPA recommendations by sub-area. The LUPA analysis considers the project setting, recreation and interpretive trends and preferences, facilities and programs, and parkland services including staff, volunteer and interagency support, as well as existing encumbrances on the land.

3.1.1.2 LUPA Opportunities

Taking into consideration the findings from the analysis of existing site conditions, recreation and interpretive trends and preferences, and existing facilities, programs, and services, several opportunities emerge that are more fully realized in the LUPA recommendations. These opportunities include:

- Restoration of deteriorated creek channels
- Land areas dedicated to conservation that would serve to protect an important wildlife corridor and protect natural plant communities and viewsheds
- Expansion of regional trail linkages that provide for easy access to natural areas from urban populations, as well as opportunities for multi-day treks
- Creation of recreational and interpretive experiences tied to the natural ecology, geology and history of the East Bay Hills.

Options considered during the planning process not forwarded into the LUPA recommendations are summarized in *Appendix C -LUPA Options Considered*.

**Table 3-1
Summary of Site Considerations**

Site Elements	Preserve Sub-area	Western Hills Sub-area	McCosker Sub-area	Site Considerations
PROJECT SETTING				
Land Uses	✓			676 acres designated as Natural Units
		✓		389 acres designated as Natural Units contained in conservation easement
			✓	245 acres with a proposed designation of Natural Unit
	✓			6.9 acres designated as Recreation/Staging Area Unit
		✓		0.5-acre Recreation/Staging Area Unit
Views/ Aesthetic Quality			✓	5 acres of previously developed and disturbed lands with a proposed designation of Recreation/Staging Area Unit
	✓	✓	✓	Special Protection Features and Special Management Features
	✓			Prominent visual feature - Round Top
	✓	✓	✓	Panoramic views from ridgelines and peaks
	✓	✓	✓	Secluded, enclosed views from within valleys and deep canyons
Climate and Noise	✓			Volcanic features
	✓			Stone labyrinths
	✓	✓	✓	Mediterranean
Topography, Geology and Soils	✓	✓	✓	Persistent fog layers during the summer months
	✓	✓	✓	Ambient noise in the Project vicinity fairly low; approximately 47.2 dBA L _{eq}
	✓	✓	✓	Moderately steep to steeply sloping terrain with northwest-trending ridges
	✓	✓	✓	Dominant ridges - Gudde Ridge, Flicker Ridge
	✓	✓	✓	Major geologic formations - Siesta, Moraga, and Orinda
	✓	✓	✓	High potential for seismic activity with active major northwest-trending faults
	✓	✓	✓	Area outside an Alquist-Priolo Earthquake Fault zone
	✓	✓	✓	Moderately steep to very steep well-drained clay loams and loams
Hydrology and Water Resources	✓		✓	Geologic formations include potential for paleontological artifacts
		✓		Headwaters of San Leandro Creek, a perennial creek
			✓	Headwaters of Brookside Creek, a perennial creek
			✓	Alder Creek and several tributaries largely filled and culverted
			✓	Groundwater, where tested, approximately 8 to 32 feet below ground surface
	✓	✓	✓	Alder Creek and San Leandro Creek water quality parameters in normal range
			✓	Uplands generally not subject to regional storm-related flooding
Biological Resources			✓	Limited areas in valley floors subject to short term local flooding hazards
			✓	Limited 100-year flood zone around the confines of San Leandro Creek
	✓	✓	✓	Native habitat types: oak and riparian woodland, grassland, coyote brush scrub
	✓	✓	✓	Large tree groupings or "plantations" of eucalyptus and Monterey pine
Ongoing Land-Habitat Management Programs	✓	✓	✓	High potential for several special-status plant species
	✓	✓	✓	Moderate potential for special status wildlife species
	✓	✓	✓	Grassland communities maintained primarily by grazing
	✓	✓	✓	Mixed Sage Series managed to primarily through limited grazing
Cultural Resources	✓	✓	✓	Oak and Riparian woodland communities managed to conserve woodland areas for plant diversity
	✓	✓	✓	Integrated Pest Management Program directed at adaptive management practices in accordance with evolving science findings and technologies
	✓	✓	✓	No known Traditional Cultural Resources/Properties (TCRs)
	✓	✓	✓	Potential for buried prehistoric archaeological deposits is low
	✓	✓	✓	Potential for buried historic-period archaeological deposits is moderate
	✓			Historic Land Uses – 1800s – 1936 water supply and watershed
	✓	✓	✓	Historic Land Uses – 1860s – 1970 ranching
✓	✓	✓	Historic Land Uses – 1941 – one of the original EBRPD parklands	
		✓	Historic Land Uses – 1940-1960s quarrying	
		✓	Historic Land Uses – 1950s-1970s construction and rock crushing business	

**Table 3-2
Summary of Facilities, Programs, and Services**

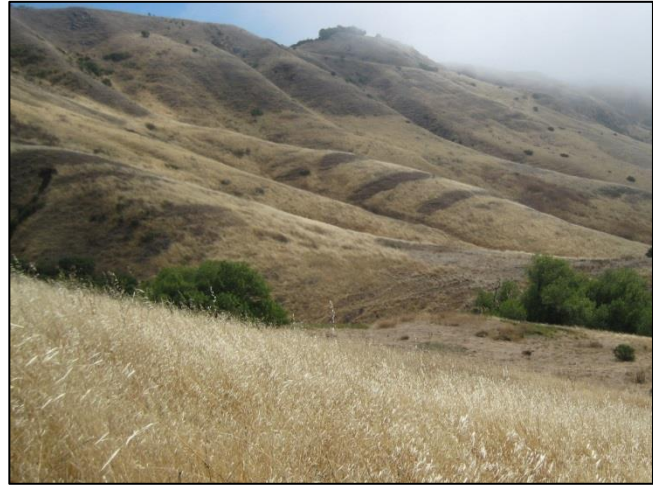
Site Elements	Preserve Sub-area	Western Hills Sub-area	McCosker Sub-area	Site Considerations
RECREATION AND INTERPRETATION				
District-wide Visitation Trends¹				Visitors frequently travel up to five miles (65%) by personal vehicle to use regional parks/trails
				Trail use activities (e.g., walking, hiking and biking) rank as highest activity preference
				Tent camping ranks as the highest camping preference followed by backpacking
Project Area Visitation Trends²	✓			Approximately 2,321 people living within one-half-mile of the park have opportunities to access this site by hiking, bicycling or riding horses on trails
	✓			Approximately 478,750 visitors at Robert Sibley Volcanic Regional Preserve in 2017
	✓			15,540 students from 29 schools within 5 miles of Project area
	✓			344 visitors stayed at Sibley Preserve backpack camp in 2017
Facility and Program Types	✓			1,895 visitors participated in interpretive programs in 2016 - average group size 34/ event
	✓			Backpack camp providing traditional trail-related tent camping
	✓			Interpretive pavilion
	✓		✓	Public restrooms
Existing Access	✓			"Education Use Area"
	✓			Main Staging Area - parking for 38 cars.
	✓		✓	Old Tunnel Road - parking for 13 cars
	✓		✓	Wilcox Staging Area - parking for 10 cars
Existing Trail System	✓		✓	Access via trails from Huckleberry Preserve Staging Area - parking for 12 cars
	✓		✓	Trails for hiking
	✓		✓	Trails for dog walking
	✓		✓	Trails for biking
	✓		✓	Trails for equestrian use
	✓			Self-guided interpretive trails
				Regional trails that connect parklands and communities
PARKLAND SERVICES				
District Presence	✓		✓	On-site park staffing
	✓			Project area served by the District's Central Interpretive Sector at Crab Cove Visitor Center in the City of Alameda ²
	✓	✓	✓	District police vehicles and helicopters patrol the Project Area daily
	✓	✓	✓	Project in Mutual Response Area (MRA) with Moraga-Orinda Fire Protection District
District Facilities and Infrastructure	✓			Trail Safety Patrol and Ivan Dickson Volunteers support Park staff ²
	✓			Park office and service yard
	✓		✓	Park residence
	✓		✓	District Sanitation and Recycling Department maintains sewage and wastewater
	✓		✓	Solid waste collection services provided by Central Contra Costa Solid Waste Authority
	✓	✓		Municipal Water
			✓	Spring water
		✓		Municipal Sewer
Obligations - Maintenance Easements, Agreements, and Licenses	✓			Septic
	✓		✓	Vault or portable – pumped system
	✓			Inholding parcels
	✓			Public right-of-way – Old Tunnel Road
		✓	✓	PG&E) 115kV Power Lines, Access Roads and Easements
			✓	EBMUD trail use license
			✓	Gas pipeline easement

1 As these are District -wide trends, they inform, but are not strictly tied to the Project area

2 While applicable to the entire Project area, data is tied to Preserve sub-area only since McCosker sub-area was only recently conveyed to the District and the Western Hills sub-area has yet to be conveyed to the District

This page is intentionally blank

Chapter 3 – Section 3-2 Project Setting



3.2.1 Natural Features

3.2.1.1 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 East Bay 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-Bay 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. Willow/Alder Riparian woodlands occur within a drainage 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 former 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 Boulevard northwest of the main entrance along with cypress trees (*Cupressaceae spp.*).

This 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 along with three acres designated as Recreation/Staging Units. Special Protection Features and Special Management Features are also described for this sub-area. Natural Units are managed for their unique or fragile habitat values with public access primarily limited to trails.

3.2.1.2 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, 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 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, east-facing slopes extend downhill to intersect the valley that contains the Wilder sub-division, while the south facing slopes extend downslope to merge with the McCosker sub-area. Several drainages on these south-facing slopes contribute to the “Alder Creek watershed.”

A mix of mixed oak-bay woodland and grassland environments interspersed with some smaller areas dominated by seasonal wetlands, and developed/ruderal plant communities make up the landscape character of the Western Hills sub-area. Oak Woodlands, consisting of a mix 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. Willow/Alder Riparian woodlands are intermixed with the Oak/Bay 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.

The Western Hills sub-area conservation easement has a proposed designation of Natural Unit. The 0.5-acre staging area has a proposed designation of Recreation/Staging Area Unit.

3.2.1.3 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 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 of a small “kitchen orchard” remain at the base of the slope leading up to two graded terraces. The lower terrace contains cultivated, non-native trees and shrubs in containers from a former nursery operation.

An access road leads up from the valley floor to two level- to gently-sloping pads at the eastern boundary of the valley floor. This two-terraced area is composed largely of ruderal grasslands separated by stands of coyote brush. Remnants of a former construction business 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 is located farther north and west off the main access road. Vegetation at this site consists primarily 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. The LUPA refers to the larger terraced area as the Fiddleneck Field, and the upper, smaller terrace as Fern View Terrace.

Alder Creek, perennial creek, occurs largely 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. The McCosker sub-area contains 245 acres with a proposed designation of Natural Unit, including the restored creek sections, and five acres of previously developed and disturbed lands with a proposed designation of Recreation/Staging Area Unit. Once restored, Alder and Leatherwood Creeks would be designated as Special Protection Features.

3.2.2 Land Use Overview

Located immediately adjacent to the major population centers of western Alameda County and central Contra Costa County, the Project site is characterized as an area with a variety of natural resources that offer a rich 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. The East Bay Skyline National Recreation Trail/Bay Area Ridge Trail/Juan Bautista de Anza National Historic Trail, which traverses the Preserve in north-south trajectory, provides connections to several District regional parks along the East Bay Hills ridgelines.

3.2.2.1 Prior Land Uses in the Project Area

This section refers to historical periods land conditions and persons that have served to directly inform to current conditions in the LUPA area. Refer to *Section 3.1.8 Cultural Resources* for a summary of land uses preceding the American Farm and Ranching Era.

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 (Refer to *Figure 6 - Land Grant Boundaries*). Presumably these lands were used for livestock grazing during this period (Mundie & Associates, 1992).

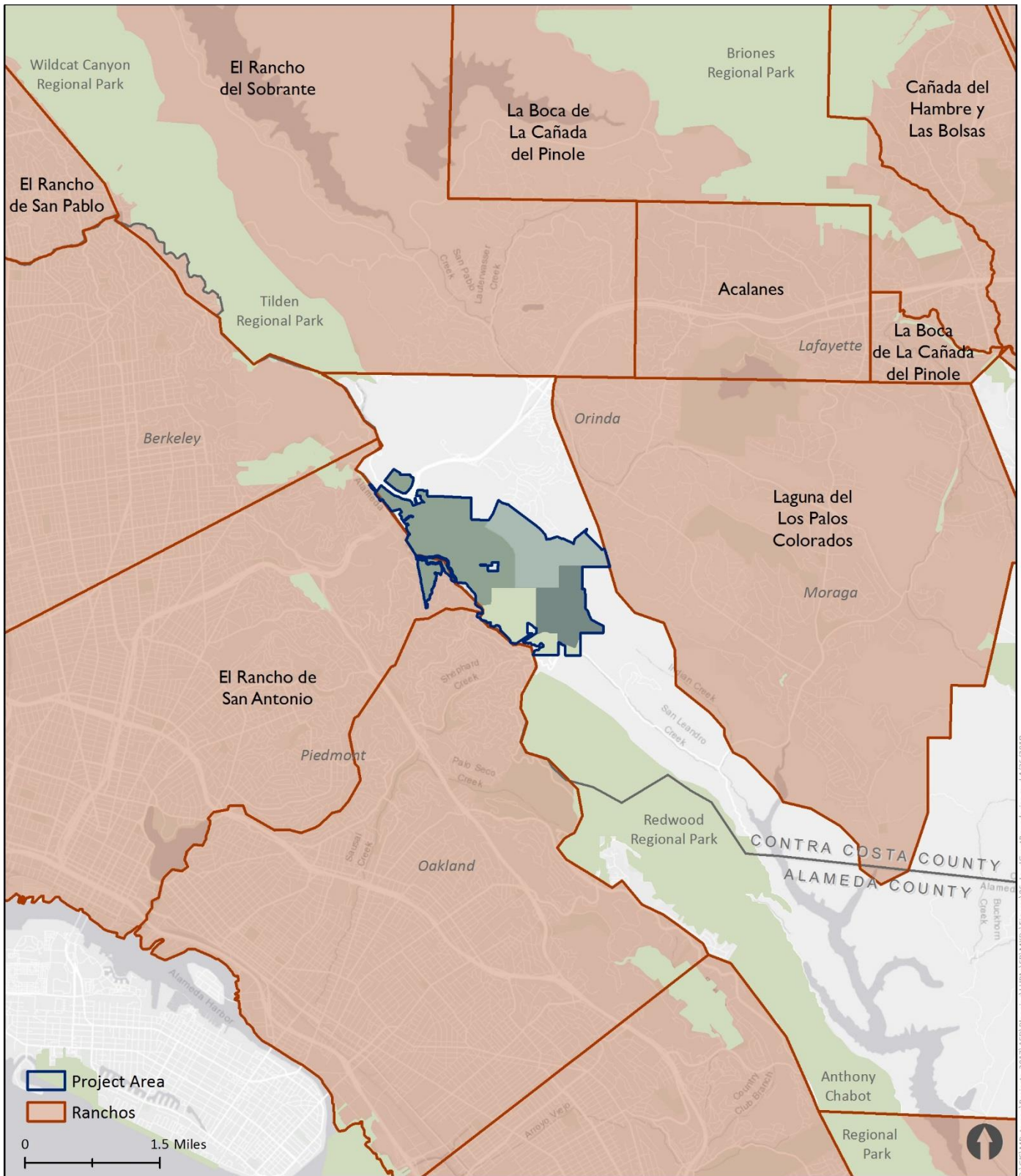
American Farm and Ranching Era

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 into at least eleven smaller parcels generally 80 to 160 acres in size in the 1860s. 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 by 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 (Montanera EIR).

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 continued to own the McCosker sub-area land until the 2000s.

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 into the 1970s. 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, that now houses District maintenance equipment, a small “kitchen orchard”, a pump house, the remains of a rock quarry and rock crushing plant, retaining walls and building foundations, underground storage tanks, and various elements from the former construction and ranching enterprises.

The 250-acre McCosker parcel 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 parcel was donated to the District in 2010. Cattle grazing and trail uses are the current primary uses of the site.



D:\GIS\MapServer\Projects_2017\ASDV\Planning\LUPA\SRM\KDS\Figures\06_LandGrantBoundaries.mxd 4/26/2018

FIGURE 6: LAND GRANT BOUNDARIES

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 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 1941.

Regional Transportation Development

The first motor vehicle tunnel through the East Bay Hills connecting the communities of the East Bay with communities east of the hills was the Kennedy Tunnel. This 17-foot wide shaft was located about 200 feet above the current Caldecott Tunnel and directly below what is now a part of the Preserve sub-area. This tunnel was approached by a new road dubbed "Tunnel Road" which started at the top of Ashby Avenue in Berkeley. The tunnel was very narrow and arched, such that two tall buggies could not pass each other. The tunnel height was increased in 1915 by three feet to accommodate larger vehicles. When the Caldecott tunnel was completed, the Kennedy tunnel was used mostly by pedestrians until it collapsed. It was sealed off in 1947 leaving no obvious trace of the old opening.

The second route through the East Bay Hills was the Oakland, Antioch, and Eastern (OA&E) electric railroad. Completed in 1913, this rail line connected the City of San Francisco to the City of Sacramento with the construction of the 3,700-foot long Redwood Peak Tunnel. In full operation, the Eastport route extended through the community of Canyon with the Eastport Station near the McCosker entry located in what is now Huckleberry Preserve. The stop at Pinehurst in the Canyon redwood groves became a popular picnic spot for East Bay residents. 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.



The third route through the East Bay Hills was the Caldecott Tunnel, named after Thomas Caldecott. The Caldecott Tunnel is a four bore, east-west highway tunnel that connects East Bay communities to communities in Contra Costa County. The first two bores of this tunnel were opened to vehicle traffic in 1937 cutting auto commute time between the East Bay and the Orinda - Lafayette area from two hours to about 35 minutes. The third bore opened in 1964. Construction of the fourth bore started in January 2010 and was completed in 2013. Currently, the two oldest bores carry eastbound traffic and the two newer bores carry westbound traffic.

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.

Kaiser Sand and Gravel Company took control of the quarry in the Preserve sub-area sometime in the 1940s. However, the 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 (2004 Draft Sibley Preserve).

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. 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. Most of the materials from the construction and rock crushing business-up were removed by private parties prior to the transfer to the District, although remnant concrete walls and some other features remain.

3.2.2.2 Current Land Uses in Surrounding Area

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 Cities of Lafayette and Orinda and the Town of Moraga.

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 a valley that contains the Wilder residential development. At full build-out, the development will contain 245 home sites, a private swim club, Wilder Park and the City Art and Garden Center. These hills generally separate the valley from previously developed residential neighborhoods within the City of Orinda to the east (e.g., Brookside, Crestview Drive, and 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, unincorporated 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.

The Preserve sub-area includes several inholdings in a 4.4-acre area at the summit of Round Top. This site contains communication facilities owned by EBMUD and Skyline Partners.

Refer to *Figure 7 - Existing Public Facilities in Project Vicinity* for the location of major public facilities within the five-mile radius surrounding the Project.

3.2.3 Views/Aesthetic Quality

3.2.3.1 Visual Setting

Panoramic and Intimate Views

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

Whether park visitors explore these areas on foot, horseback, or bicycle, they are afforded panoramic views from ridgelines and peaks with elevations ranging between 1,100 and 1,600 feet, 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 mixed oak-bay woodland and grassland environments with some smaller areas dominated by seasonal wetlands, tree plantations, and developed/ruderal landscapes. Notable bands of varying colors and density of grasslands define the underlying Moraga and Orinda geologic formation in the south facing grassland areas. These distinctive bands of grasses can be seen within the McCosker sub-area when looking north from vantage points within the McCosker sub-area, including the graded terraces proposed for recreation development.

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. These include the North and South Quarries.

Within the valley near the entry off Pinehurst Road, the dominant features include several graded pads with an equipment shed developed to support construction activities and a single-family residence, although none of these facilities are visible from Pinehurst Road. The dominant

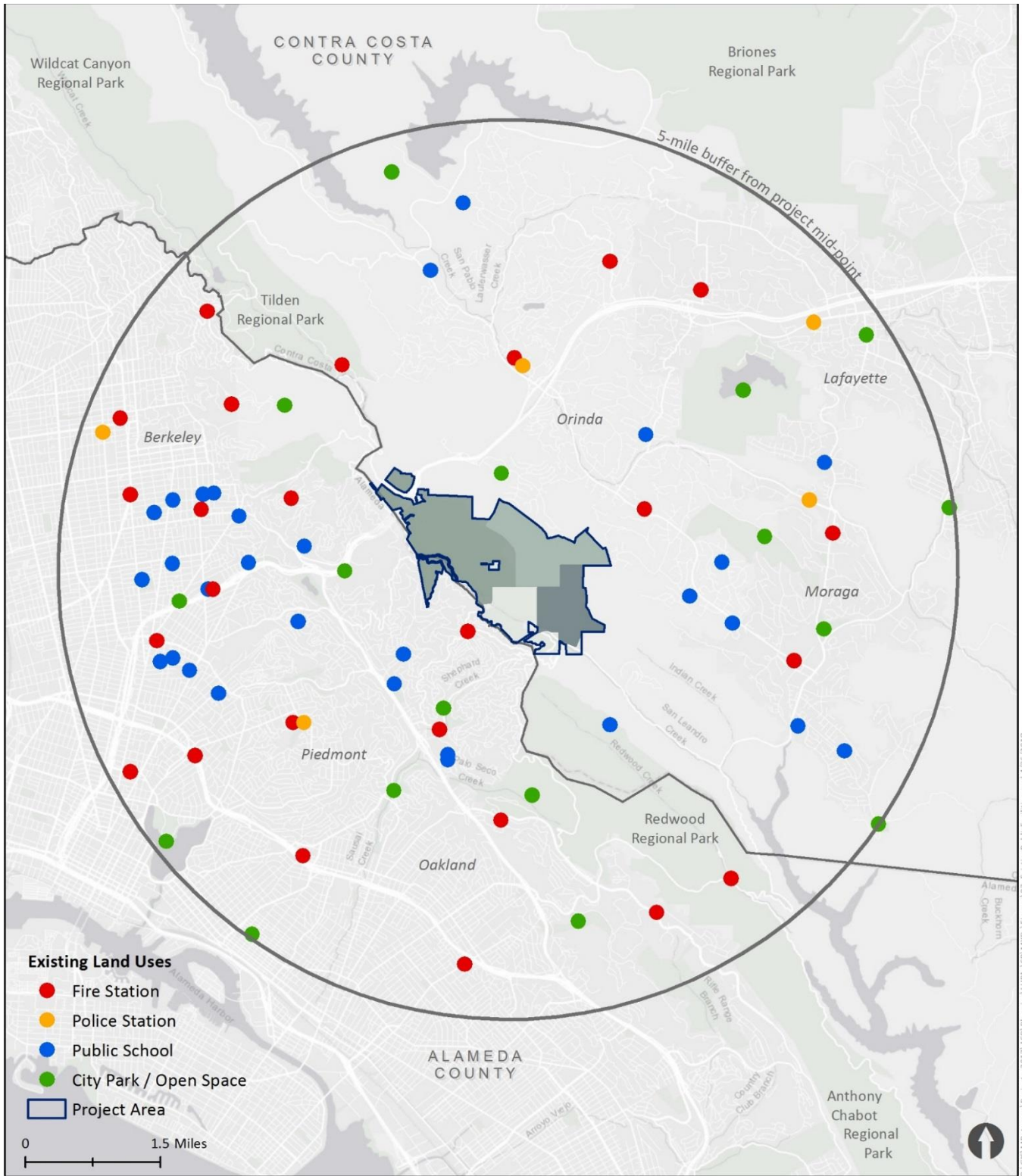


FIGURE 7: EXISTING PUBLIC FACILITIES IN PROJECT VICINITY

vegetation in most of these previously developed sites areas is annual grasslands, and ruderal and developed habitats. Drainages in the valley floor are visible intermittently as most of these drainages are largely contained in concrete and metal pipes overlain with fill.

Other notable visual elements within the interior of the Project area include: various grazing infrastructure including corrals, water troughs, fencing, PG&E 115kV high voltage transmission lines suspended from large towers varying from 90 to 120 vertical feet in height that cross the site in various locations in an east-westerly direction, paved access roads and communication facilities, including metal towers that extend upward from inholding parcels at the summit of Round Top.

Refer to *Figure 8 - Visual Setting Key* for the location of representative views of the Project area shown on subsequent pages.

3.2.3.2 Views from the 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 immediate Project area consists mostly of open space, including protected watershed lands.

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 as features such as Mount Diablo, 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.

3.2.3.3 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.

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 two 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 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 Highway 24.

State Route Highway 24 (SR-24) is the only state-designated scenic highway in proximity to the Project. This 8.8-mile scenic highway extends from the east portal of the Caldecott Tunnel to Interstate 680(I-680) near City of Walnut Creek. The natural appearance provided by the mixed oak-bay 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 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 Red-tailed Hawk Staging Area. This road provides access to two parking areas that will provide access to the Western Hills sub-area; 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 of EBMUD lands and glimpses of Mount Diablo.

McCosker Sub-area

Pinehurst Road is a two-lane road that winds along ridgelines and through 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.

3.2.3.4 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 Preserve sub-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.

Site Structures and Facilities

Existing facilities are generally located near, and associated with, the access points. These features include parking lots, restrooms, and park residences. In addition, at the Sibley Main

Staging Area there is an interpretive pavilion. At the Old Tunnel Road entry, there is also a District service yard. The Old Tunnel Road residence and service yard are located at the road's northern terminus and views into the site are limited by terrain and the wood fencing and gate at the staff entry point.

Existing facilities in the McCosker sub-area are largely related to residential uses and remnants from a former construction and rock crushing business. The residence at the McCosker site is generally obscured from view from most vantage points due to the terrain and dense vegetation.

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 to be 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 private parties located in 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 developed valley floor from most vantage points.

3.2.3.5 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.

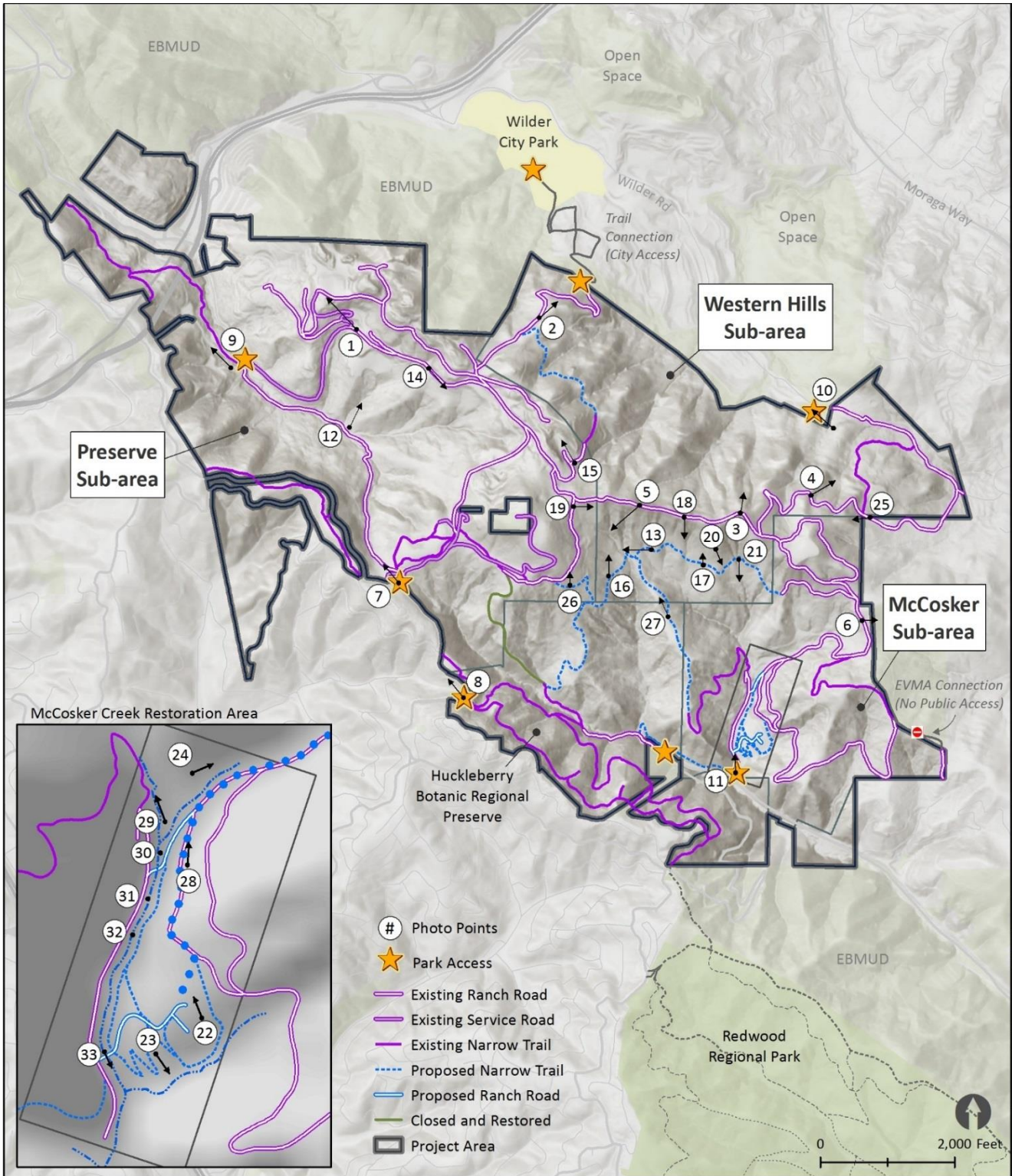
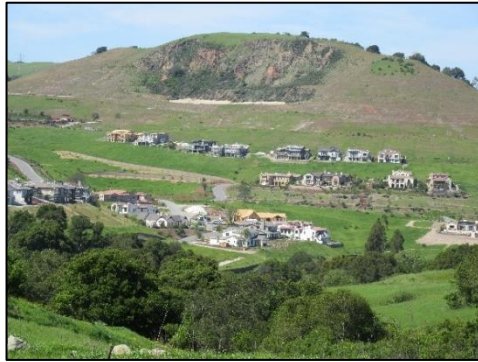


FIGURE 8: VISUAL SETTING KEY

Views from the Proposed Project Area into Surrounding Lands



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



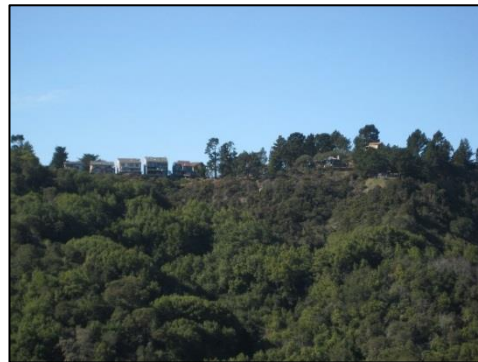
2 Views from Preserve Ridgeline looking toward Wilder Development



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 Gudde Ridge Trail in Western Hills sub-area looking West



21 Looking south from proposed Gudde 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

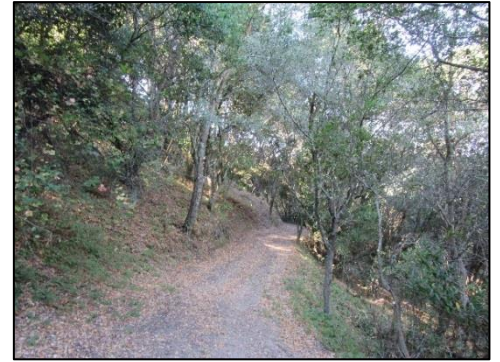
Views from within the Project Area



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-area



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

3.2.4 Climate and Noise

3.2.4.1 Climate

The climate of this parkland unit is a Mediterranean type with warm, dry summers and cool, wet winters. 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 Contra Costa County around the Carquinez Strait. Annual rainfall averages between 18 and 23 inches across the county.

The complex topography of the East Bay Hills and local weather phenomena cause considerable climatic variability between the western, bay facing hillsides, the eastern interior facing slopes, and the deep canyon areas. Persistent fog layers occur during the summer months in the western facing slopes, while 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. However, 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.

The varying micro climates, and high fire hazard levels associated with the hot and dry periods of late summer and fall, the steep topography of the East Bay Hills, and seasonal wind patterns and flammable vegetation may affect visitor use patterns.

Climate Change

Natural community values include micro-climate variations, air purification water filtration natural sequestration and carbon storage. Climate change can be expected to affect the health and biodiversity of the natural communities in the Project area and the function of the water system in interconnected ways that are still too complex to understand. The Master Plan 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.

3.2.4.2 Noise Environment

Ambient noise levels in the Project vicinity is fairly low; approximately 47.2 dBA L_{eq}. Long-term noise measurements indicate that noise in the Project vicinity ranges from approximately 50.4 dBA to 65.7 dBA CNEL below 70 dBA CNEL, the normally acceptable exterior noise level for recreational uses under Contra Costa County noise standards.

Traffic on Skyline Boulevard, Wilder Road and Pinehurst Road are the primary noise sources. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust systems with the amount of noise varying according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer.

Other sources of noise that can be heard from various vantage points in the Project Area include Highway 24, construction equipment associated with the development of the Wilder subdivision, and recreational activities at the Hills Swim and Tennis Club on Manzanita Drive in the City of Oakland. 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 any airports. Other noise sources not related to human activities include birds and other wildlife.

The District's parkland activities are typically associated with passive recreation activities that would not typically exceed the recreational noise standard of 70L_{dn} and routine maintenance, which can include periodic, short term use of power equipment that could exceed the recreational noise standard. To minimize noise impacts, the District's ongoing policy is to require that parks operations involving equipment with high noise levels (e.g., vegetation management and grading activities) be limited to the hours between 7:00 a.m. and 5:00 p.m. and only occur on weekdays. In addition, the short-term nature of most of these maintenance activities means that these activities would only occur in one location for a short period, such as a few days or one week, before moving to a different location. Thus, park visitors and nearby residences are exposed to mechanical equipment noise associated with parkland operations for only a short period of time while specific routine maintenance activities occur.

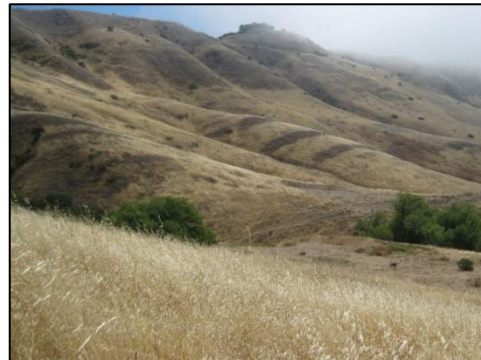
3.2.5 Topography, Geology and Soils

3.2.5.1 Research Methodologies

Information about Project area geology and soils resources was obtained through historical information, site-specific information and review of conceptual design information. The literature and data review were supplemented with an analysis of historical aerial photography, site reconnaissance visits, subsurface explorations, and sample review through laboratory testing.

3.2.5.2 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 that 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.

3.2.5.3 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 Valley 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.

3.2.5.4 Geologic Formations

Bedrock units in the Project area are comprised primarily of three major geologic formations, Siesta, Moraga, and Orinda as described below. Also refer to 3.2.9.3 - *Cultural Resource Evaluation* for an assessment of paleontological sensitivity for each of these geologic units.

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.

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 its 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 nine to ten 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. This geological unit has 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 centimeters thick with thin shale partings. Distinctive black, laminated chert crops out locally in the East Bay 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.

3.2.5.5 Faults 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. The closest fault 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 Project area. 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 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 in the Project area. Studies by the United 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.

Slope Stability

There are some substantial slopes within the Project area with moderate to steep slopes present in each sub-area. Some of these slopes may be subject to instability in a static condition or during an earthquake.

3.2.5.6 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.

Three soil types are mapped in the Project area: Los Osos clay loam, Millsholm loam, and Gilroy clay loam. However, prior use of portions of the Project area likely has resulted in alteration of some of the native soils.

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.

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-bay 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).

3.2.5.7 Surface and Sub-Surface Conditions

Most of the Project activities involving mass grading operations with large quantities of cut and fill, modifications of existing infrastructure, and construction of new infrastructure and facilities would occur within the McCosker sub-area. Therefore, 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.

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 the Eastport park entry.

Upper Valley Floor

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 have developed. 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. This 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 are found along the higher access road to either side of the north swale and large cracks indicative of creeping terrain can be seen on the hillside northeast of the metal equipment building.

Sub-surface Conditions within the Recreation Development Sites and Creek Restoration Zone of the McCosker Sub-area

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. In the upslope areas and areas near the former quarry, Moraga Formation volcanic rocks can be seen 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 are likely to be of a non-natural origin (i.e., fill).

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 Upper San Leandro Creeks. During the geotechnical investigation of the McCosker sub-area, groundwater was typically found at depths ranging from approximately eight to 32 feet below ground surface, although groundwater was not encountered in the borings drilled within the McCosker valley floor.

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 structures is highly likely. The expected level of ground shaking in the Project 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 possibly 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.

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.

3.2.6 Hydrology and Water Resources

3.2.6.1 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 East Bay 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.



3.2.6.2 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, Alder and San Leandro Creeks 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 northwestern slopes of Round Top, and much of the land in the Preserve Sub-area, are within a 463-acre, Round Top 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.

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 sub-area. 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-thirds of this site drain 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 also several seasonal tributaries 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 and 3,061 linear feet of riparian habitat, referred to as Alder and Leatherwood Creeks as shown in *Figure 9 - 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

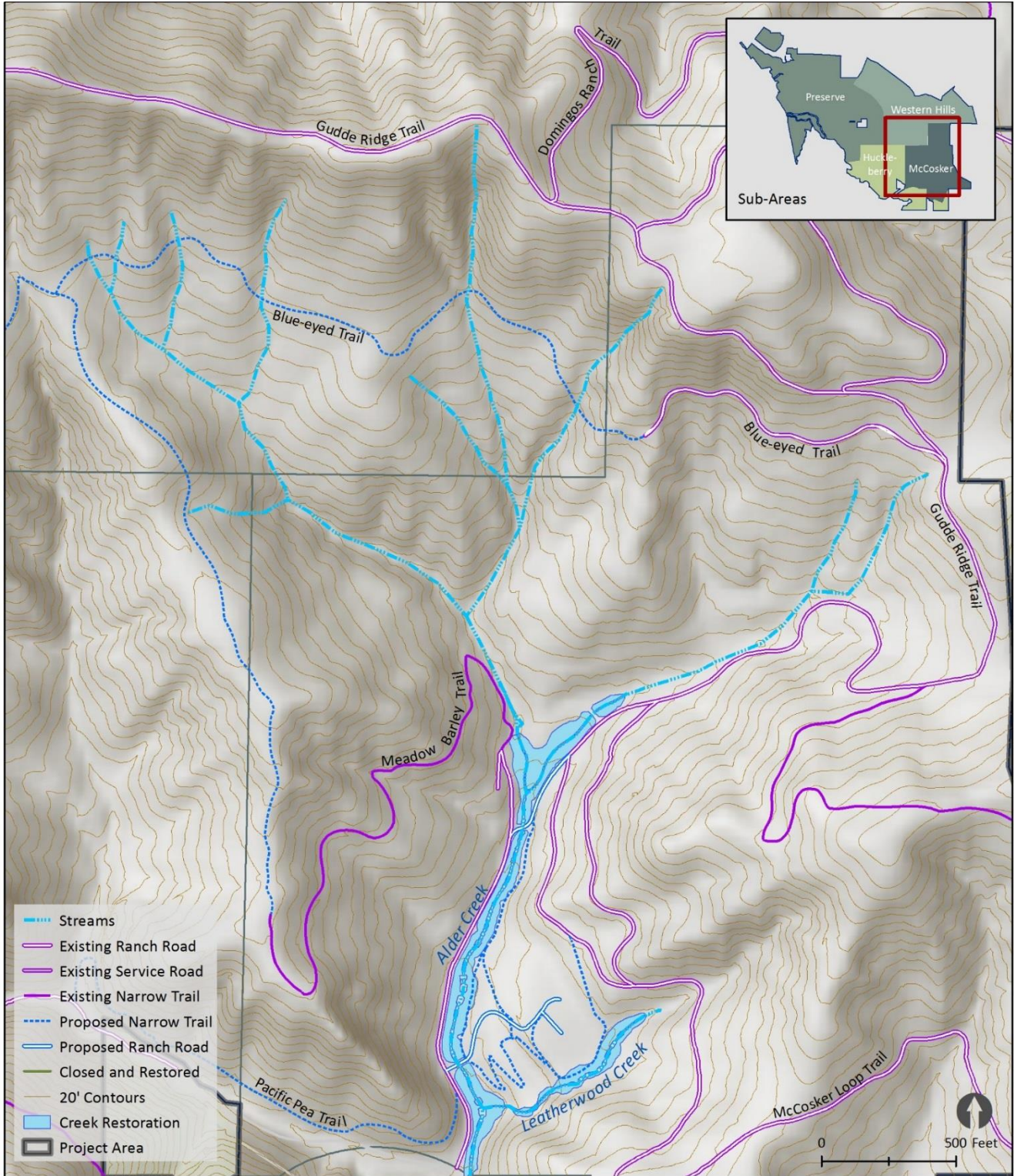


FIGURE 9: ALDER CREEK WATERSHED

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 Leandro Creek (temperature; conductivity; turbidity and dissolved oxygen), were all within a normal range consistent with background levels for the region.

3.2.6.3 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.

The Preserve sub-area contains a seasonal pond that was created as a result of quarrying activity. It 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.

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. These channels 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).

3.2.6.4 Groundwater

In general, groundwater resources in the uplifted highlands of the East Bay Hills, including the Project area, tend to be in three types of aquifers and several types of perched compartments. The aquifer types are within: 1) unconsolidated channels; 2) thick alluvial-filled upland valleys, and 3) 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 slip 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.

3.2.6.5 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).

3.2.6.6 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.

3.2.7 Biological Resources

3.2.7.1 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 Database (CNDDDB) 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.

Field survey methods used 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.

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.

District botanists conducted field surveys March 9, 2017 of McCosker campground and creek restoration areas for *Dirca occidentalis* and *Fritillaria* spp. ESA biologists, Chris Rogers and Erika Walther, conducted field reconnaissance surveys on May 19, 2016, July 5, 6, and 11, 2017, September 25, 2017, and October 15, 2017.

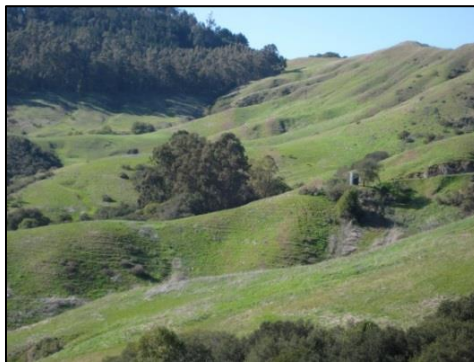
Prior to the reconnaissance surveys, databases were reviewed for the Project sites and regional vicinity (CDFW, 2016, 2017; CNPS, 2016, 2017; USFWS, 2016, 2017; i.e., the Oakland East, Briones Valley, Walnut Creek, Las Trampas Ridge, Hayward, San Leandro, Hunters Point, Oakland West, and Richmond U.S. Geographical Survey (USGS) 7.5-minute topographic quadrangles).

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. Lists identifying special-status plant and animal species that may occur in the Project area are included in *Appendix D - Special Status Species List*.

3.2.7.2 Plant Communities and Associated Wildlife

Natural Communities

Natural communities, or habitat types, are assemblages of plants and animals found in 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 the District, WRA, ESA, and LSA. Each of these habitat types is described below and illustrated *Figure 10 - Natural Communities/Habitat Types*.

Special-Status Natural Communities

The California Department of Fish and Wildlife's (CDFW) 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 CNDDDB 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, 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. 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 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 serve 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 open space area 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 *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. 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 camera 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 using the Caldecott Wildlife Corridor to move through Sibley Preserve. As this is an ongoing study, no formalized written reports have been completed. Refer to *Figure 13 - Special Protection and Management Features* for the location of the Caldecott Wildlife Corridor Study Area.

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-habiting in many instances with stands of California native grasses.

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 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.

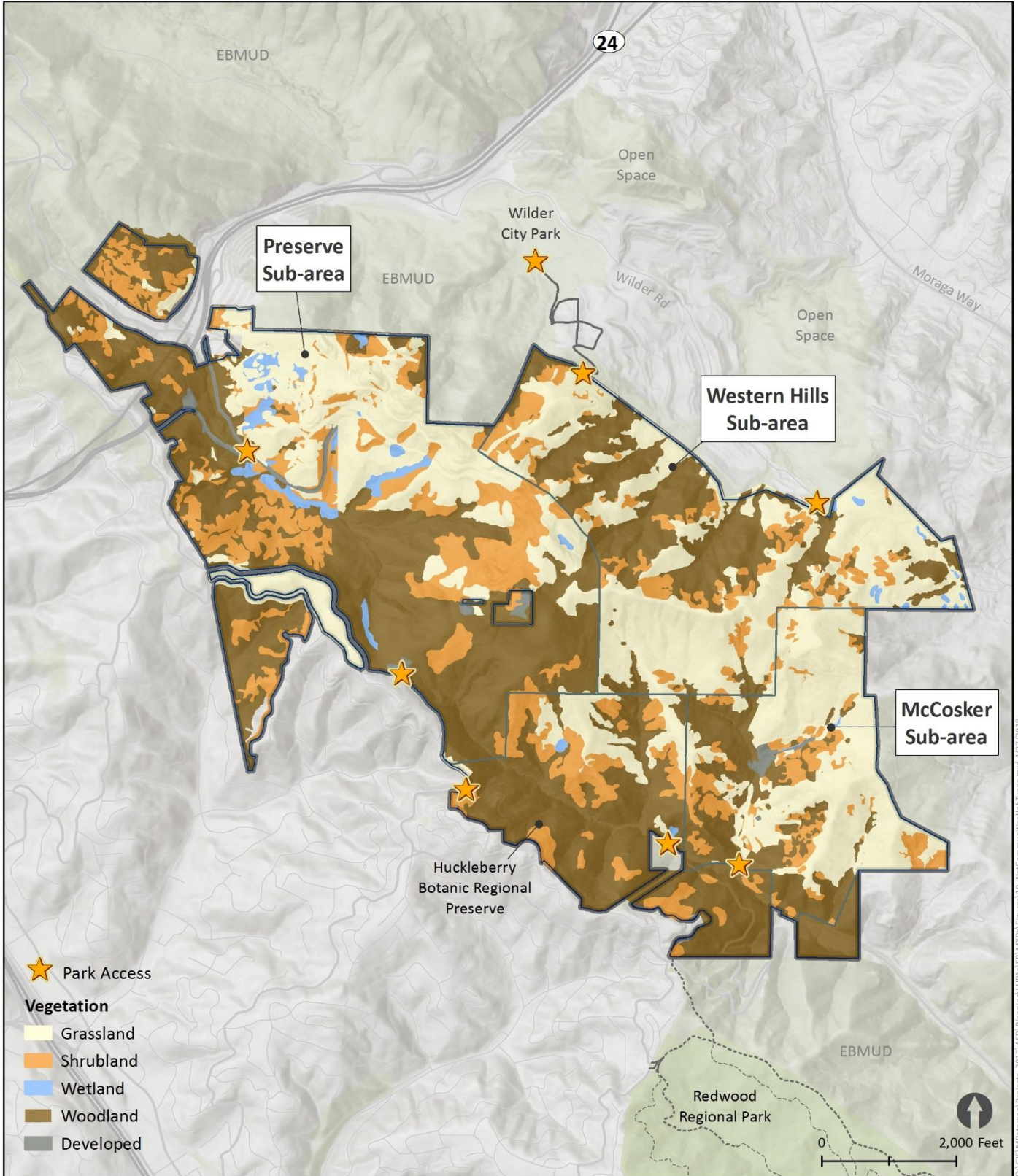


FIGURE 10: NATURAL COMMUNITIES / HABITAT TYPES

In the Preserve sub-area, grasslands are concentrated primarily in the northern third of the area 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 Roundtop 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 needle grass (*Stipa pulchra*) and foothill needle grass (*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*), Medusa head (*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 in this area can include, 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*).

Scrub Vegetation

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.

Coyote brush scrub can be seen throughout the Project area, often 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 the lack of disturbance in relatively mesic sites. With the removal of livestock grazing or management burns coyote brush invades the grassland and eventually is replaced by oak woodland or forest. California sagebrush scrub, co-dominated by bush monkeyflower and California sagebrush, can be seen 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.

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 also provide habitat for California scrub jay (*Aphelocoma californica*), spotted towhee, wrentit (*Chamaea fasciata*), white-crowned sparrow (*Zonotrichia leucophrys*) and northern mockingbird (*Mimus polyglottos*), and 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.

Oak Woodlands

Oak Woodlands consist of a mix of trees that reach 30 to 50 feet in height. Where the oak-bay 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.

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-Bay 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 Upper 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 many 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 (*Gerrhonotus coeruleus*), 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*).

Riparian Woodlands

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.

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 Riparian woodlands are intermixed with 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 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 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 fish. The rainbow trout (*Oncorhynchus mykiss*) 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 (P. Alexander, unpublished data, 2013, J. Sullivan, unpublished data 2016).

Wildlife species that have been 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 corridors in the Project area include California red-legged frog (*Rana draytonii*), Alameda whipsnake (*Coluber 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 could be a resource to native rainbow trout and other riparian species once the main tributary (Alder Creek) that drains these tributaries is restored.

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, hedgenettle (*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 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.

North of the McCosker sub-area, the culvert under Pinehurst Road extending into the Huckleberry Botanic Preserve is 170 feet 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 this northerly 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. Wetlands include a small wetland created through previous grading and filling activities by a previous owner in the McCosker sub-area, and seasonal wetlands constructed in the Western Hills sub-area as mitigation for impacts associated with the Wilder residential development. The ten-year monitoring period has been completed for wetlands in the Western Hills sub-area 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 eragrostis*), 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*), bristly 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 the equipment shed.

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 (Mundie & Associates, 1992). However, these species are more likely to occur in larger wetlands than in depressions or seeps along the trail. 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. Today large stands or plantations of pine and eucalyptus trees have created mono-cultures primarily in the Preserve sub-area.

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 Main Sibley 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 Boulevard 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

Within developed areas of the Project area various ornamental trees and shrubs have been planted. These sites include: 1) the area around the two park residences and the park office in the Preserve sub-area; and 2) in the valley floor of the McCosker sub-area where the McCosker family resided and maintained a construction 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. Remnants of a small “kitchen orchard” remain at the base of the slope leading up to the two graded terraces. This orchard includes apple, fig, pear, cherry and, citrus trees. The lower terrace contains cultivated, non-native trees and shrubs in containers from a former nursery operation. The upper terrace is composed largely of ruderal grasslands with a mix of ornamental trees. 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 access road. Near the McCosker park security 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'*).

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. PG&E high voltage transmission line cross all three sub-areas. Vegetation under the towers is managed by PG&E as part of the maintenance of the towers.

3.2.7.3 Special Status and Notable Plant Species

Candidate, sensitive, or special status species listed by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS) are referred to as special status or listed species. Plants considered significant State rare or endangered (1B - California Native Plant Society (CNPS) are also referred to this way. A list of species documented from the regional project vicinity was compiled from the California Natural Diversity Database (CNDDB), California Native Plant Society Rare Plant Ranking (CRPR), and USFWS (CDFW, 2016; CNPS, 2016; USFWS, 2016). Lists containing the Official USFWS Species List for the Project area, as well as the CNPS and CNDDB lists, which constitute a list of special-status plant and animal species that may occur in the Project area are included in *Appendix D - Special Status Species List*.

These species have varying degrees of legal protection under both Federal and California Endangered Species Acts, and recognition under the California Environmental Quality Act (CEQA). Species of special concern are designated by the California Department of Fish and Wildlife (CDFW).

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 balsamorhiza (*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 amphibolus*), Woodland woolly threads (*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 (*Arctostaphylos pallida*)

Pallid manzanita is a federal-listed threatened and state-listed endangered plant that also has a CRPR of 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 historic 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, at the Chabot Space and Science Center, and in Joaquin Miller Park. In 1992, three pallid manzanitas were discovered in the Preserve sub-area (USFWS, 2003). The CNDDDB indicates observations of colonies of this species made in 2016 in Huckleberry Botanic Regional Preserve immediately adjacent to the Project area (CDFW, 2016b). 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 were 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 (*Amsinckia lunaris*)

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 CNDDDB as occurring on Gudde Ridge in the Western Hills sub-area (CDFW, 2016b). 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 (*Dirca occidentalis*)

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. [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] 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, 2016b; Calflora, 2016, and EBRPD observations 2017).

Oregon Meconella (*Meconella oregana*)

Oregon meconella 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 1116 and 2133 feet. Suitable habitat is present within the Project area and several observations are recorded from 0.25 to 0.5-mile north of the Project area (CDFW, 2017; Calflora, 2016) Oregon meconella is considered to have a **high** potential to occur within Riparian woodland habitat in the Project area.

3.2.7.4 Special Status Wildlife

Based on a review of the CNDDDB, inventory of rare plants and animals, and limited field surveys conducted during the Spring of 2013 and 2017 by District biologists and 2016 and 2017 by ESA biologists, the Project area contains habitat that could support several special status wildlife species. Special status species, which were determined to have at least a **moderate** potential to occur within or adjacent to the Project area include: California red-legged frog (*Rana draytonii*), golden eagle (*Aquila chrysaetos*), Cooper's hawk (*Accipiter cooperii*),



Alameda whipsnake (*Masticophis lateralis euryxanthus*), and San Francisco dusky-footed wood rat (*Neotoma fuscipes annectens*). Refer to *Appendix D - Special Status Species List* for a list of species and occurrences. The District monitors these species and maps locations of sightings on a routine basis. As necessary, sensitive habitat areas may be closed on a seasonal basis during breeding, migration or foraging periods to provide greater wildlife protection.

Alameda Whipsnake (*Masticophis lateralis euryxanthus*)

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, 2005a). 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, 2005a). 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, 2016c). The Project area lacks rock outcrops and chaparral, but includes grassland, and oak-bay woodland, habitats known to be used by AWS, within 500 feet of chaparral (USFWS, 2003). Prey species could be present in riparian corridors and oak-bay woodland, and AWS may occur in the Project area on a transient basis, though their primary chaparral habitat is not found within the primary proposed development sites of the McCosker sub-area.

Aquatic Species

California Red-legged Frog (Rana draytonii)

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, 2005b). In summer (non-breeding season), CRLF are likely to be found 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, 2005b). 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 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 and CNDDDB has no existing records for CRLF in this portion of the Project area (CDFW, 2017). 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.

Freshwater resident rainbow trout, which do not migrate to the ocean as part of their lifecycle, would be expected to occur within Alder Creek, once restored. Redwood Creek, which is within the San Leandro Creek watershed, also provides primary spawning and rearing habitat for the resident 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). 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 shed. 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. 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 (*Neotoma fuscipes annectens*)

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 during site surveys, on the ground or approximately 10 to 20 feet high in coast live oaks along the McCosker access road and the Meadow Barley Trail; 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.

3.2.8 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 through continuation of ongoing grazing and integrated pest management programs; and 3) enhancing

habitat for pallid manzanita (*Arctostaphylos pallida*) through implementation of best management practices as set forth in the pallid manzanita management plan.

3.2.8.1 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 keep livestock confined to designated areas. 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 incorporate 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 lateralis 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 whipsnake's 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 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 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/Bay and Willow/Alder 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 (CRLF) 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 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.

3.2.8.2 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 concern 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.

3.2.9 Paleontological and Cultural Resources

3.2.9.1 Research Methodologies

Information about Project area cultural resources was obtained through background research, which consisted of a records search, literature review, on-site investigations, and contacts with potentially interested parties as described below. The focus of this analysis was on the Area of Potential Impacts (API) where Project actions are proposed. These activities include: 1) creek restoration, 2) improvements to existing staging areas, 3) improvements to existing roadways and utilities, 4) bridge installation, 5) trail system expansion, and 6) recreation facility development as described in *Chapter 4 – LUPA Recommendations*.

Paleontological Resources Fossil Locality Search

Paleontological resources and unique geologic resource research for the Project included: 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.

Cultural Resources Records Search

On May 11, 2016, ESA staff conducted a cultural resources records search at the Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park. 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 records search consisted of the Project area with a 0.5-mile buffer around the proposed McCosker sub-area creek restoration and recreation development area as these areas have the greatest potential for discovery of cultural resources from ground disturbing activities.

The purpose of the records search was to: (1) determine whether known cultural resources have previously been recorded in a 0.5-mile radius of the McCosker sub-area creek restoration and recreation development 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.

Native American Correspondence

ESA contacted the Native American Heritage Commission (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, the District, as part of CEQA review for the Project, sent letters to California Native American Tribes listed in the NAHC's contact list regarding the Project.

The letters 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.

3.2.9.2 Paleontological and Cultural Resource Setting and Evaluation

This subsection summarizes information about paleontological and cultural resources in the Project area identified through background research.

Paleontological Resource Assessment

As discussed in 3.2.5.4 - *Geologic Formations* above, geologic units with high paleontological sensitivity occur throughout the Project area. A summary of previous studies and findings follows.

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 Project Area.

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 Alluvium 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 near 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 interpretive program at 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 (Refer to *Figure 13 - Special Protection Features*); 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 (Pisciotta and Garrison, 1981) and constitutes one of the major elements of California geology. The Monterey Formation can range up to several thousands of feet thick (Bramlette, 1946) and ranges in age from 3 to 15 mega-annum (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.

Ethnographic Setting

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 within the Project area, for hunting and food gathering trips, for gathering stone for making tools, and as religious sites along the peaks of the East Bay Hills.

A compilation of ethnohistorical, historical, and archeological data indicates that the San Francisco Peninsula was inhabited by a cultural group known as the Ohlone before European arrival. Specifically, ethnographic accounts show that the Huchiun group, of the Muwেকma 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, and the number of Chochenyo speakers reached 2,000, 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 (Levy, 1978).

Refer to *Section 3.2.2.1, Prior Land Uses in the Project Area* for a summary of Land Uses extending from to the 1830s to the present.

Cultural Resources Assessment

Overall, due to the Miocene age of the Project area's underlying geology, lack of previously recorded archaeological sites in or near the Project area, lack of recorded ethnographic villages in or near the Project area, and substantial historic-period use of the Project area, the potential for buried prehistoric archaeological deposits in the Project area is low. Due to the substantial historic-period improvements conducted in the Project area, the potential for buried, historic-period archaeological deposits in the Project area is moderate. A summary of identified resources follows.

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. In addition, there 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.

During the 2016 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.

This page is intentionally blank

Chapter 3 – Section 3-3 Recreation and Interpretation



3.3.1 Demographics

3.3.1.1 Population Trends

Growth Projections

The California Department of Finance has prepared long-range population growth projections that show the San Francisco Bay Area growing over the 50 years between 2010 to 2060 by 1.8 million new residents. This population growth is anticipated to be led by Contra Costa County, which will gain about 533,000 new residents. With another 162,000 in the more built-out Alameda County, the District service area 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 one-half million people to the District's service area 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 anticipated to be a permanent condition, 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 Project 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, 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 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). Most of this population is between 18 and 64 years of age.

District Service Area

The District strives to provide a balanced system of regional parks, trails and services for approximately 2.7 million residents in Alameda and Contra Costa Counties. 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 with a population of approximately 948,981 or 35 percent of the total District population.

Approximately 2,321 people live within one-half-mile of the Project area and would have opportunities to access this site by hiking, bicycling or riding horses on trails that would connect to the Project site. Additionally, District outreach programs include: 1) bus transportation for low-income youth groups, people with disabilities and seniors, which is available through the District's Parks Express bus program; and 2) mobile visitor center and mobile fish exhibit which has served approximately 10,000 children in the District's two-county service area. Moreover, the Project could provide a new environmental education opportunity to the nearby school in Canyon. The Project area is also in proximity to students in the Oakland Unified, Orinda Union and Acalanes Union School Districts. *Refer to Figure 7 - Existing Public Facilities in Project Vicinity* for the distribution of schools in the Project vicinity.

3.3.2 Relevant District Facility and Program Types

3.3.2.1 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, showers and flush toilets. These sites may have electricity.
- “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.

3.3.2.2 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.

3.3.2.3 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 at each camp. There may be individual and group use options at any camp. These sites 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. Backpack camps typically require camp stoves for cooking as most sites do not have fire rings / barbecues.



3.3.2.4 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 District has made great strides over the last 20 years making the District Master Plan regional trail system a reality. This is particularly true for the Skyline National 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 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.

Refer to *Figure 11 - Existing and Proposed Regional Trails and Local Campsites* for the location of major trail systems in the area and campsites in the East Bay Hills in proximity to the Skyline National Recreation Trail, which runs through the Project area.

3.3.3 Recreation Trends and Preferences

3.3.3.1 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 number of participants in camping and other activities offered by the District is anticipated to increase.

3.3.3.2 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 Volcanic Regional 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 that 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.

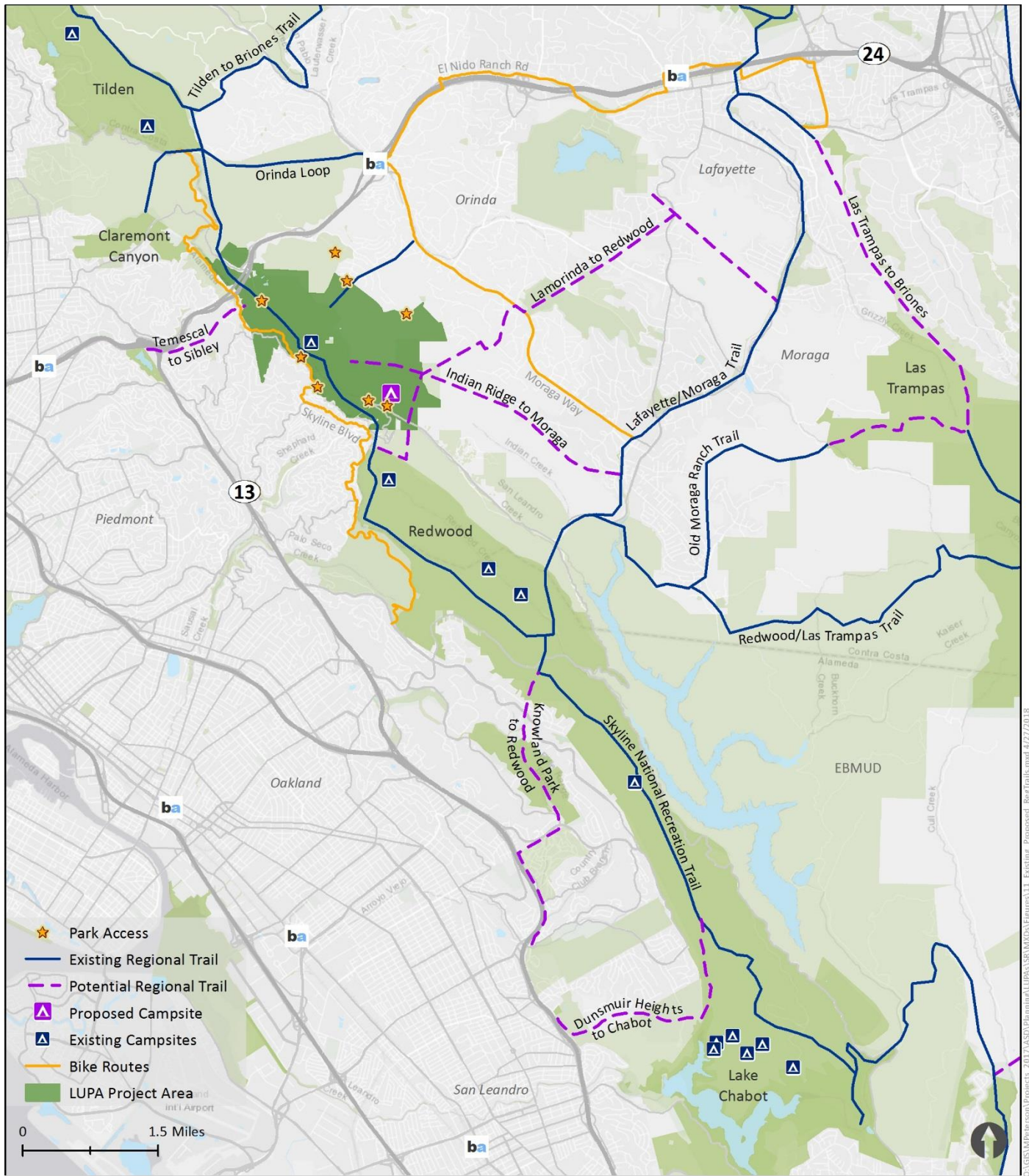


FIGURE 11: EXISTING AND PROPOSED REGIONAL TRAILS AND LOCAL CAMPSITES

3.3.3.3 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. 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.

3.3.3.4 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: 1) the District’s website; 2) direct invitation using contact lists generated during the focus group recruitment process; and 3) 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)

3.3.3.5 District-wide Camping Trends

The existing camping facilities in the District have been subject to increasing demand over the long run with the majority of group campers coming from Berkeley and Oakland according to data from the District’s Comprehensive Annual Financial Reports. These reports provide an overview of the long-term demand trends, measured in terms of the number of camping reservations made. [Source: EBRPD, Comprehensive Annual Financial Report, FY 12/31/2012]

Group Camps

Organized groups participating in outdoor overnight camping experiences tends 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, 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 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 10 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 multiday 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. As of December 4, 2017, reservations at Sibley Backpack site for the last three years are shown in *Table 3-3 - 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 3-3
Sibley Backpack Camp Visitation Rates¹**

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.

3.3.3.6 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.

3.3.3.7 Interpretive Program Participation

The District’s Recreation and Interpretive 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, Recreation and Interpretive 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.

3.3.4 Existing Access

3.3.4.1 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 - Land Use Plan Amendment Project Area*, *Figure 3 - Land Use Plan Amendment Project Overview*, and *Figure 11 - 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

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 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.

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, to be known as East Staging Area (formerly 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.

3.3.4.2 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. Skyline Boulevard and Pinehurst Road are fairly 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 to *Figure 11 - Existing and Proposed Regional Trails and Local Campsites* for the location of major non-motorized routes connecting to the Project area.

3.3.4.3 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 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 service 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 on the 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 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.

Refer to *Figure 11 - Existing and Proposed Regional Trails and Local Campsites* for the location of the closest BART station.

3.3.5 Existing Recreation 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.

3.3.5.1 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, and a backpack campsite located approximately 0.2 miles from the main staging area. In addition, at the base of the Preserve's quarry pits are several stone labyrinths.

Refer to *Section 3.3.6.3 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.

Recreation/Staging Unit Designation

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.

3.3.5.2 Western Hills Sub-area

Parking

The Western Hills sub-area will include a 0.5-acre staging area known as the Red-tailed Hawk Staging Area. This site is being developed as a visitor service amenity intended to provide a staging area for accessing trails located within the conservation easement area in accordance with provisions of the Wilder residential development agreement. It will include parking for 19 cars and two two-horse trailers, a restroom and informal picnic site.

Recreation Facilities

Refer to *Section 3.3.6.3 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.

Recreation/Staging Unit Designation

The 0.5-acre Red-tailed Hawk Staging Area meets the criteria of a Recreation/Staging Unit.

3.2.5.3 McCosker Sub-area

Parking and Park Operations

The Eastport 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 3.3.6.3 Local Trails* for a discussion of existing trails and trail uses in the McCosker sub-area.

Recreation/Staging Unit Designation

The McCosker sub-area contains approximately five acres of previously developed and altered areas that would be designated as recreation areas consistent with the criteria of a Recreation/Staging Unit.

3.3.6 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 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.

3.3.6.1 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 National Historic 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 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.

3.3.6.2 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.

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 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 for much of the route.

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.

3.3.6.3 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 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. None of these trails are currently open to the public. 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 Park to the Western Hills would 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.

3.3.7 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 Trail, and Alder Nature Trail - Approximately 2.8 miles
- Sibley Regional Preserve – Proposed Fiddleneck Field recreation area to Sibley Backpack Camp via 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 11 - Existing and Proposed Regional Trails and Local Campsites* for the location of campsites in the East Bay Hills in proximity to the Skyline National Recreation Trail, which runs through the Project area.

This page is intentionally blank

Chapter 3 – Section 3-4 Parkland Services



3.4.1 District Presence

Staff from the District's Operations and Public Safety Departments provide for the safety and protection of park visitors and staff, and the 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 Trail Development Group staff offer programs directed at public safety and trail development and maintenance, respectively.

3.4.1.1 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 will 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 Operations - Staff Responsibilities

Basic District operational and maintenance services generally consist of: opening and closing staging and trailhead gates at opening and closing (park curfew hours extend from 10 p.m. to 5 a.m. daily); 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 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 signs, 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.

3.4.1.2 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.

3.4.1.3 Protection and Emergency Response 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 Public Safety 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. The Police Department also deploys volunteers (Volunteer Trail Safety Patrol Program) into the parks to assist park visitors and encourage safe use of trails.

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. For example, a search for a missing elderly female who had become separated from her husband while hiking trails in Robert Sibley Volcanic Regional Preserve required a District police, fire and park staff response along with several outside agencies, including the Moraga Orinda Fire Department, the Oakland Fire Department, and Alameda County Search and Rescue.

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 growing sites.

District records from the Emergency Communications Center (Dispatch) show that from 2013 to 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 3-4 – 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 3-4
2013 –March 2017 Incident History**

PRESERVE	INCIDENT			Total Calls by Area
	Law	Citation	Fire	
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

3.4.1.4 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 parks staff that are affected. Level 1 restrictions relating to camping and interpretive programs, is a “warning” level where campfires and barbecues in developed areas would still be allowed. 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. This Agreement sets forth plans for coordinated responses to emergencies and service requests in defined areas of District and the Moraga-Orinda Fire Protection District, including those designated as Mutual Response Areas (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 warrants a fire, Emergency Medical Service (EMS) or rescue response believed to be occurring within MOFD boundaries at the parklands listed above. And likewise, MOFD will immediately notify the District Communications Center of incidents that warrants 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.

City of Oakland

The City of Oakland also 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.

Fire Hazard Reduction

The Project spans the wildland interface area of the East Bay Hills connecting the East Bay to the Lamorinda area. As such, this area is subject to increased ignition sources and increased potential for damage to homes and human populations. Thus, fire hazard reduction is a core component of the LUPAs ongoing programs. These include the programs outlined in the *East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan* and the *Long Term Management Plan for the Western Hills Open Space* incorporated by reference in this LUPA, and ongoing livestock grazing program discussed in *Section - 3.2.8. - Ongoing Programs*.

3.4.1.5 Volunteer Programs

Volunteer Trail Safety Patrol

The Volunteer Trail Safety Patrol (VTSP) supports the Park staff. 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.



3.4.2 District Facilities and Infrastructure

3.4.2.1 Park Office, Service Yard and Residences

Park Office and Service Yard

This park unit is served by park staff that work out of a park office located in Robert Sibley Volcanic Regional Preserve at the terminus of Old Tunnel Road. Crews from the Tilden Corporation Yard provide specialized services on an as-needed basis.

Park Residences

There are currently three residences in this parkland unit. There are two park residences in the Preserve Sub-area. One residence is associated with the Preserve entrance located at 6800 Skyline Boulevard immediately south of the Grizzly Peak Boulevard intersection. A second residence is located immediately adjacent to the park staff office off Fish Ranch Road at the terminus of Old Tunnel Road (111 Old Tunnel Road). The Old Tunnel Road park security residence/staff office was formerly known as the Conley House. The single-family residence located in the McCosker sub-area serves as a third potential site for an added staff presence within the Project area. There are no existing, or proposed, security residences identified in the Long Term Management Plan for the Western Hills Sub-area.

3.4.2.2 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 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 recycling 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 are provided to the Project area through a District contract with the Central Contra Costa Solid Waste Authority (CCCSWA), doing business as RecycleSmart. Solid waste collection and recycling services are 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, for 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 take away when full. To monitor solid waste in District parklands park staff coordinates all trash, compost and recycling collection volumes and submits 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, 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 park users will have the opportunity to recycle and compost.

3.4.2.3 On-site Infrastructure

Preserve Sub-area

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 required 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, Phone and Cable

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

Water

The Red-tailed Hawk Staging Area 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 south 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.

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. Park Operations staff would add this site to the sites under contract with Republic Services for the collection, transfer, and disposal of garbage, recycling, and organics. They would also provide multiple animal-proof cans and informational signage to encourage responsible waste management, including composting and recycling.

Gas and Electrical, Phone and Cable

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

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.

A spring in the northern hillside area within the McCosker sub-area supplies water to the residence. Spring water is collected in a 4,500-gallon storage tank near the spring, and is gravity fed to a 10,000-gallon storage tank near the residence. The spring water is treated with chlorine at an on-site treatment system with an 85-gallon contact tank 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 tested in 2012 and found to be in proper working order.

Gas and Electrical, Phone and Cable

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 company utility lines also use these power poles.

There is no gas service to the McCosker Sub-area. Propane gas tanks meet the heating and cooking needs.

3.4.2.4 Obligations - Maintenance Easements, Agreements, and Licenses

The Project area contains several maintenance easements, agreements, and licenses that run with the property. These are described below by Project sub-area and illustrated in *Figure 12 - Easements, Agreements, and Licenses* in the Project Area.

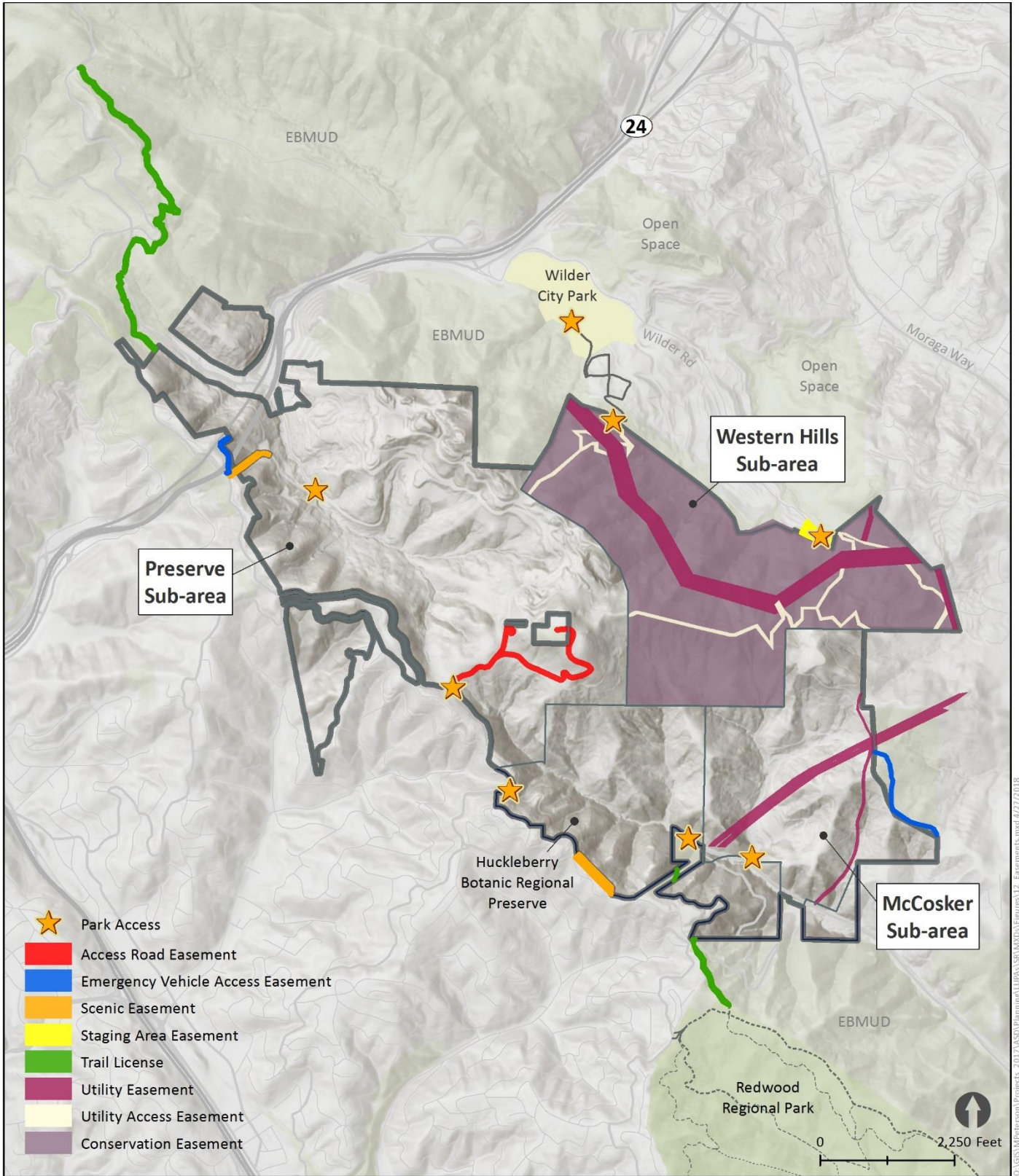


FIGURE 12: EASEMENTS, AGREEMENTS AND LICENSES

Preserve Sub-area

Round Top Reservoir

Round Top Reservoir is a 397,000-gallon, redwood water storage tank with an overflow elevation of 1,551 feet. The reservoir is located on an inholding within Preserve Sub-area east of Skyline Boulevard on EBMUD property. This reservoir was constructed in 1973 and is maintained by EBMUD solely for fire suppression purposes. Agreements between the District and EBMUD allow for access through Robert Sibley Volcanic Regional Preserve from the Sibley Main Staging Area.

Sibley Round Top

There are four inholding parcels located at the summit of Round Top on an inholding within the Preserve Sub-area. Two of the parcels (APN 273-180-005 and 273-190-001) totaling 4.4 acres are owned by EBMUD and one of those parcels is leased to private communication companies. The third, a 1.07-acre parcel (APN 273-180-009) owned by Skyline Partners, also contains communication facilities. A fourth 0.53-acre parcel (APN 273-180-007) is sandwiched between the EBMUD and Skyline parcels. Agreements between the District and these entities allow for their access through Robert Sibley Volcanic Regional Preserve from the Sibley Staging Area along the Round Top Trail. Electrical and phone service to the communication stations on Round Top is provided via underground lines within existing easements along the paved road leading to the summit.

Historic Old Tunnel Road

Historic Old Tunnel Road, a former State Highway, once carried traffic to the 1903 Kennedy Tunnel before the Caldecott Tunnel and Highway 24 were constructed. Today, the Robert Sibley Volcanic Regional Preserve maintenance yard is situated at its terminus. When the State of California relinquished Old Tunnel Road to Contra Costa County, it was a public right-of-way recorded in book 433 at page 447, Official Records of Contra Costa County. While, the County terminated their maintenance of the road in 1985, the public property rights conveyed in the official County records remain in force. Today the portion of the road that crosses through Robert Sibley Volcanic Regional Preserve is maintained by the District [Source: Markert. R/P – Old Tunnel Road W.O. 1733. October 10, 1985].

EBMUD License

The 31-mile East Bay Skyline National Recreation Trail (also known as the “Skyline Trail”, “Bay Area Ridge Trail,” or the “Ridge 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 the Project area and includes segments that run through EBMUD watershed land, which the District has a license to operate.

Western Hills Sub-area

Trail Connectors

The City of Orinda, Wilder Homeowners Association and/or GHAD have the right and authority to maintain and repair the trail connections to the Western Hills Sub-area from Wilder Park as designated in the District-OGLLC-City Agreements.

McCosker Sub-area

Shell Oil Company Pipeline

An abandoned Shell Oil Company pipeline extends southeastward to northwestward from Pinehurst Road through APN 257-010-005 parallel with the PG&E easement.

EBMUD Utility Easements

A non-exclusive access easement was conveyed to EBMUD along an existing fire road on the northeast boundary of the McCosker parcel. The District received a reciprocal easement on EBMUD's portion of the McCosker parcel along an existing service road that is located immediately east of the McCosker parcel boundary.

Pinehurst Road Right of Way

The right-of-way along Pinehurst road in the Project vicinity is based on the 1975 Caltrans Right of Way Record Map R-127.1 (R127003) which shows a 50-foot right-of-way. Absent any other evidence, the County of Contra Costa, has determined that centering the right-of-way on the physical road is acceptable (personnel communication Jim Stein, Contra Costa County Surveyor, Engineering Services Division).

Pacific Gas and Electric (PG&E) 115kV Power Lines and Access Roads and Easements

PG&E high voltage transmission lines cross all three sub-areas.

One PG&E high voltage transmission line crosses the Preserve Sub-area north of the park entrance from east to west along Grizzly Peak Boulevard after traversing the Western Hills Open Space.

The Western Hills Sub-area contains four sets of parallel 115kV power lines that cross the space east-to-west suspended from larger towers as described below:

- The 115 kV Moraga-Sobrante Line, which runs roughly north-south along and just within the eastern edge of the Wilder Valley project site
- The 230 kV Vaca Dixon-Moraga Line, which runs roughly north-south along across the central eastern edge of the Project site
- The 115 kV Moraga-Claremont Line, which runs roughly east-west across the site approximately one-quarter mile south of SR24 - This power line was relocated away from the community sports fields and residential development area as part of the Wilder residential development project - The relocated line is approximately 8,500 feet long and includes approximately 300 new steel lattice towers in ten sets of three. Typical tower heights vary from 90 to 120 feet, and typical spans between towers are approximately 300 to 1,500 feet
- The 115 kV Moraga-Lakewood Line crosses the narrow southern portion in a roughly east-western direction.

Two sets of similar PG&E high voltage transmission lines and towers traverse the McCosker sub-area from southwest to northwest.

PG&E retains access easements to maintain this utility infrastructure. PG&E has the right, responsibility, and authority to maintain and repair the three sets of parallel 115kV power lines,

access roads, and easement owned and maintained by PG&E Powerline that traverse the Western Hills Sub-area per WRA, Inc. Long-term Management Plan for the Montanera Project, Western Hills Open Space. June 27, 2006, as well as the Preserve and McCosker sub-areas. PG&E is also responsible for vegetation management under the power lines.

This page is intentionally blank

Chapter 4
LAND USE PLAN AMENDMENT RECOMMENDATIONS



This page is intentionally blank

Chapter 4 Section 4-1

Overview of Land Use Plan Amendment Recommendations



4.1.1 Parkland Designations

This chapter presents a vision for the future of Robert Sibley Regional Preserve that balances resource conservation and recreation opportunities with a focus on creek restoration and recreation development at the McCosker Sub-area. The LUPA recommendations take into account:

- Master Plan goals of balancing conservation with recreation and interpretive activities including opportunities to expand and enhance trail connectivity
- The designations of the parkland area as a Regional Preserve with Natural and Recreation/Staging Area Units, as well as Special Protection and Special Management Areas
- Considerations for each sub-area that include:
 - Preserve sub-area - Additional parking and infrastructure needs
 - Western Hill sub-area – Conservation easement
 - McCosker sub-area - 1) Disturbed areas with opportunities for recreation development; 2) degraded creek system with opportunities to enhance habitat; 3) limited site access; 4) limited water availability – no connections to City water systems; 5) limited sewage management capabilities - no connections to City sewage systems; and 6) community preferences for creek restoration and limited recreation facility development.

4.1.1.1 Designation of Parkland Type

The Project lies within the District’s jurisdiction, 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.

4.1.1.2 Designation of Parkland Planning Units

The LUPA establishes planning units to describe variations in parkland characteristics. These planning units are described in more detail below.

Natural Units

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, riding, bicycling, plant and wildlife study, educational pursuits and contemplation) prevail. Natural units may contain a variety of vegetation and habitats, as well as extremely 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 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.

The LUPA supports this policy by maintaining most of the Project area (1,301.6 acres or 99 percent) as cohesive open space designated as Natural Units.

Special Protection Features and Special Management Features

Special Protection 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

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.

The LUPA supports these policies through ongoing land management practices directed at the management of SPFs and SMFs from the 1985 LUDP including:

- A geologic preserve area managed such that quarry faces are not destroyed or defaced

- A dedicated wildlife habitat preservation area
- A 100-foot protective corridor designation for the Caldera Dome and San Leandro Creek Riparian Corridors
- Protection of habitat for Alameda striped racer (Alameda whipsnake).

This LUPA also:

- Recognizes the original Sibley / Round Top acreage and establishment of East Bay Regional Park District as a historic event
- Incorporates recommendations from the 2010 Wildfire Hazard Reduction and Resource Management Plan for management of eucalyptus and Monterey pine forests to reduce fuel loads
- Recommends that the restored Alder Creek and Leatherwood Creek channels and riparian habitat be designated as SPFs to be managed to benefit habitat and ecosystem functions.

Refer to *Figure 13 - Special Protection Features* for location of existing and proposed SPFs, study areas and historic acreages and *Appendix E - Fuels Management Areas* for SMFs features associated with the Fuels Management Plan. The entire Project area is in an area designated as habitat for Alameda striped racer (Alameda whipsnake) and thus, is not called out as a specific SPF in *Figure 13 - Special Protection Features*.

Recreation/Staging Units

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, as described in the following 2013 District Master Plan policy 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.

Except for low intensity uses associated with trails and trail activities in Natural Units, proposed recreation facilities and activities within the Project Area would be clustered and located in Recreation/Staging Units. Proposed recreation facilities and activities located within Recreation/Staging Units are described in the following sub-sections and identified in *Figure 3 - Land Use Plan Amendment Project Overview*.

4.1.2 Overview of Land Use Plan Amendment Recommendations

Plan recommendations are set forth as two specific types of actions: 1) ongoing programs; and 2) future project components. Ongoing programs are associated with current resource management programs and parkland operations activities and agreements described in *Chapter 3 - Existing Conditions*. Future project components are focused on one-time, capital expenditures directed at: 1) enhancing ecosystem functions; 2) creating safe and positive visitor experiences; and 3)

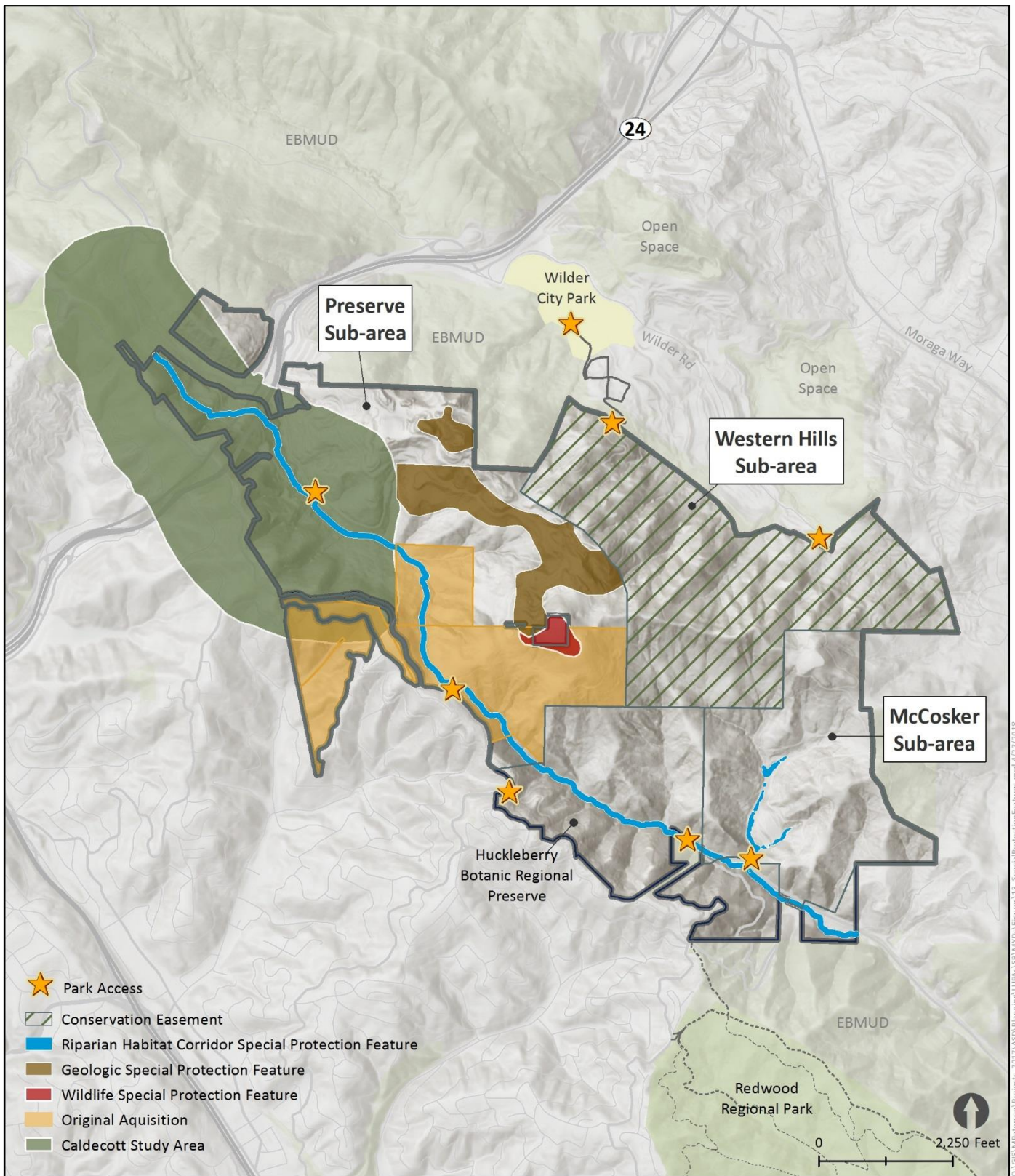


FIGURE 13: SPECIAL PROTECTION FEATURES

providing a safe and efficient environment for performing park staff functions. Existing conditions, as well as anticipated changes in parkland environment and use patterns described in *Section 3.2.4.1 – Climate*, *Section 3.3.1 – Demographics*, and *Section 3.3.3 - Recreation Trends and Preferences*, respectively, have helped to formulate the LUPA recommendations.

4.1.2.1 Ongoing Programs

Resource management programs and parkland operations activities and agreements currently in place that would continue with the adoption of the LUPA are considered as part of the baseline conditions. These include: routine maintenance and operations tasks, resource management programs, and current recreation uses and programs.

Resource Management Programs

To capture evolving circumstances, and incorporate gains in scientific knowledge regarding the natural resources, an adaptive management plan is employed for managing parkland resources with biological resource management programs having been developed to benefit overall biodiversity of the Project Area. As described in *Section 3.2.8 – Ongoing Land Management Programs*, management tools include grazing, prescribed burns, integrated pest management programs, and site restoration work. The primary objectives of these programs are to: 1) maintain and improve habitat conditions for resident plants and wildlife to promote biodiversity and protect listed species; and 2) manage the fuel load of flammable vegetation to lessen wildfire hazard as set forth in the Project purpose, objectives and strategies in *Section 2.4*.

Taking an adaptive management approach, and documenting the results through successive monitoring periods, the District can:

- Tailor future programs to achieve desired outcomes in conformance with the environmental regulatory agencies
- Enhance habitat connectivity to benefit native fish, wildlife, and plant species
- Increase overall watershed functions and climate resiliency through restoration activities
- Enhance forest health through fuel reduction, thinning and other managed fuel treatments where fires have been suppressed and fuel loads are high
- Add to the overall tree canopy to benefit the site water infrastructure through rainfall interception, and reduced water pollution, flood risk, and sediment transport where prior land use actions have diminished former riparian habitat
- Reduce invasive weed seed and pathogen spread
- Incorporate the latest climate science principals into conservation planning
- Engage the community in restoration and monitoring activities to give the public better understanding of: 1) the natural resource communities baseline conditions and ecosystem functions, as well as climate vulnerabilities; and 2) scientific principles for addressing Project area biological resource management programs as they evolve.

The ability to integrate adaptive management approaches based on sound science allows the District to optimize the benefits of ongoing resource management programs, while minimizing the drawbacks of everchanging site conditions.

Parkland Operations

Maintenance and operations actions are directed at providing for visitor safety, creating a safe work environment for staff, and protecting/enhancing cultural and natural resources as described

in *Section 3.4.1.1 District Operations Roles and Responsibilities*, and would continue into the future and expand to cover the Western Hills sub-area when conveyed to the District as dictated by the regulatory agency-approved Long Term Management Plan.

Public Safety and Police

Park visitors’ safety is one of the primary functions of the District’s police officers, and fire department staff. District staff oversight is augmented by the Moraga-Orinda Fire Protection District. These services, as described in *Section 3.4.1*, would continue into the future and cover the entire Project area, including the Western Hills sub-area when conveyed to the District.

Interpretive and Recreation Programs

Ongoing interpretive and recreation programs offered by the District’s Interpretive and Recreation Services Department would continue 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 as described in *Section 3.4.1.2* with future programs, exhibits and brochures providing additional opportunities to further enrich the visitor experience.

4.1.2.2 Proposed Project Components

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. *Table 1-1* provides a comparative summary of these proposed actions with existing conditions.

Proposed actions for these components are described in detail in the following sections and summarized by the location where they would occur in *Table 4-1 - Proposed Actions by Location*. For the location of these activities refer to figures in *Chapter 4 - Land Use Plan Amendment Recommendations*.

Table 4-1 - Proposed Actions by Location

PROPOSED ACTION	PRESERVE SUB-AREA	WESTERN HILLS OPEN SPACE	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	✓		✓	

Chapter 4 - Section 4-2

Preserve Sub-area

Public Access, Infrastructure and Recreation



4.2.1 Overview of Preserve Sub-area Improvements

Proposed recreation and public access improvements in the Preserve sub-area include: 1) improvements to the existing Sibley Main Staging Area, 2) improvements to Old Tunnel Road, 3) improvements to utility infrastructure; and 4) construction of 0.3 miles of new narrow trails. Refer to *Figure 14 - Proposed Actions for Preserve sub-area* for location of the proposed improvements. Existing and proposed trails in the Preserve sub-area are described in *Chapter 4 - Section 4-7*.

4.2.2 Public Access Improvements

4.2.2.1 Improvements to 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. The one, two-horse trailer would be retained with the proposed parking modifications. On-street parking would be restricted to the extent that it would afford outbound vehicles to clearly see approaching vehicles on Skyline Boulevard. Electric vehicle recharging units and bike racks could be added as demand dictates. Refer to *Figure 15 - Proposed Parking Lot Layout for Sibley Main Staging Area* for the conceptual parking layout. Wayfinding signage denoting the presence of a staging area driveway or access point would be placed at a distance that affords approaching vehicles time to slow or stop safely to the north and south of the areas on Skyline Boulevard.

4.2.2.2 Improvements to 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 bike racks as demand dictates. An access gate near the Old Tunnel Road entry would be secured during park closure hours. Refer to *Figure 16 - Proposed Parking Lot Layout for Old Tunnel Road* for the conceptual parking layout. Wayfinding signage denoting the presence of a staging area driveway or access point would be placed at a distance that affords approaching vehicles time to slow or stop safely on Fish Ranch Road before turning onto Old Fish Ranch Road.

4.2.3 Recreation Facility Development

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

4.2.4 Improvements to Utility Infrastructure

Water Service

Project activities in the Preserve sub-area would include installation of a 1,000-gallon, prefabricated 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.

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.

Standard features would 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.

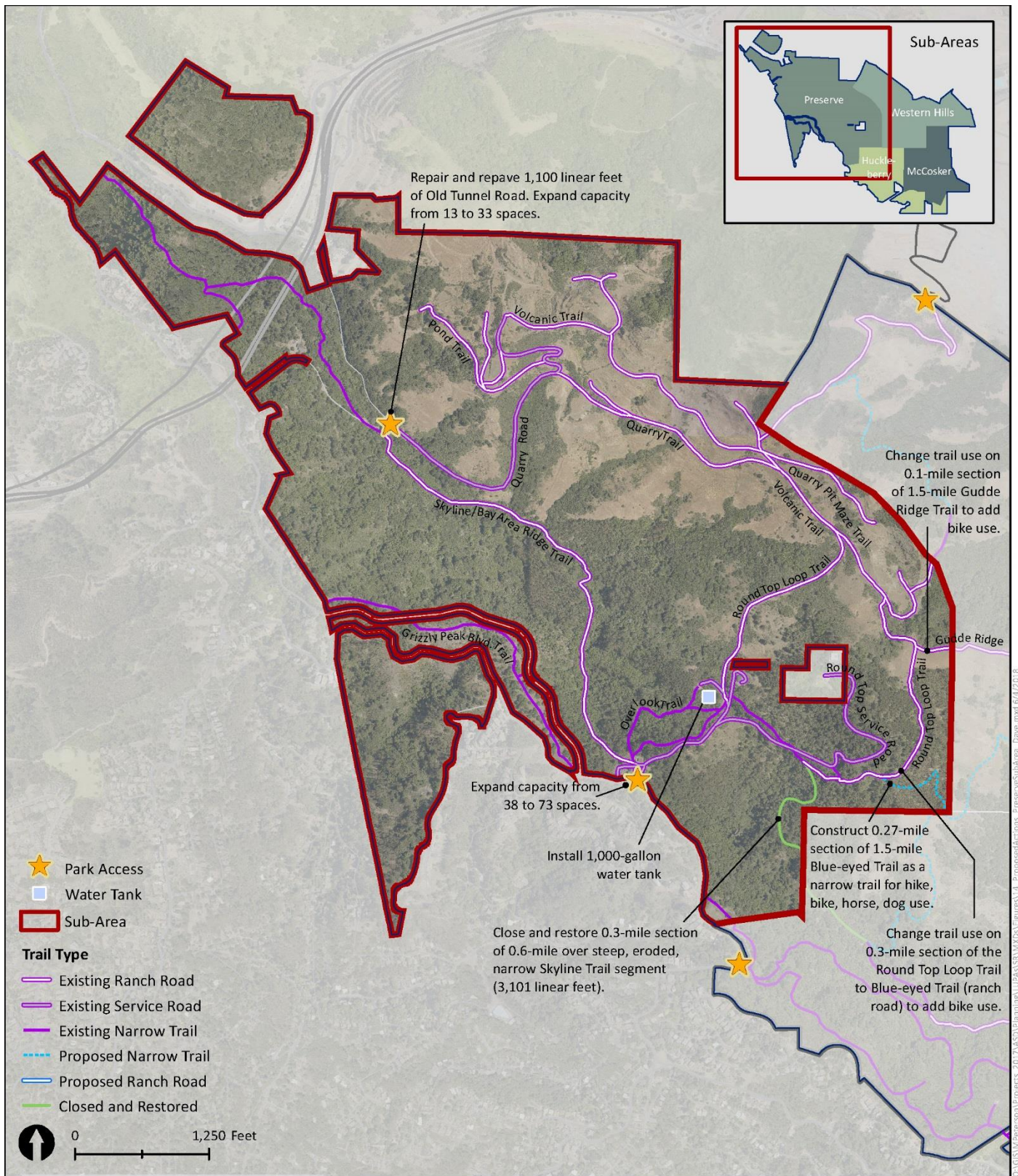


FIGURE 14: PROPOSED ACTIONS FOR PRESERVE SUB-AREA

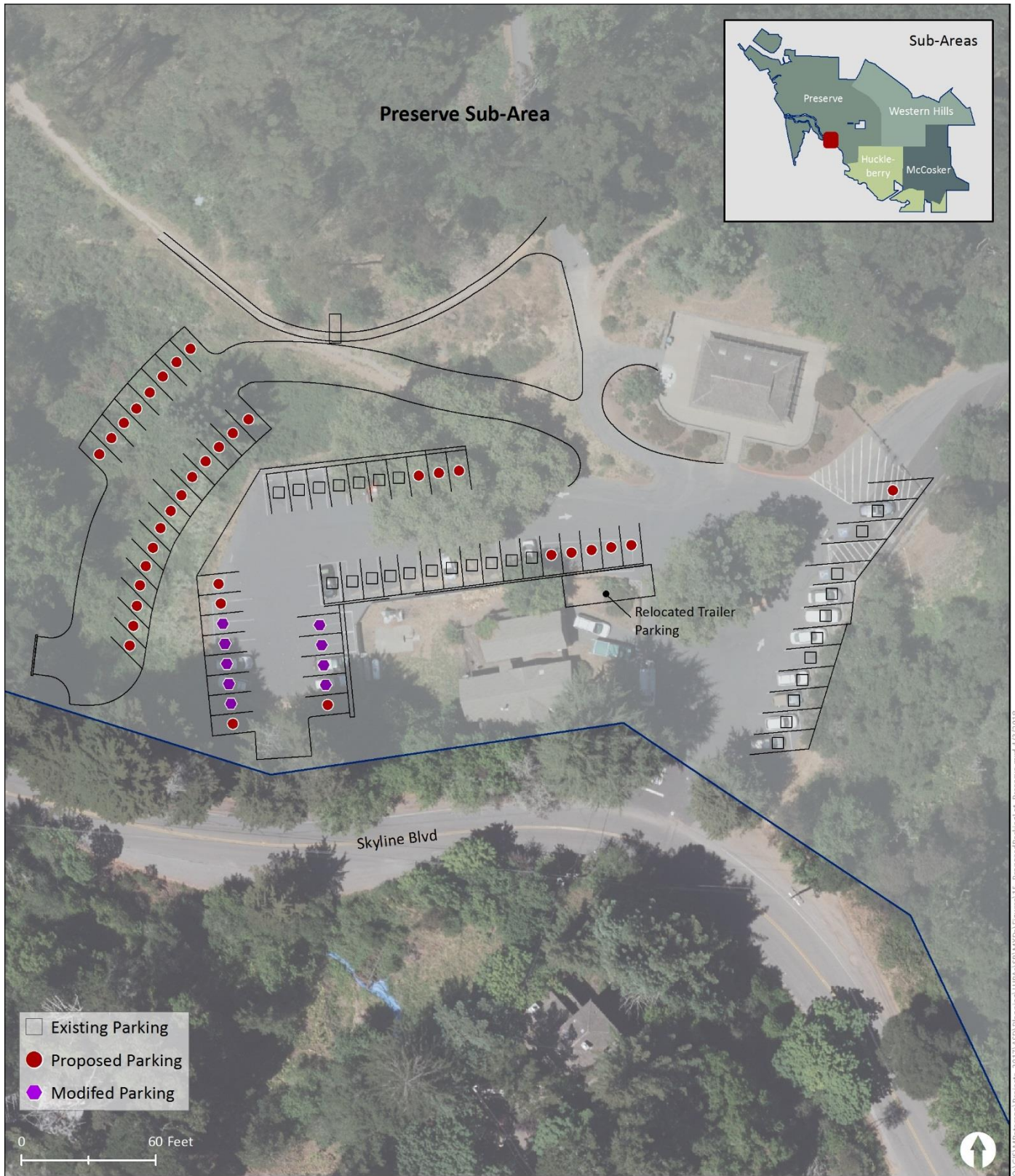


FIGURE 15: PROPOSED PARKING LAYOUT, MAIN SIBLEY STAGING AREA. PRESERVE SUB-AREA

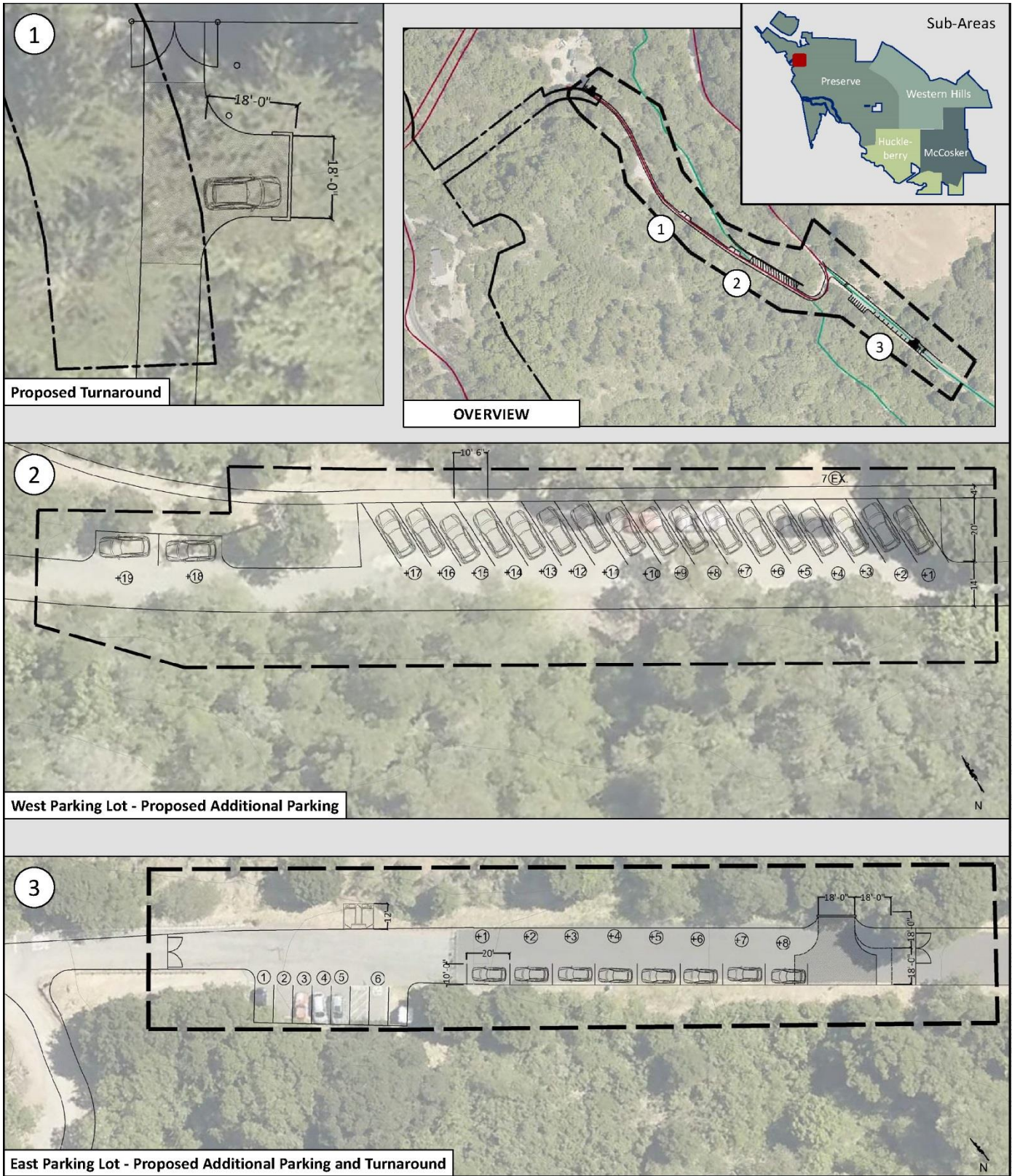


FIGURE 16: PROPOSED PARKING LAYOUT, OLD TUNNEL ROAD. PRESERVE SUB-AREA

This page is intentionally blank

Chapter 4 - Section 4-3 Western Hills Sub-area Property Conveyance and Public Access



4.3.1 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 OGLLC, Property Owner*, 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 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 sites, 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).

4.3.2.1 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, as described in *Section 5-7*.

4.3.2.2 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 woodlands, 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.

4.3.2 Public Access Improvements

As the Western Hills sub-area is: 1) largely contained within an established conservation easement extending eastward from the ridgelines of the East Bay Hills to the western boundary of the Wilder residential development; and 2) the staging area has also been established through prior development plans analyzed in the *2004 Second Supplemental EIR for the Montanera Project*, the proposed actions in the Western Hills sub-area would be limited to opening existing facilities (staging area and trails) for public use once the land is conveyed to the District. This would include installation of wayfinding signs at both Wilder Park and the Red-tailed Hawk Staging Area directing visitors to Robert Sibley Volcanic Regional Preserve and regulatory signs that would inform visitors of the rules and courtesies to be observed when visiting District and City lands. The two existing access points are located in the City of Orinda outside of the conservation easement.

Trail development proposed beyond that which is currently described in the conservation easement is described in *Chapter 4 - Section 4-7*.

Refer to *Figure 17 - Proposed Actions for Western Hills Sub-area* for location of facilities located within the Western Hills sub-area.

4.2.3 Recreation Facility Development

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

4.2.4 Improvements to Utility Infrastructure

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 as part of the construction of the staging area by OGLLC, developer for the Wilder residential development.

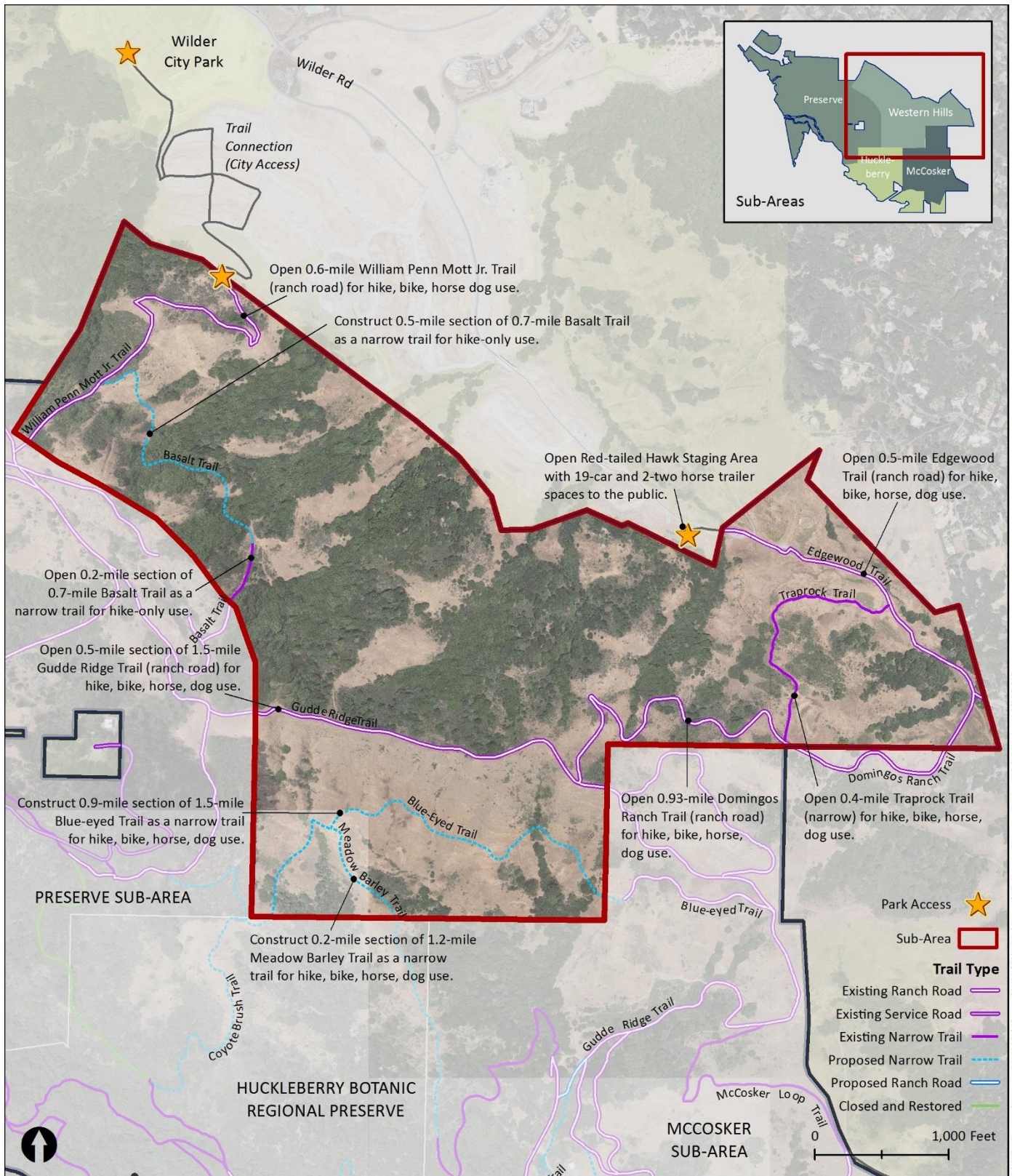


FIGURE 17: PROPOSED ACTIONS FOR WESTERN HILLS SUB-AREA

This page is intentionally blank

Chapter 4 - Section 4-4 McCosker Sub-area Public Access, Infrastructure and Recreation



4.4.1 Overview of McCosker Sub-area Improvements

Proposed recreation and public access improvements in the McCosker sub-area include: 1) improvements to the existing day use staging area, 2) improvements to the existing roadway system, 3) bridge installation, 4) recreation facility development, 5) improvements to utility infrastructure, and 6) 1.3 miles of new narrow trails. Refer to *Figure 18 - Proposed Actions for McCosker Sub-area*, *Figure 19 - Proposed Actions for McCosker Sub-area-Creek Restoration and Recreation Development Area*, *Figure 20 - Creek Restoration and Recreation Development Area Concept Plan*, *Figure 21a - Creek Restoration and Recreation Development Area Cross-section A-A*, and *Figure 21b - Creek Restoration and Recreation Development Area Cross-section B-B and C-C* for location of proposed improvements. A description of existing and proposed trails in the McCosker sub-area are described in *Chapter 4 - Section 4-7*.

4.4.2 Public Access Improvements

4.4.2.1 Eastport (formerly Wilcox) Staging Area

The main entrance and gated parking area at Pinehurst Road would remain. Minimal grading would add up to five parking spaces and direct drainage to a stormwater treatment feature, while restricting on-street parking to the extent that it would afford outbound vehicles to clearly see approaching vehicles on Pinehurst Road. Wayfinding signage denoting the presence of a staging area driveway or access point would be placed at a distance that affords approaching vehicles time to slow or stop safely to the north and south of the areas on Pinehurst Road to provide adequate notice for vehicles traveling at the prevailing speeds (45 miles per hour).

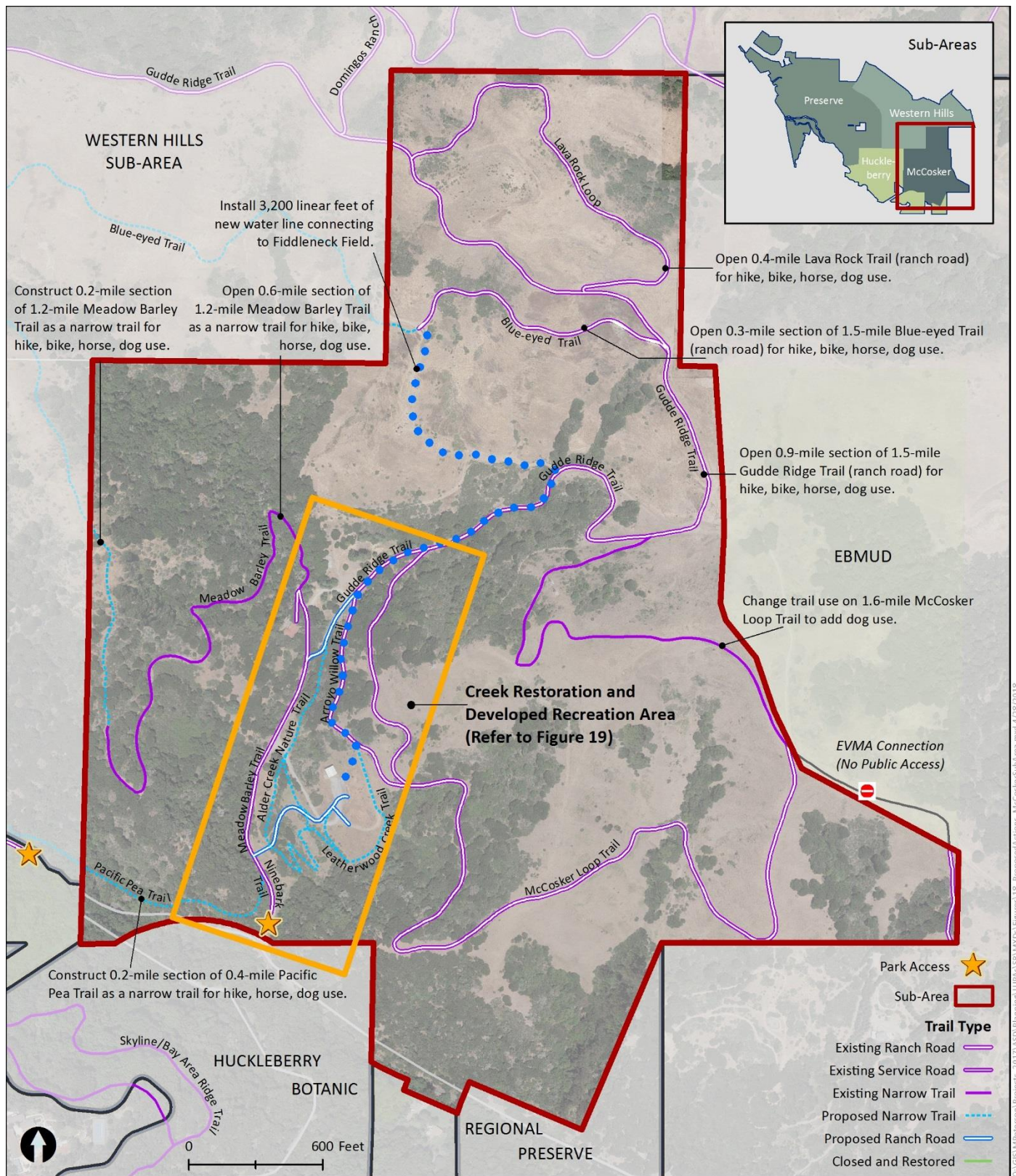


FIGURE 18: PROPOSED ACTIONS FOR MCCOSKER SUB-AREA

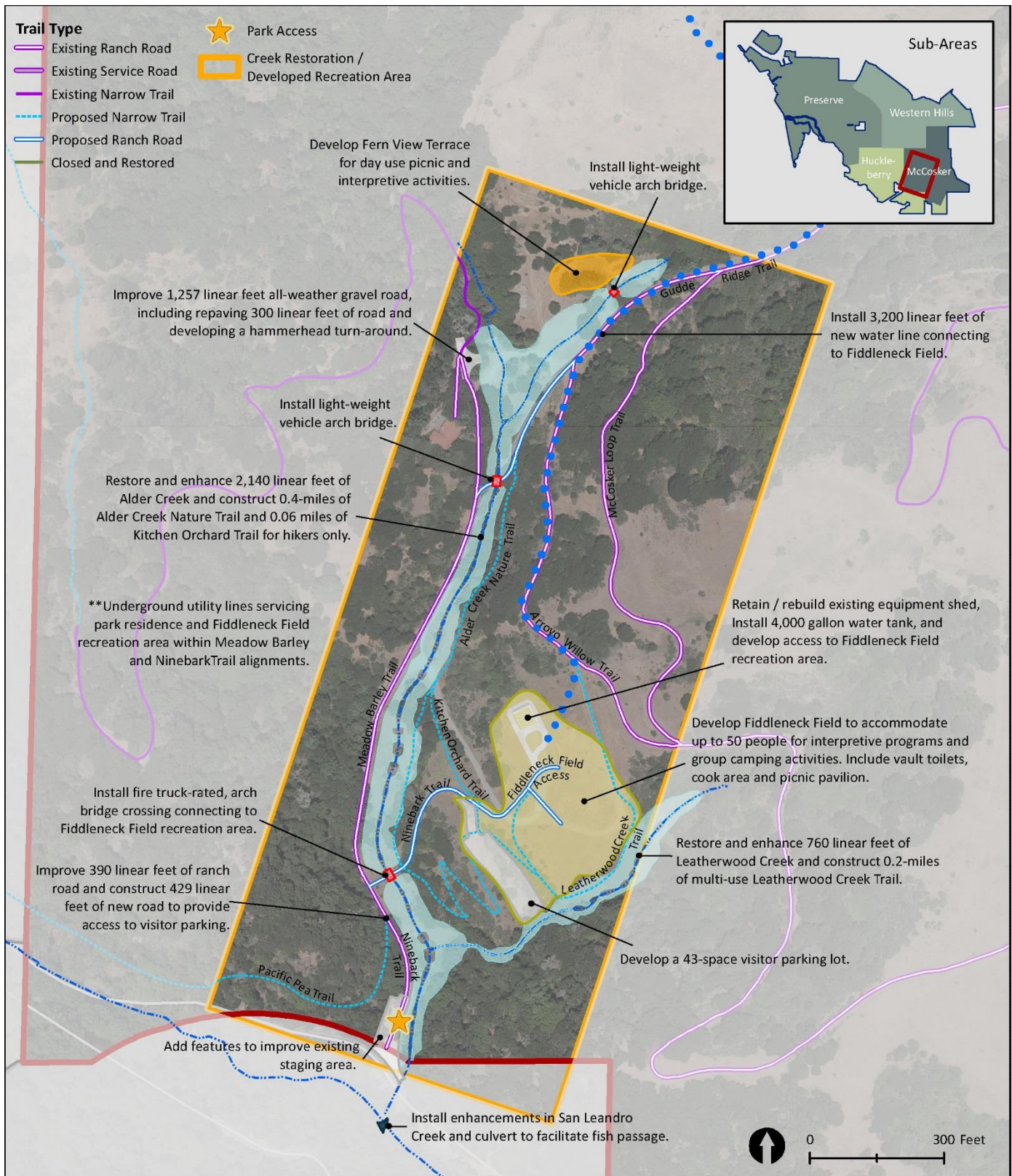


FIGURE 19: PROPOSED ACTIONS FOR MCCOSKER SUB-AREA: CREEK RESTORATION AND DEVELOPED RECREATION AREA

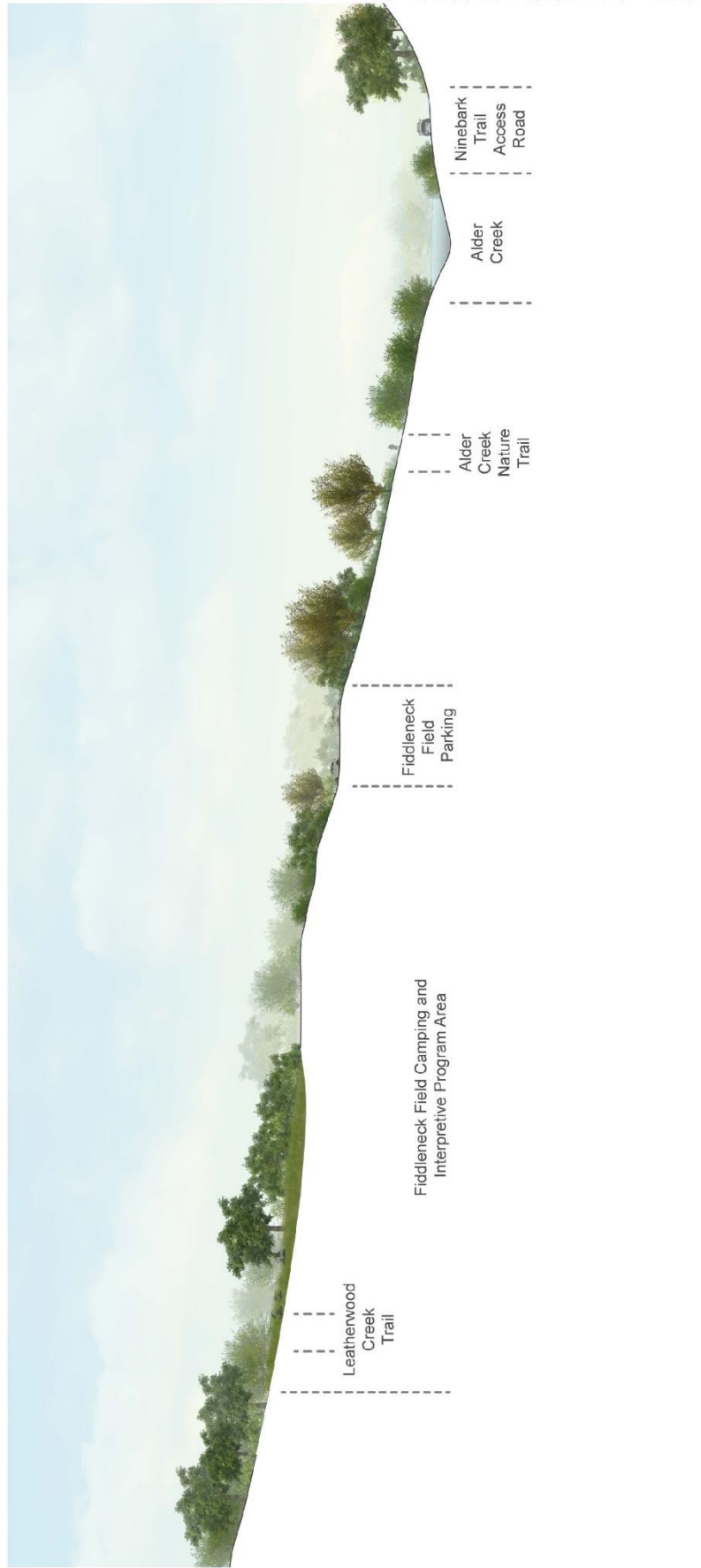


FIGURE 21A: MCCOSKER SUB-AREA CREEK RESTORATION AND RECREATION DEVELOPMENT AREA - SECTION A-A

The staging area would be renamed *Eastport Station Staging Area* to more clearly reflect the history of the site. A new entry sign with the new name would be installed to reflect this name change. 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, perimeter fencing, and appropriate signage. The access gate would be secured during park curfew hours extending from 10:00 p.m. to 5:00 a.m. daily.

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 4.4.3.1- Fiddleneck Field Recreation Facility Improvements* below for more details.

4.4.2.2 Roadway Improvements

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.

Ninebark Trail

The Ninebark Trail would provide a connection between the Eastport 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.

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 a 400-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. 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. The 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.

4.4.2.3 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. 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 area described below.

Ninebark Vehicle Bridge to Fiddleneck Field Developed Recreation Area

The planned, fire truck-rated, public vehicle bridge crossing would connect the Eastport Staging Area to Fiddleneck Field Recreation Area for public and maintenance vehicles, as well as ADA compliant trail use. This crossing would have a minimum HS20 load rating (36 ton) (California Vehicle Code) and minimum 15-foot vertical clearance. The bridge would fully span the Alder Creek channel. This bridge would also serve as a utility crossing for utility 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, non-motorized recreational trail 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 fully span the eastern branch of the Alder Creek channel.

Alder Creek Nature Trail Bridge

The Alder Creek Bridge would provide a connection between the Meadow Barley Trail, Gudde Ridge Trail, and the Alder Creek Nature Trail. This bridge would have a minimum 36-ton load capability (HS20) (California Vehicle Code), and minimum 15-foot vertical clearance to accommodate service vehicles and public, non-motorized recreational trail use. This bridge would fully span the Alder Creek channel and would offer opportunities for trail users to view the restoration project from above.

4.4.3 Recreation Facility Development

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. These areas and facility types would meet the criteria of a Recreation/Staging Unit.

4.4.3.1 Fiddleneck Field Recreation 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. Reservations would be administered by District park staff. Maximum destination capacity (camping and interpretive Program uses) would be 50 visitors.

A 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.

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 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, the Eastport Staging Area, 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 meadow area from the parking area and focus views toward natural features in the surrounding environment. These 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.

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 will 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 3.3.6 - Existing Trail System* and illustrated in *Figure 12 - 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 require approximately 2.8 acres of grading and fill placement that would come from the creek restoration area, as part of the overall grading for the combined group camp/interpretive destination site.

4.4.3.2 Fern View Terrace Facility Improvements

Recreation Use Area

The 0.3-acre Fern View Terrace would be an informal site for passive day use activities. 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 prior use of historical features. Exhibits would include, but not be limited to, features associated with a rock crushing operation that was active during the McCosker family's residency.

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 minor grading to define the picnic pads and access routes, while generally retaining the existing terraces within this site.

4.4.4 Infrastructure Improvements

4.4.4.1 Utilities

Utility infrastructure improvements in the McCosker sub-area supporting the Fiddleneck Field recreation area would include: 1) development of a potable water supply; 2) connections to existing electrical and communications services; 3) improvements to manage sewage and trash; and 4) installation of fencing and gates to control site access.

Water Service

Approximately 3,200 linear feet of water lines would be installed extending from a natural spring in the northern portion of the sub-area to a 4,000-gallon water tank in the Fiddleneck Field recreation area to meet visitor needs. Trenches approximately 16 inches wide would be dug to a depth of up to three feet. Installation of the water line would occur in conjunction with the development of the recreation project elements.

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 be installed to provide water to establish plants in the restoration and recreation areas during the dry season. The trail work areas in the upland areas throughout the Project area would not be irrigated. Planting and seeding to re-establish disturbed areas resulting from development of 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 residence and Fiddleneck Field. 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.

4.4.4.2 Sewage and Trash

Vault Toilet

Pre-manufactured, unisex vault toilets would be incorporated into the design of Fiddleneck Field. They 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.

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 the 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.

Trash Disposal

A trash disposal area would be provided to store multiple animal-proof cans promoting responsible waste management at the Eastport Day Use Staging Area, Fiddleneck Field recreation area, and the Fern View Terrace in accordance with the District's sustainability policy. A routine program for trash removal, including recycling and composting services would be implemented consistent with District parklands management practices.

4.4.4.3 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.

Chapter 4 - Section 4-5 McCosker Sub-area Creek Restoration and Enhancement



4.5.1 Restoration Objectives

The Project would include 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 of approximately 12,965 linear feet of drainage channels comprising the Alder Creek watershed that flows to San Leandro Creek.

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 restoration work for the approximately 770 linear feet of buried pipes that run under the Fiddleneck Field recreation site, referred to as 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 functions.

4.5.2 Creek Channel Establishment

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. 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 is anticipated to require removal of fill, most of which would be transferred to existing terraced area that would be

developed into the Fiddleneck Field recreation area. In addition, the culvert conveying flows off the site under Pinehurst Road would be retrofitted with internal flow baffles and the scour pool downstream of this pipe would be augmented to raise the water level by approximately one foot.

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 a 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 is to achieve stable and self-maintaining creek channels that require a low level of adaptive management and maintenance practices allowing the creeks to exist in a state of dynamic equilibrium, where they are properly transporting both water and sediment in a balanced manner, neither leading to excessive erosion nor deposition.

The creek restoration area comprises approximately four 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; 2) the stability of the creek channel; and 3) ‘naturalizing’ of the constructed features.

4.5.3 Riparian Habitat

4.5.3.1 Riparian Habitat Restoration

The Project would restore, establish, and enhance approximately four acres of riparian habitat throughout the length of the 2,291-linear foot Alder Creek channel and 770-linear foot Leatherwood Creek including approximately 0.6 acre of aquatic habitat. Approximately 0.1 acre of existing riparian habitat along Alder Creek would be enhanced through the installation of riparian plantings and approximately 3.9 acres of riparian habitat would be established throughout the two creek channels. Restoration work would involve 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*), California bay laurel (*Umbellularia californica*), and California buckeye (*Aesculus californica*).

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.

4.5.3.2 Habitat Restoration Benefits

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

Figure 19 - Proposed Actions for McCosker Sub-area-Creek Restoration and Recreation Development Area, Figure 20 - Creek Restoration and Recreation Development Area Concept Plan, Figure 21a - Creek Restoration and Recreation Development Area Cross-section A-A, and Figure 21b - Creek Restoration and Recreation Development Area Cross-section B-B and C-C show illustrative concepts of the proposed creek restoration areas, along with the recreation development areas.

This page is intentionally blank

Chapter 4 - Section 4-6
Huckleberry Botanic Regional Preserve
Public Access



4.6.1 Huckleberry Preserve Trail Improvements

Improvements in the Huckleberry Preserve would be limited to trail development, and closure and restoration activities to allow for trail connections between the three sub-areas that will comprise Robert Sibley Volcanic Regional Preserve as shown in *Figure 22 - Proposed Actions for Huckleberry Botanic Regional Preserve* and described in *Chapter 4 - Section 4-7*.

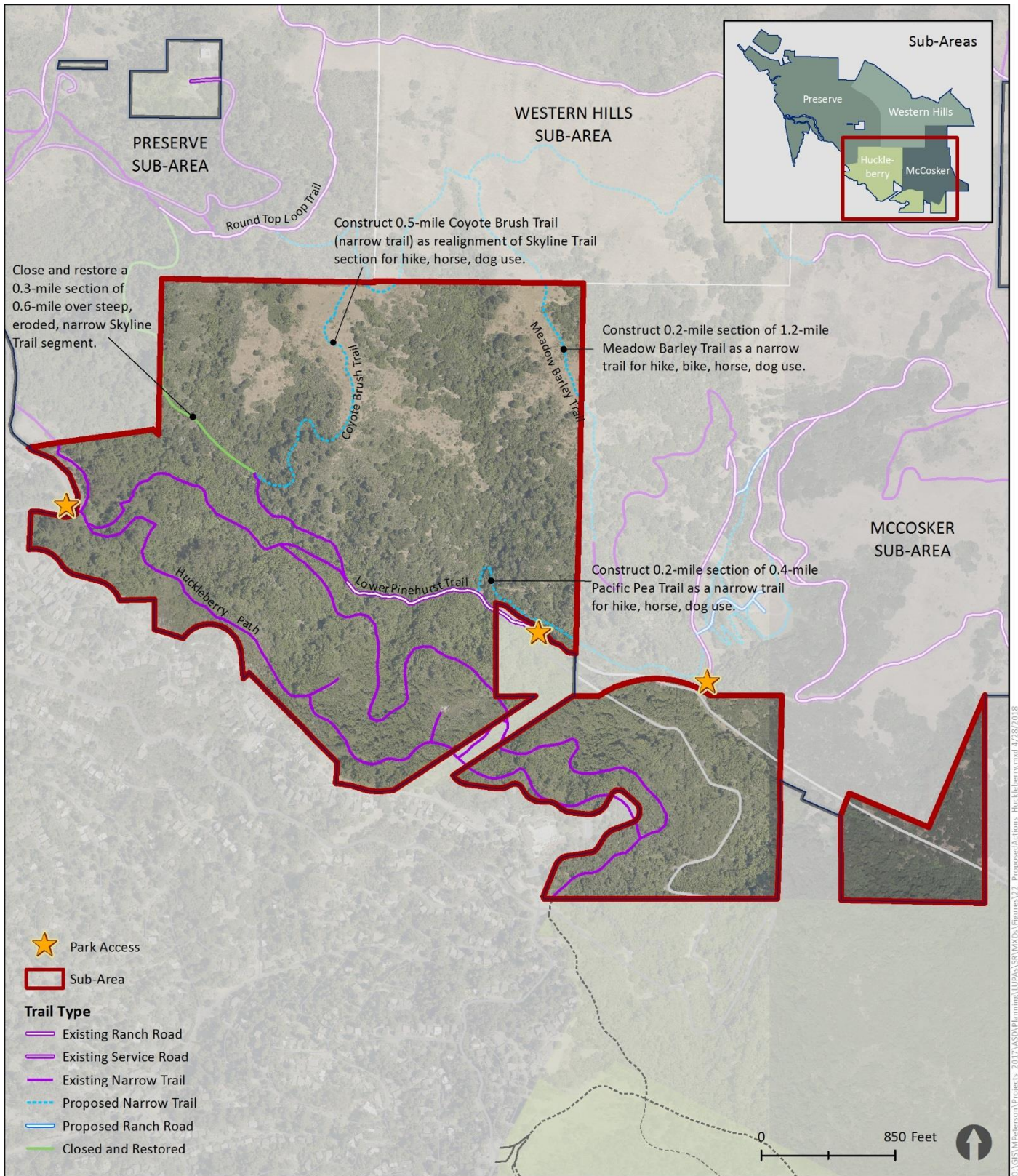


FIGURE 22: PROPOSED ACTIONS FOR HUCKLEBERRY BOTANIC REGIONAL PRESERVE

Chapter 4 - Section 4-7 Trail System



4.7.1 Trail System 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.

4.7.2 Recreation, Environmental and Operation Values

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

4.7.2.1 Recreational 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.

4.7.2.2 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.

4.7.2.3 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.

4.7.3 Trail Types - Standards and Assumptions

4.7.3.1 Trail Width

The trail system includes two natural surface trail categories; narrow trails (less than six feet wide) and ranch-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 23 - Existing and Proposed Trail Types in the Project Area* for location of narrow trails and ranch-road-width trails within the Project area and *Figure 24 - Typical Trail Cross Section* for an illustrative concept of a typical narrow trail.

4.7.3.2 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 create a sense of arrival/ place.

4.7.4 Trail Expansion Recommendations

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 other regional trails identified in the District Master Plan. Proposed actions would include:

- Minor changes in use for 2.6 miles of existing trails - 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
- Opening 5.2 miles of existing narrow and ranch road trails
- Constructing 4.0 miles of new narrow trails to enhance connectivity between the Preserve, Western Hills and McCosker sub-areas and other District parklands
- Reconstructing 0.14 miles of ranch road to complete connections in the McCosker sub-area;
- Realigning 0.4 miles of narrow trail and closing and restoring 0.6 miles of over steep,

eroded trail to improve trail sustainability and move the public away from known populations of pallid manzanita

- Constructing a new 0.3-mile, hiker-only, nature trail.

Refer to *Tables 4-2, 4-3, 4-4, 4-5* at the end of this section for a summary of the trails including their proposed use and length by sub-area. Refer to *Figure 25 - Proposed Trail Uses in the Project Area* for a map illustrating trail use recommendations within the Project area.

Overall 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. Considering the 639 additional acres that would be added to Robert Sibley Regional Preserve, overall trail density as measured by miles per acre would decrease by approximately 0.4 percent.

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 Devices (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).

4.7.4.1 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. 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 PG&E to maintain their transmission lines. Opening existing ranch road trails to the public to enhance trail continuity are recommended for the following routes.

Western Hills Sub-area

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.

Edgewood Trail, an existing 0.5-mile ranch road that would provide connections from the Red-trailed Hawk Staging Area and local City of Orinda neighborhoods to 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.

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.

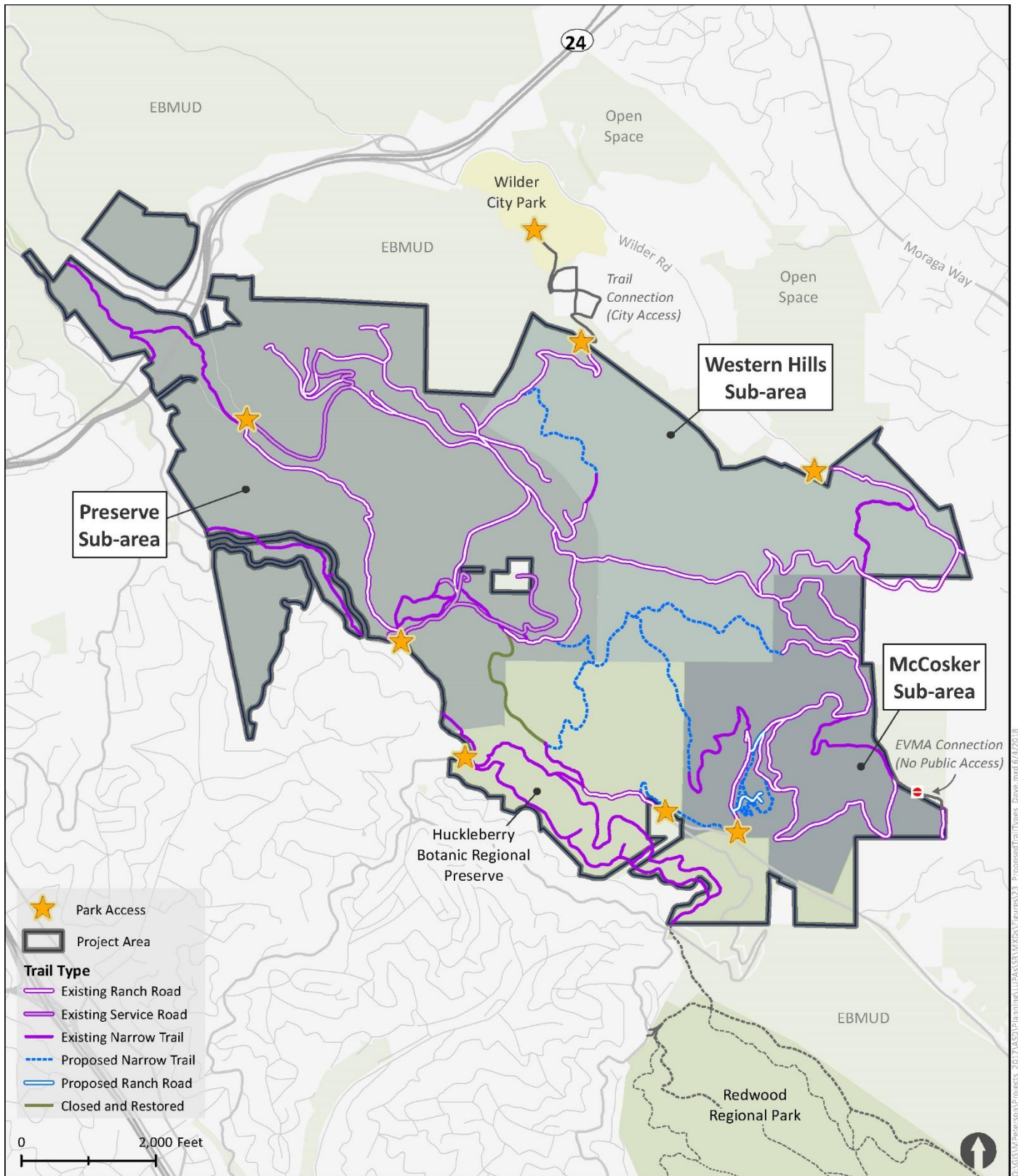


FIGURE 23: EXISTING AND PROPOSED TRAIL TYPES IN THE PROJECT AREA

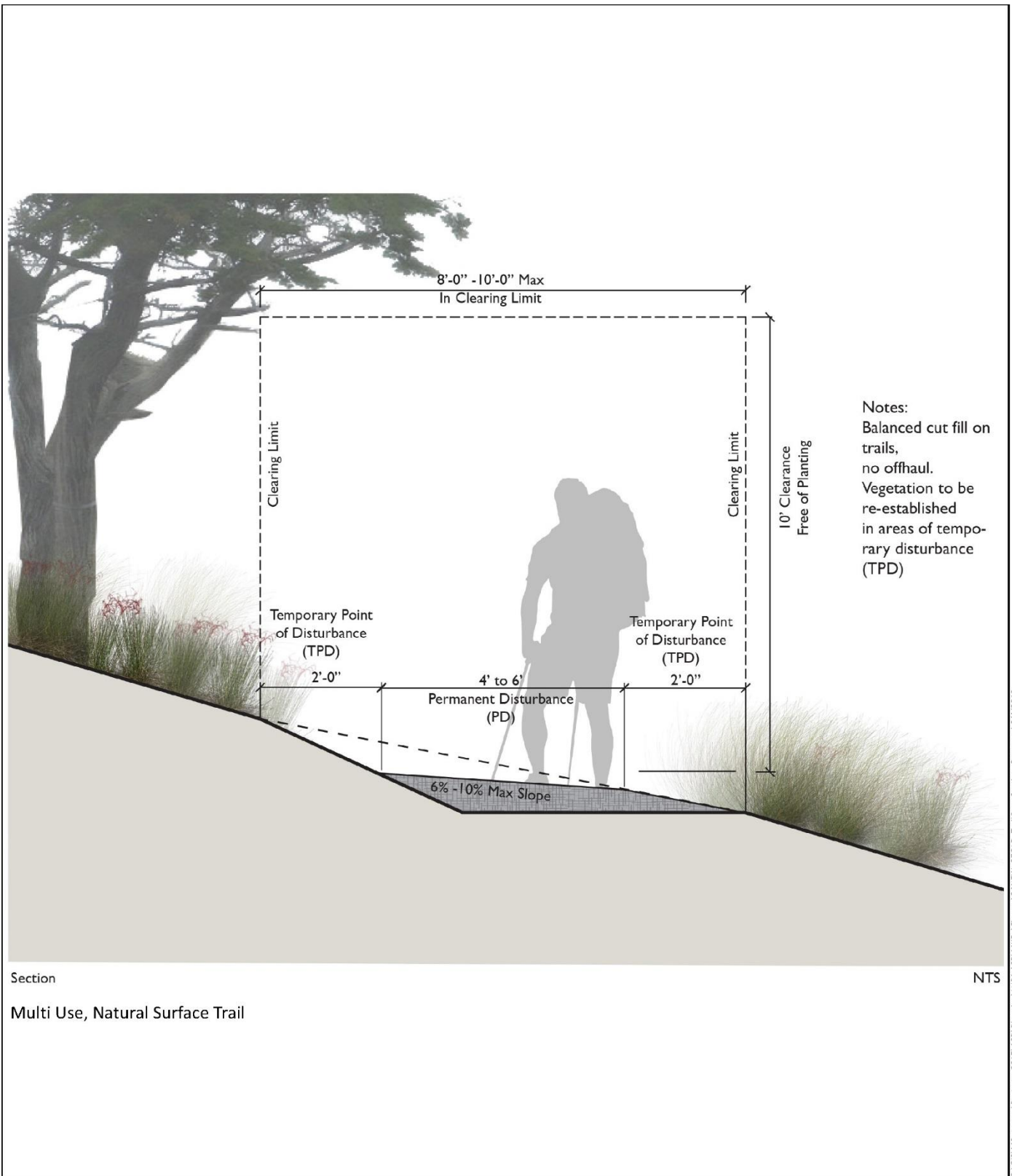


FIGURE 24: TYPICAL TRAIL CROSS SECTION

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

Gudde Ridge Trail, an existing 1.5-mile ranch road that would connect the Sibley 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, including hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding, would be considered as part of the Board of Directors' regular review of Ordinance 38.

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, including hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and horseback riding, would be considered as part of the Board of Directors' regular review of Ordinance 38.

The *Arroyo Willow Trail*, an existing 0.2-mile ranch road that would connect the 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.

4.7.4.2 New Narrow, Natural Surface, Recreation Trails throughout the Project Area - All Sub-areas and Huckleberry Preserve

Trail development would include approximately four miles of new, narrow, natural surface recreation trails that would be positioned to minimize impacts on sensitive species. New narrow trails throughout the Project area would include the following trails.

Preserve and Western Hills Sub-areas

Blue-eyed Trail, construction of 1.2 miles of narrow trail that would connect to Round Top Loop Trail and existing sections of ranch road that would complete this trail. Allowable trail uses, including hiking, walking of controlled and leashed (6-foot maximum) dogs, bike riding and

horseback riding, would be considered as part of the Board of Directors' regular review of Ordinance 38.

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.

McCosker, Western Hills Sub-areas and Huckleberry Preserve

Meadow Barley Trail, construction of 0.6 miles of narrow trail that would connect to Blue-eyed Trail. Allowable trail uses, including hiking, walking of controlled and leashed (6-foot maximum) dogs, and horseback riding, would be considered as part of the Board of Directors' regular review of Ordinance 38.

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.

4.7.4.3 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, trail use changes are recommended for the following routes.

Preserve Sub-area

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.

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.

McCosker Sub-area

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

4.7.4.4 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.

Preserve Sub-area and Huckleberry Preserve

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 that traverses the Preserve sub-area and Huckleberry Preserve.

4.7.4.5 Nature Trail Creation- McCosker Sub-area

The trail system would include the 0.3-mile, ADA compliant Alder Creek Nature Trail. This trail 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 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 would be constrained due to the site conditions, a vertical buffer would be maintained such that most of the trail would 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 could learn about the biology, geology and hydrology of the Alder Creek watershed.

In accordance with District Ordinance 38 and the California Fish and Wildlife Code, fishing would not be allowed.

Aside from controlled access along the restored creek zones, no public access would be provided to the undisturbed, natural channels 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 9 - Alder Creek Watershed* for location of natural and proposed restoration creek channels in this watershed.

4.7.5 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: 1) the District website; 2) park brochures distributed at access points in the Project area; 3) District events; and 4) through outreach with community groups, including homeowners’ associations and schools.

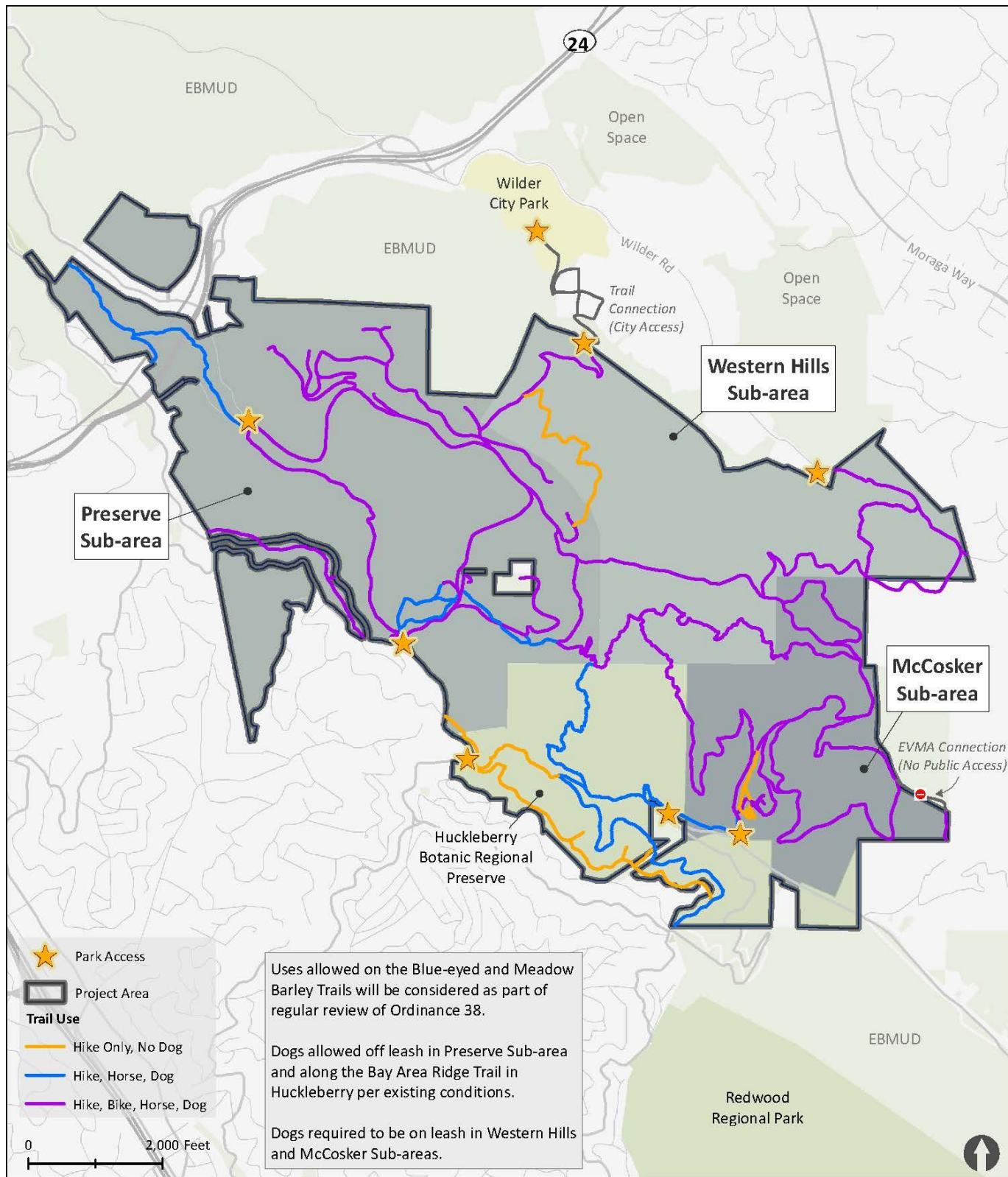


FIGURE 25: PROPOSED TRAIL USES IN THE PROJECT AREA

**TABLE 4-2
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 LF/MILES EXISTING				46,685	8.84
TOTAL LF/MILES NEW				1,429	0.27

**TABLE 4-3
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, to be considered as part of Board of Directors' regular review of Ordinance 38	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, to be considered as part of Board of Directors' regular review of Ordinance 38	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 LF/MILES EXISTING				16,057	3.04
TOTAL LF/MILES NEW				8,470	1.60

**TABLE 4-4
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, to be considered as part of Board of Directors' regular review of Ordinance 38	1,361	0.26
Blue-eyed Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed, to be considered as part of Board of Directors' regular review of Ordinance 38	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, to be considered as part of Board of Directors' regular review of Ordinance 38	2,604	0.49
Meadow Barley Trail	Existing	Ranch	Hike, Bike, Horse, Dogs Leashed, to	1,257	0.24

			be considered as part of Board of Directors' regular review of Ordinance 38		
Meadow Barley Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed, to be considered as part of Board of Directors' regular review of Ordinance 38	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 4-5
Huckleberry - Trails**

Trail Name	Trail Status	Trail Type	Proposed Use	Feet	Miles
Blue-eyed Trail	New	Narrow	Hike, Bike, Horse, Dogs Leashed, to be considered as part of Board of Directors' regular review of Ordinance 38	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, to be considered as part of Board of Directors' regular review of Ordinance 38	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	NA	1,397	0.26
TOTAL LF/MILES EXISTING				16,598	3.14
TOTAL LF/MILES NEW				4,594	0.87

This page is intentionally blank

Chapter 5
PLAN IMPLEMENTATION



This page is intentionally blank

Chapter 5 Plan Implementation



5.1 Implementation Programs and Priorities

This LUPA provides recommendations for: 1) managing existing resources; 2) restoring creek channels that are in poor condition and largely culverted and filled; and 3) developing public access and recreation facilities. It is anticipated that implementation would occur over a period of years, as adoption of the LUPA does not constitute a commitment of funds for implementation by the District (2013 Master Plan). Thus, implementation of these projects would be phased, contingent upon: 1) the condition of existing resources; 2) visitor demand; 3) obtaining funding for the development of facility improvements; 4) securing permits; and 5) in some cases, augmenting staffing levels.

5.1.1 Project Priorities

This section identifies project priorities and opportunities for phasing development of capital projects. Capital projects refer to one-time expenditures that would fund the development of physical features in the Project area. These would include: creek channel creation, staging areas, trails, picnic areas, campsites, interpretive exhibits, and expanded service facilities. The exact location and design of the creek restoration work and the proposed recreation and operations/maintenance facilities identified in this plan would be detailed during the implementation of specific projects to minimize effects on existing resources and long term operational expenses.

5.1.2 Construction Phasing, Timing, and Construction Workforce

Due to the deteriorated condition of the creek channels within the McCosker sub-area, the creek restoration work and associated public access and recreation facility development is ranked as the highest priority of the LUPA elements. Trail work may be phased over several seasons depending first on obtaining permitting and then on funding and staffing availability. Construction activities associated with the Preserve sub-area staging areas would be phased considering other District

priorities. A summary of the project elements by sub-area along with suggested prioritization is provided below.

In addition to factors dictating construction phasing, construction timing would likely be restricted due to the potential for sensitive species to occur in the Project Area. It is anticipated that the construction period would typically be restricted to August 1 to October 31, although there may other restrictions associated with bird nesting. Specific requirements tied to species protection would be determined through the permitting process. Due to the complexity of the proposed LUPA project elements, construction is anticipated to be phased over several years.

5.1.2.1 Preserve Sub-area, Staging Area, Water Supply, and Road Improvements

Construction Phasing

Recreation and public access improvements in the Preserve sub-area would include: 1) improvements to existing Sibley Main Staging Area, 2) improvements to Old Tunnel Road, and 3) improvements to utility infrastructure as summarized in *Table 5-1 – Preserve Sub-area Implementation Program* below. A description of trail implementation priorities is provided in *Section 5.1.2.4 Trail System*.

Construction of these project elements may occur during the same time period as the McCosker Creek Restoration and Recreation improvements or may be phased at a later time. Timing would be dependent on obtaining permits and funding and staff availability. Construction activities would likely occur over a three to five-month summer period extending to October 31st and would not typically occur during the winter. 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.

**Table 5-1
Preserve Sub-area Implementation Program¹**

RECREATION AND PUBLIC ACCESS IMPROVEMENTS	PHASING PRIORITY
Expand parking at Sibley Main Staging Area from 38 spaces to approximately 73 spaces – add bike parking – add electric recharging stations and bike racks as demand dictates	Incorporate into paving capitalization program – 1-5 years
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 – add bike parking – add electric recharging stations as demand dictates	Incorporate into paving capitalization program – 1-5 years
Replace portable toilet with vault toilet as budget allows	Incorporate into vault toilet capitalization program – 1-5 years
Install a 1,000-gallon water tank at existing backpack camp near Main Staging Area	Fund and implement under Park Operations annual budget – 1-5 years

¹ Phasing Priority - Project initiation contingent on obtaining CEQA certification, permits and funding – Due to anticipated permit constraints relating to construction timing – construction would occur late summer to early fall over 2- 3 years anticipated timing of construction initiation 1-3 years

Construction Workforce

Construction of these project elements would likely be completed by District Maintenance and Skilled Trades (MAST) staff with support from District parks staff as dictated by their job classifications or outside contractors.

5.1.2.2 Western Hills Sub-area

Recreation and public access improvements in the Western Hills sub-area will be completed prior to land conveyance from OGLLC to the District and will include development of a new staging area and three miles of existing narrow and ranch road trails as summarized in *Table 5-2 – Western Hills Sub-area Implementation Program* below. A description of new trail implementation priorities is provided in *Section 5.1.2.4 Trail System*.

Table 5-2
Western Hills Sub-area Implementation Program^{1, 2}

RECREATION AND PUBLIC ACCESS IMPROVEMENTS
Convey a 389-acre of the property conservation easement with multi-use trails
Convey management of Red-tailed Hawk Staging Area via an easement covering approximately 0.49 acres to incorporating 19 cars and two two-horse trailers, a restroom, drinking fountain, information panel, informal picnic site, bike racks, hitching posts, and wayfinding and regulatory signs.
Allow use for approximately ten cars and install wayfinding signs at the Wilder Park parking lot directing access to the Western Hills sub-area

¹ Phasing Priority - Transfer contingent on developer, OGLLC, meeting staging area development requirements and completing transfer agreement – 1- 2 years

² Implementation Considerations - Action covered under 2008 First Amendment to Donation Agreement by and between the East Bay Regional Park District and OG Property Owner LLC, 2004 Second Supplemental EIR for the Montanera Project and City of Orinda Resolution 13-05

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

Construction Phasing

Proposed recreation and public access improvements in the McCosker sub-area would include: 1) creek channel creation; 2) improvements to the existing day use staging area; 3) improvements to the existing roadway system; 4) bridge installation; 5) recreation facility development; 6) improvements to utility infrastructure, and 7) 1.3 miles of new narrow trails as summarized in *Table 5-3 – McCosker Sub-area Implementation Program*. A description of trail implementation priorities is provided in *Section 5-4 McCosker Sub-area - Phase I Implementation*.

The McCosker sub-area improvements would focus on: 1) daylighting the creek and creating a stable creek channel; 2) establishing public access connections from the Eastport Staging Area to the recreation terraces, including installation of bridges; 3) creating the Fiddleneck Field recreation area from the fill material excavated to create the stream channels; and 4) establishing riparian habitat as summarized in *Table 5-3 - McCosker Sub-area Implementation Program*.

Trail construction of Alder Creek Nature Trail, Arroyo Willow Trail, Leatherwood Creek Trail, and portions of the Ninebark Trail would also occur concurrent with the McCosker sub-area creek restoration and recreation improvements.

Construction of these project elements is anticipated to occur over two -three work seasons between 2019 and 2021. 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. Following completion of the McCosker sub-area construction activities, this area would remain closed for about one year (one full growing season) to allow the vegetation to become established.

**Table 5-3
McCosker Sub-area Implementation Program^{1,2,3}**

CREEK RESTORATION
Restore 1,387 linear feet of the main stem, 227 linear feet of the west branch, and 528 linear feet of the east branch of Alder Creek
Restore 770 linear feet of the culverted portion of a south branch tributary to Alder Creek, known as Leatherwood Creek
Restore, establish, and enhance 4.0 acres of riparian habitat, including 0.6 acres of aquatic habitat
Install irrigation to support habitat restoration
RECREATION AND PUBLIC ACCESS IMPROVEMENTS
Develop Fiddleneck Field terraced pads from excavated soils to create areas for the combined camping and interpretive programs site, parking for up to 43 vehicles, and operations support facilities
Develop campsite/Interpretive site amenities (e.g., pavilion, outdoor picnic area, campfire, vault toilet) for up to 50 people
Develop 0.3-mile, ADA compliant Alder Creek Nature Trail concurrent with Alder Creek restoration activities
Develop ADA compliant Leatherwood and Kitchen Orchard Trails concurrent with development of combined camping and interpretive program area
Install Ninebark Bridge, a fire truck-rated, arched vehicle/ ADA accessible bridge
Install 3,200 linear feet of water line, water tank, and water treatment system to service the developed recreation area
Develop Fern View Terrace Picnic area
Install Fern View Bridge to provide recreation and maintenance access to Fern View Terrace Picnic area
Install Alder Creek Bridge to provide recreation and maintenance access between trails east and west of Alder Creek
Underground 1,100 linear feet of existing overhead power and communication lines to serve developed recreation area, residence and equipment shed
Complete 2,900 linear feet of roadway improvements, including hammerhead turn-around, along the Meadow Barley Trail to service the residence

- ² Phasing Priority - Project initiation contingent on obtaining CEQA certification, permits and funding – Due to anticipated permit constraints relating to construction timing – construction would occur late summer to early fall over 2- 3 years anticipated timing of construction initiation 1-3 years
- ³ Implementation Considerations - Refer to *Section 5.2 – Construction Considerations, Section 5.4 – Permits and Approvals, and Section 5.6 – Construction Financing Strategy*
- ⁴ The existing equipment shed would be retained or could be rebuilt– this could happen in Phase I or may happen later

Construction Workforce

Construction of these project elements would likely be completed by contractors with oversight from District staff.

5.1.2.4 Trail System

Construction Phasing

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 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 prohibits 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.

Trail Implementation - Phase I

Phase I trail system improvements would incorporate existing trails into the system where these alignments would reduce the need for new trail construction to enhance trail connectivity. Incorporating existing alignments into the system would serve to minimize resource habitat disturbance and soil displacement associated with new construction. These trail openings would include proposed use changes on existing trails and opening existing trails in the Western Hills sub-area at time of Western Hills conveyance as described in *Section 5.1.2.2*. As described in *Section 5.1.2.3* and shown in *Table 5-4*, the Alder Creek Nature Trail, Kitchen Orchard Trail and Leatherwood Creek Trail would be developed concurrent with the McCosker sub-area creek restoration, public access and recreation development construction activities.

**Table 5-4 - Phase I
Trail Implementation Program**^{1, 2}

Sub-area	Trail	Implementation Considerations
Preserve	Round Top Loop Trail	Open existing trail to bikes to provide use consistency
Preserve	Gudde Ridge Trail	Open existing trail to bikes to provide use consistency
Western Hills	Gudde Ridge Trail	Open to uses consistent with Western Hills LTMP
Preserve	William Penn Mott Jr. Trail	Open existing trail to bikes to provide use consistency
Western Hills	William Penn Mott Jr. Trail	Open to uses consistent with Western Hills LTMP
Western Hills	Domingos Ranch Trail	Open to uses consistent with Western Hills LTMP
Western Hills	Edgewood Trail	Open to uses consistent with Western Hills LTMP
Western Hills	Traprock Trail	Open to uses consistent with Western Hills LTMP
McCosker	McCosker Loop Trail	Open existing trail to dogs on leash to provide use consistency
McCosker	Alder Creek Nature Trail	Construct concurrent with Creek restoration and recreation and public access improvements
McCosker	Kitchen Orchard Trail	Construct concurrent with Creek restoration and recreation and public access improvements
McCosker	Leatherwood Creek Trail	Construct concurrent with Creek restoration and recreation and public access improvements

¹ Western Hills Phasing Priority – Existing trails would be opened at time of Western Hills conveyance and opening – anticipated in 1-2 years

² As described above, trail use changes for trails in the Preserve and McCosker sub-areas would be contingent on the Board approving modifications to Ordinance 38

Trail Implementation - Phase II

Phase II of the trail system improvements would include opening existing trails in the McCosker sub-area and making the proposed changes in uses on the McCosker Loop Trail in the McCosker sub-area when the creek restoration and terrace creation work has been completed as summarized in *Table 5-5 –Phase II – Trail Implementation Program*.

Trail development in Phase II would include construction of approximately 3.9 miles of new, narrow, natural surface recreation trails that would be positioned to minimize impacts on sensitive species including 0.3 miles in the Preserve sub-area, 1.6 miles in the Western Hills sub-area, 0.4 miles in the McCosker sub-area, and 0.9 miles of new trails in Huckleberry Preserve, along with realignment of a section of over steep and eroded trail that traverses the Preserve sub-area and Huckleberry Preserve. Access to the construction sites would be from either the Skyline Boulevard or Pinehurst Road depending on the location of the site improvements.

Table 5-5
Phase II - Trail Implementation Program ^{1,2}

Sub-area	Trail	Phasing Contingencies
McCosker	McCosker Loop Trail	Existing – Currently open - Trail to be closed during creek restoration, terrace creation and road realignment and reopened to include dogs on leash to provide use consistency when creek restoration and terrace creation is completed and vegetation established– 3-5 years
McCosker	Lava Rock Loop	Existing – Open when creek restoration and terrace creation is completed or when Western Hills land transfer is complete – 3-5 years
McCosker	Ninebark Trail	Existing –Portions currently open – Trail to be closed during creek restoration, terrace creation and road realignment and reopened when this construction work is completed and vegetation established – 3-5 years
Preserve, Western Hills, McCosker	Blue-eyed Trail	New - Incorporate into trail development program prioritization plan – 3- 5 years
Preserve, Huckleberry	Skyline Trail	Close and Restore- Incorporate into trail development program prioritization plan – 3- 5 years. Complete closure/restoration work concurrent with new construction
Western Hills, McCosker, Huckleberry	Meadow Barley Trail	New - Incorporate into trail development program prioritization plan – 3- 5 years
McCosker, Huckleberry	Pacific Pea Trail	New - Incorporate into trail development program prioritization plan – 3- 5 years
Huckleberry	Coyote Brush Trail	New (Realignment) - Incorporate into trail development program prioritization plan – 3- 5 years. Complete closure/restoration work concurrent with new construction

¹ Implementation Considerations - Action to be covered under CEQA certification and permits

² As described above, trail use changes for trails in the Preserve and McCosker sub-areas would be contingent on the Board approving modifications to Ordinance 38

Trail Implementation - Phase III

Phase III of the trail system improvements would involve permitting and constructing the Basalt Trail in the Western Hills sub-area as summarized in *Table 5-6 –Phase III – Trail Implementation Program*.

Table 5-6
Phase III - Trail Implementation Program

Sub-area	Trail	Phasing Priority	Implementation Considerations
Preserve, Western Hills	Basalt Trail	New - Incorporate into trail development program prioritization plan – 5-7+ years	Action to be covered under CEQA certification – implementation would require reopening Biological Opinion and new permits

Construction Workforce

Construction of these project elements would likely be completed by District MAST staff and Trail Development Group staff as dictated by their job classifications. 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 to 60 volunteers for a one to three-day event.

5.2 Construction Considerations

This section provides a description of construction activities for the recommendations identified in the LUPA. A summary of the construction activities is listed in *Table 5-7 - Construction Activities for Proposed Actions*, which is organized by the proposed action for each of the sub-areas.

5.2.1 Preserve Sub-area

5.2.1.1 Staging Area, Water Supply and Road Improvement Activities

Expansion of the Main Staging Area would involve minor grading at the existing parking area to modify the existing parking layout and approximately 11,031 square feet of grading in a currently vegetated site. Soil materials would largely be balanced on site.

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.

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.

Installation of the vault toilet at this site would involve soil excavation to accommodate the toilet and prepare the site for maintenance and ADA compliant access. Some of this material would likely need to be hauled off-site.

5.2.2 McCosker Sub-area

5.2.2.1 Access Road and Bridge Construction Activities

Grading for the access road improvements within the valley floor would occur in conjunction with the creek restoration work and the installation of the bridges.

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 stream 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 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 current California Building Code (CBC) and project site coordinates of: Latitude = 37.84310; Longitude = -122.18070.

5.2.2.2 Fiddleneck Field Creation

Recreation facility development activities in the McCosker sub-area would involve placing fill material from the creek excavation work to create graded pads for future implementation of camping and day-use facilities in areas where the vegetation is generally composed of remnant, declining ornamental trees from a former nursery operation, non-native grasses and ruderal species.

Soil excavated during creek daylighting and associated enhancements would be placed as engineered fill at various locations within the level- to gently sloping terraces to define the Fiddleneck Field recreation area. The thickness and location of the fill would be governed by slope stability considerations; completed fill areas would be graded to accommodate future recreational improvements.

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. 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.

Construction of the Fiddleneck Field recreation area would require approximately 2.8 acres of grading, as part of the overall grading for the Project improvements for this sub-area. This site would be built up from its current elevation using fill material provided from the excavation of approximately 30,300 cubic yards from the creek restoration area to create the proposed recreation use areas. 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 were 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.

5.2.2.3 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 area defined as the Fiddleneck Field recreation area as described above; 3) removing the existing culverts and drainage structures totaling approximately 2,720 linear feet; 2,460-linear feet in the Alder creek channel and 260 linear feet of the Leatherwood Creek channel); 4) abandoning approximately 460 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 removed from the site and utilities would be relocated. Existing structures to be removed include: approximately concrete junction boxes, concrete headwalls, a concrete retaining wall, and 30-inch to 60-inch corrugated metal pipes, and miscellaneous storm drains and drain inlets within the channel.

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. Biotechnical bank stabilization techniques, which include vegetated soil lifts and brush mats, would be employed. 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 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.

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 on the terraces would be cleared and grubbed of surface and sub-surface deleterious matter, including vegetation, aggregate road base material, concrete and abandoned utilities. These materials would be removed from the site or stockpiled for reuse as determined to be appropriate during development of the project element designs. 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.

Alder Creek

The lower reach of Alder Creek 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 the native 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 alignment 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, ground surface 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.

5.2.3 Preserve and McCosker Vault Toilets

5.2.3.1 Vault Toilet Installation

Onsite placement of the precast concrete vault toilet buildings would consist of burying a sealed vault to a 5-foot depth and installing a pre-fabricated building structure over the sealed vaults. Excavation for the vault toilets would require approximately 32 cubic yards of soil removal. The impervious area, including the 272-foot restroom and access pad surrounding the restroom facility would be approximately 675 square feet.



5.2.3.2 Regulatory Compliance

Since July 1969 there has been a moratorium on septic tank installations in the Canyon 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 LUPA 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.

5.2.4 New Narrow Trails

5.2.4.1 Habitat Considerations

New trails would traverse a mix of California annual grassland, coyote brush scrub, coast live 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 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 19,765 linear feet (3.6 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 an approximately 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 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.

5.2.4.2 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 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.

5.2.4.3 Drainage Crossings

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 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 75 millimeters in diameter).



Refer to *Figure 26 - Typical Armored Swale and Causeway* for a plan and cross-section view of typical natural rock crossings.

5.2.4.4 Rock Causeways

Whenever possible, the trail would be located to avoid areas with seasonal or year-long water problems. 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 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 height of the causeway would be designed for a maximum flow event. 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 26 - Typical Armored Swale and Causeway* for a plan and cross-section view of a typical causeway.

5.2.4.5 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: 1) eliminate sources of erosion; 2) create a natural appearance; and 3) 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 or using jute netting, net or other biodegradable covering agents in areas of sheet erosion 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 old trail bed; and 5) 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.

5.2.4.6 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.

5.2.5 Construction Staging

5.2.5.1 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.

5.2.5.2 McCosker Sub-area

Equipment, supplies, and stockpiled materials for the public access, recreation facility development and creek restoration work in the McCosker sub-area would be stored in a temporary construction staging area within the disturbed terrace area that would ultimately be developed as the Fiddleneck Field Recreation Area.

5.2.5.3 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.

5.2.6 Construction Safety – Worker 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.

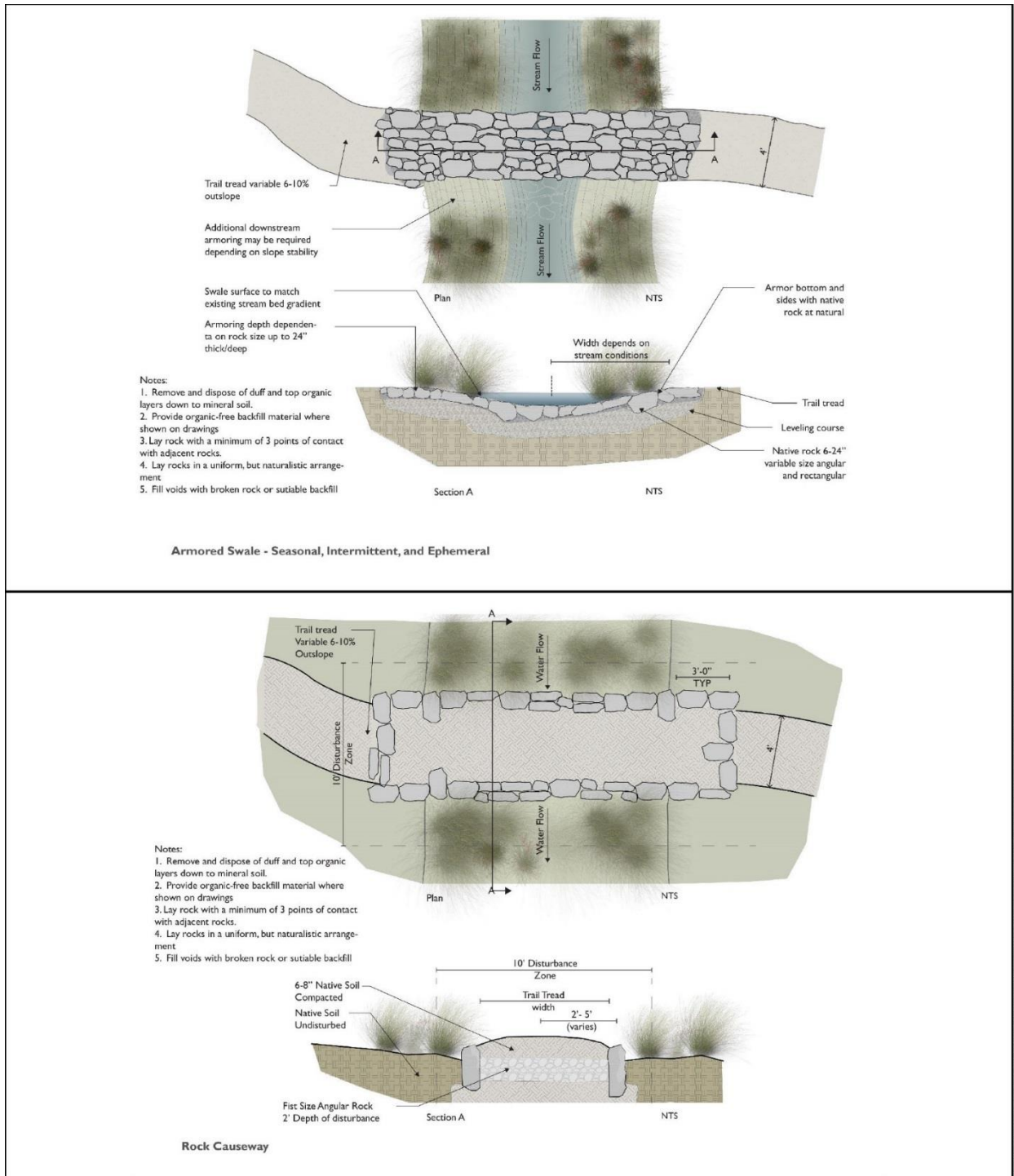


FIGURE 26: TYPICAL ARMORED SWALE AND CAUSEWAY

5.3 Summary of Construction Activities

Table 5-7 *Construction Activities for Proposed Actions* summarizes the LUPA recommendations by sub-area, identifies factors involved in completing construction, and provides an estimated duration of construction for each activity.

**Table 5-7
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	40 total duration in 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 total duration in weeks
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 Install wayfinding signage at a distance that	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
	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: 0.92 acres	Depth: 1 foot Balanced cut/fill	12 total duration in weeks
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	Construction Area: 0.27 acres Final Footprint: 0.27 acres	Depth: 1 foot Balanced cut/fill	8 total duration in weeks
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 Fiddlehead 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	To be incorporated as part of creek restoration and recreation improvements
BRIDGE INSTALLATION				
McCosker Sub-area Ninebark Vehicle Bridge to Fiddlehead 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	To be incorporated as part of creek restoration and recreation improvements
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	Duration dependent on availability of staff/volunteer and/or contractor crew availability
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.	Duration dependent on availability of staff/volunteer and/or contractor crew availability
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	Construction Area: 0.31 acres Final Footprint: 0.16	Depth: 1-2 feet Excavation: 757 cy Fill: 757 cy	Duration dependent on availability of

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
	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	acres	Spoils: 0 cy Imported fill: 0 cy Balance cut/fill typ.	staff/volunteer and/or contractor crew availability
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.	Duration dependent on availability of staff/volunteer and/or contractor crew availability
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.	Duration dependent on availability of staff/volunteer and/or contractor crew availability
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	To be incorporated as part of creek restoration and recreation improvements
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	To be incorporated as part of creek restoration and recreation improvements
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.	Duration dependent on availability of staff/volunteer and/or contractor crew availability
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.	Duration dependent on availability of staff/volunteer and/or contractor crew availability
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	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	To be incorporated as part of creek restoration and recreation improvements

Location	Construction Activity	Construction Area	Depth of Excavation / Quantity of Excavation and Fill	Construction Duration
RECREATION FACILITY DEVELOPMENT (continued)				
McCosker Sub-area Fiddleneck Field recreation area (continued)	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			
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	To be incorporated as part of creek restoration and recreation improvements
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.	4 total duration in weeks
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	4 total duration in weeks
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: 1-4 feet Excavation: 320 cy Fill: 320 cy Spoils: 0 cy Imported fill: 320 cy	To be incorporated as part of creek restoration and recreation improvements

5.4 Permits and Approvals

Implementation of the LUPA would involve review and permitting from environmental resource regulatory agencies and local agencies including, but not limited to, the entities described in this sub-section.

5.4.1 Permits Required for New Construction

5.4.1.1 Environmental Regulatory Agencies

Environmental regulatory permits and a programmatic biological opinion for the protection of listed species from the U.S. Fish and Wildlife Service are anticipated for actions recommended in this LUPA that require ground and habitat disturbance. These actions include the creek restoration work and development of new trails, infrastructure, and recreation facilities. Ongoing resource management programs would be covered under the District's *Covered Exceptions-4D Listing*. Repair and enhancement of existing trails and roads and staging areas would be covered under the District's *Regional General Permit*.

Environmental resource regulatory agencies that are anticipated to review and permit project recommendations include:

- California Department of Fish and Wildlife
- Regional Water Quality Control Board
- U.S. Army Corps of Engineers
- U.S. Department of the Interior Fish and Wildlife Service

5.4.1.2 Local Agencies

Local agencies that are anticipated to review and provide construction permits for project recommendations include:

- Central Contra Costa Sanitary District
- City of Orinda
- Contra Costa County
- East Bay Municipal Utility District (EBMUD)
- Pacific Gas & Electric (PG&E)

5.4.2 Permits Previously Obtained

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.

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 acres of natural open space will be preserved in perpetuity, as mitigation for the Wilder development-related impacts to natural resources.

5.5 Cost of Proposed Improvements

This section provides an estimate of probable costs for the improvements proposed in the LUPA by sub-area with the total estimate of probable costs equaling approximately \$9,546,121.

Because this is a LUPA, rather than an engineering study, the proposed improvements have been scoped at a “planning level”. Correspondingly, the estimated costs of the improvements are also at a planning level. Nevertheless, the estimate should give a good sense of the probable cost of implementing the recommended improvements for each of the sub-areas.

5.5.1 Preserve Sub-area Public Access Improvements

As shown in *Table 5-8 - Preserve Sub-area Estimate of Probable Costs* below, the estimated cost to implement the Preserve sub-area improvements is approximately \$430,121. Costs are based on a 2018 estimate of unit costs. Actual construction cost estimates of probable costs would be determined after the LUPA has been approved, construction documents have been developed and permitted, and resultant mitigation and monitoring requirements determined.

**Table 5-8
Preserve Sub-area Estimate of Probable Costs**

PROPOSED IMPROVEMENTS	ESTIMATED COST
Sibley Main Staging Area (improvements to existing lot and development of new lot)	\$ 124,854
Old Tunnel Road Trailhead - Road and Parking Improvements	\$164,243
Sibley Main Staging Area Backpack Camp Water Tank	\$ 5,000
Vault Toilet	\$ 50,000
Soft Costs, including design, contingency funds, permitting, monitoring	\$344,097 x.25 = 86,024
Total Costs	\$430,121

5.5.2 Western Hills Sub-area Improvements

Since the Western Hills sub-area will be transferred to the District with habitat mitigation requirements, trails, infrastructure and staging area improvements completed, there is no estimate of probable costs. For an estimate of additional, proposed new narrow trail construction costs refer to *Sub-section 5.5.4*.

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

As shown in *Table 5-9 - McCosker Sub-area Estimate of Probable Costs* below, the estimated cost to implement the McCosker sub-area improvements is approximately \$8,964,000. Costs are based on a 2018 estimate of unit costs. Actual construction cost estimates of probable costs would be determined after the LUPA has been approved, construction documents have been developed and permitted, and resultant mitigation and monitoring requirements determined.

**Table 5-9
McCosker Sub-area Estimate of Probable Costs**

PROPOSED IMPROVEMENTS	ESTIMATED COST
Site Work for Creek Restoration & Recreation Site Development	\$2,915,300
Creek Channel & Riparian Habitat Creation	\$ 968,100
Public Access & Recreation Facility Development	\$1,328,500
Total Construction Costs	\$5,111,700
Soft Costs, including design, contingency funds, permitting, monitoring	\$3852,300
Total Costs	\$8,964,000

5.5.4 New Narrow Trails

Table 5-10 - New Narrow Trail Construction Estimate of Probable Costs, shows the estimated cost for approximately four miles of new narrow trails including features such as causeways, and drainage crossings. This estimate starts with a base cost of \$5/linear foot (\$26,400), a common 2018 estimate for this type of construction and adds an estimated cost for 11 additional trail crossings and causeways and an allowance for trail wayfinding and regulatory signs. It can be expected that some of the narrow natural trail miles would cost more than the estimated cost, while others may cost less, depending on the characteristics of the site and location (e.g. distance/ease of access from staging area).

**Table 5-10
New Narrow Trail Construction Estimate of Probable Costs**

PROPOSED IMPROVEMENTS	ESTIMATED COST
4.0 miles of upland trails	\$105,600
11 additional trail crossings and causeways	\$ 11,000
Trail wayfinding and regulatory signs	\$ 5,000
Soft Costs, including design, contingency funds, permitting, monitoring	\$121,600 x.25 = 30,400
Total Costs	\$152,000

5.6 Construction Financing Strategy

As mentioned above, full implementation of all the LUPA recommendations would cost roughly \$9,546,121. As this is a significant amount of money, it will be important to leverage District funds with funds from government grant programs and other outside sources to fully realize the proposed Project improvements. LUPA implementation would also need to consider placing some projects in the District “pipeline” of programs that would allow for funding improvements over a longer time through standing capitalization programs, as appropriate. The final financing strategy, based on a more refined estimate of probable costs, would come to the Board of Directors for approval, along with approvals to move forward with construction.

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

The most significant costs associated with implementing the LUPA are the costs associated with the public access and recreation creek restoration improvements for the McCosker sub-area. As such, leveraging District funds with state, regional and local funding opportunities will be key to implementing these improvements.

To date, over \$4.4 million in outside funding has already been secured, including approximately \$2.2 million from CalTrans and over \$400,000 in developer fees. Secured funding also includes several state grants: \$500,000 from the River Parkways Grant Program, \$500,000 from the California Conservancy Proposition 1 and \$750,000 from the Urban Rivers Proposition 1 Grant.

East Bay Regional Park District funding sources will likely include Measure WW and Measure CC funding. The District will continue to actively seek additional outside funding for these Project components, which may include additional Proposition 1 or restoration grants.

5.6.2 Paving Capitalization Program

Prioritizing infrastructure improvements takes into consideration: safety, maintenance, existing conditions, and ability to meet community needs and enhance the visitor experience on a District-wide basis. Providing and maintaining District-owned infrastructure is one of the District's core responsibilities. To this end, the District has adopted a paving capitalization plan for improving and maintaining District parking lots, roadways and paved bikeways. As part of the LUPA implementation strategy, the Old Tunnel Road and Sibley Main Staging Area improvements would be incorporated into the paving capitalization program and prioritized with other District projects based on the criteria listed above.

5.6.3 MAST Vault Toilet Concrete Building Fund

The MAST Vault Toilet Concrete Building Fund is a program similar to the paving program for both restrooms and septic systems wherein the District maintains a priority list for installing vault toilets and septic system in new locations and for replacing temporary portable toilets in locations where it is not feasible or practicable to hook into municipal sewage systems. As part of the LUPA implementation strategy, the proposed Old Tunnel Road vault toilet would be incorporated into the MAST Vault Toilet Concrete Building Fund program and prioritized with other District projects.

5.6.4 Trail Development Program

Prioritizing trail improvements similarly takes into consideration: Ordinance 38 and required modifications prior to LUPA implementation, safety, maintenance, existing conditions, and ability to meet community needs and enhance the visitor experience on a District-wide basis, as well opportunities to tap into volunteer and non-profit organization programs, and grants. For a discussion of volunteer and non-profit organization programs refer to *Section 5.8.3*.

5.7 Long-Term Financial Assurances – Endowments and Mitigation Funds

5.7.1 Overview

There are several established funding sources for managing the Western Hills and McCosker sub-areas that are associated with the Conservation Easement and Zone of Benefit established as part of the mitigation plan for the Wilder (Gateway, Montanera) development. Each of these sources is described below.

5.7.2 Western Hills Open Space Conservation Easement Endowment

Two separate endowments have been established in trust to fund the management of this conservation easement (*Wildlife Heritage Foundation Perpetual Conservation Easement Endowment* 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 (Fund), which is the mechanism for receiving money for oversight and enforcement of the easement.

The principal amount of the Western Hills Open Space Long-term Management Endowment was determined to be \$1,283,176 as approved by the Resources Agencies, in consultation with the District, prior to groundbreaking based on a Property Analysis record (“PAR”) or other resource agency-approved analysis of the anticipated long-term resource management costs. The principal amount of the Western Hills Open Space Long-term Management Oversight Management Endowment was determined to be \$217,111.

Prior to conveying to the Western Hills Open Space to the District, the resource agencies must review and approve information sufficient to determine how the funds will be managed and safeguarded over time. Once the lands have been transferred the District will need to prepare and submit an annual report to the Conservation Easement Holder (with a copy sent to each of the Resources Agencies) describing the general status of the Western Hills Open space area, any substantial management activities, existing or expected problems, and any proposals to address those problems. Proposals for activities that will affect wetlands, streams, riparian habitat or other jurisdictional resources not specifically authorized by the Western Hills Long Term Management Plan or the Conservation Easement will require Resource Agency approval.

A Geological Hazard Abatement District (GHAD) was created to address any landslide or erosion issues. The GHAD will also be responsible for maintaining developments within the GHAD area that will directly benefit Western Hills Open Space visitors. These include 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.

5.7.3 Zone of Benefit – Western Hills Open Space and McCosker Parcel

The District, in cooperation with the OGLLC, established the Gateway Valley Zone of Benefit No. 6 for the purpose of maintaining improvement activities within Western Hills Open Space and McCosker parcel, as defined in the donation agreement between OGLLC and the District. Management and maintenance improvements include the following:

- Water system management/ inspection and repair and water quality monitoring
- Establishing a grazing lease and managing grazing including livestock trough and plumbing maintenance
- Managing invasive, noxious plants
- Maintaining fencing and gates
- Grading/mowing of roads
- Predator control – bull frogs and feral pigs, as required
- Park Operations ranger patrol and debris removal
- Police and fire patrol and response

It is estimated that the annual parcel assessment will approximate \$80 per unit within the Wilder residential subdivision, and will be adjusted in future years based on the Consumer Price Index to pay for the maintenance of improvements.

5.7.4 McCosker Pre-donation Improvements

When the District obtained the McCosker parcel, the agreement included a one-time, lump sum payment of \$1,000,000 dedicated to pre-donation improvements that were completed by OGLLC, the Wilder residential developer, and funded by the OGLLC's management funding donation.

5.8 Long Term Operations and Maintenance

The District's ongoing operations and management activities are currently funded largely from the District's operating budget and from various grants. It is expected that the operating budget, and potential, future grants would continue to be the primary sources of funding. These funds would be augmented by the endowments and mitigation funds established for the management of the Western Hills Open Space and the McCosker parcel. District funding sources are described in more detail below.

5.8.1 District Staffing

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 is scheduled to come on-line to serve the Project area once the McCosker sub-area public access and recreation improvements are built and operational.

5.8.2 Additional Workforce Options

In the interest of efficiency, the District augments the work of staff by: 1) contracting with private consultants or contractors where specialized work or heavy equipment is required for a short-term project; or 2) when a workforce is required for a short (seasonal or less) duration, and when contracting would be more practical than using District staff. In some instances, the District contracts with other governmental agencies such as the California Department of Corrections and Rehabilitation or with non-profit organizations like CiviCorps Charter School, to perform various park construction and vegetation management and treatment activities. Determining the need for these types of services for implementing the proposed LUPA recommendations would be determined on a project by project basis.

5.8.3 Volunteers and Non-Profit Organizations

Volunteer programs directed at actively managing and maintaining the trail system can build ownership toward the Preserve by the public and provide stewardship benefits. Community supported stewardship and education may be achieved through ongoing volunteer programs.

As described in *Section 4.1- Staff Presence - Park Patrol, Management, and Emergency Response*, in-house volunteer programs include the Volunteer Trail Safety Patrol (VTSP) and the Ivan Dickson Volunteer Trail Maintenance Program. The Ivan Dickson endowment provides about \$20,000 per year for volunteer projects. These funds cover staff, equipment purchases, and materials. The District is often successful in obtaining sponsorships for Ivan Dickson projects that provide funding or in-kind contributions. Recent sponsors have included REI, Backpacker Magazine, and the Power Bar Company.

In addition, the District periodically uses supervised volunteers from conservation organizations (e.g., California Native Plant Society, Audubon Society, Sierra Club), local schools and colleges,

and community groups (e.g., Claremont Conservancy, Hills Conservation Network) in conjunction with District staff and professionals to implement hand maintenance and habitat restoration activities, as well as monitoring and data collection. Stakeholder participation can be encouraged as part of the ongoing volunteer programs established by the District (Refer to www.ebparcs.org for a list of current volunteer programs).

The District can continue to realize both educational and operational benefits by encouraging local participation and partnership in park and resource stewardship, while also saving on certain capital and maintenance costs. In addition, further development and enhancement of existing partnerships between the District and non-profit organizations to carry out selected stewardship, monitoring, planting, and maintenance activities would facilitate more meaningful outreach and communications with the public in relation to the environmental values that the District is committed to protect and/or enhance. Moreover, persons conducting research at universities and colleges or for other agencies may be interested in data collection, research, and analysis related to certain mitigation monitoring programs, such as monitoring for Alameda whipsnake, California red-legged frog, and salmonid populations within the Project area.

5.9 Agency Coordination/Partnerships

Continuation of ongoing cooperating actions and partnerships between the District and other agencies with adjacent and similar land management responsibilities, including EBMUD, the City of Orinda and the City of Oakland and Moraga-Orinda Fire Departments, will be essential to successful implementation of the LUPA, as these types of partnerships offer a means of sharing staff and technical resources and information.

5.10 Community Involvement

Successful implementation of the plan will require community involvement to protect park resources and to achieve the full recreation potential of the Project area. Ongoing educational and interpretive programs and outreach opportunities have been identified in *Section 3.3 – Recreation and Interpretation*. These ongoing programs will serve to strengthen ties with park users, members of the community, volunteers, other agencies and organizations as the Preserve expands to incorporate the Western Hills and McCosker sub-areas.

Chapter 6
REPORT PREPARATION AND REFERENCES



This page is intentionally blank

Chapter 6

Report Preparation and References



6.1 Report Preparation

6.1.1 Project Team and Support Services

This LUPA for Robert Sibley Volcanic Regional Preserve was prepared by Julie Bondurant, Principal Planner, under the direction of Bob Nisbet, Assistant General Manager of Acquisition, Stewardship and Development, with assistance from the following District Project Team:

Anthony Ciaburro, Chief of Public Safety
Becky Tuden, Environmental Services Manager
Carmen Erasmus, Landscape Architect
Dan Sykes, Parkland Unit Manager
Dave Worley, Park Ranger II
David Zuckermann, Regional Interpretive and Recreation Services Manager
Denise Defreese, Wildland Vegetation Manager
Duncan Marshall, Field Office Surveyor
Glenn Gilchrist, Design Manager
Gretchen Rose, Patrol Watch Commander

Jim Rutledge, Park Supervisor
Jorgen Blomberg, ESA Design Team Director
Kim Thai, Planner
Matthew Graul, Chief of Stewardship
Michele Hammond, Botanist
Pamela Beitz, Resource Analyst
Paul Cutino, Assistant Fire Chief
Ren Bates, Capital Program Manager
Scott Stoller, ESA Senior Managing Engineer
Steve Castile, Chief of Park Operations
Tiffany Margulici, Grants Manager

Additional District support was provided by the following staff:

Mapping & GIS Services: David Drueckhammer, GIS Coordinator, Megan Peterson, GIS Programmer/Analyst, Christie McKaskey, GIS Analyst

Right-of Way and Easements: Duncan Marshall, Field/Office Surveyor; Suzanne Lusk, Senior Land Acquisition Specialist; Linda Wu, Land Acquisition Specialist

Administrative Staff: Gayle Still, Senior Office Specialist

Community Outreach and Engagement: Morgan Dill, Naturalist; Michael Charnofsky, Naturalist; Isa Polt-Jones, Public Information Representative, Mike Nolan, Website Designer

Sanitation and Recycling: Matthew Norton, Sanitation Recycling Supervisor, Andrew Green, Sanitation Recycling Coordinator

Stewardship: David Riensche, Wildlife Resource Analyst; Doug Bell, Wildlife Program Manager; Steve Bobzien, Ecological Services Coordinator; Michele Hammond, Botanist; Joe Sullivan, Fisheries Program Manager, Hal MacLean, Water Management Supervisor, Kristen Van Dam, Resource Analyst.

Trails Development Group: Sean Dougan, Trails Development Program Manager; Sean Connelly, Trails Coordinator; Suzanne Wilson; Senior Planner - Trails Development

Legal Division: Kristina Kelchner, Assistant District Counsel, Rachel Sater, Assistant District Counsel

The following agencies contributed to the development of the LUPA

City of Orinda Staff:

Todd Trimble, Parks and Recreation Director

Contra Costa County:

Jim Stein, Contra Costa County Surveyor, Engineering Services Division

Environmental Regulatory Agencies

Regional Water Quality Control Board: Jenna Tuttle; Tahsa Sturgis; Katie Hart

US Fish and Wildlife Services: Valerie Hentges

US Army Corps of Engineers: Francis Malamud-Roam

Consultants

The following consultants contributed to the development of the LUPA:

Caltrans, Geotechnical study and funding

ESA, Engineering, CEQA, and Permitting

LSA, CEQA

Stantec, Creek Feasibility Study

Susan Imboden, Oral Historian; Historic Land Uses

6.2 References

6.2.1 Documents

A3GEO. 2016. *Geotechnical Investigation Report, McCosker Stream Restoration and Recreational Infrastructure Project, Robert Sibley Volcanic Regional Preserve, Contra Costa County, California.*

Alameda County. 2012. *Alameda County Pedestrian Vision System North Planning Area.*

Alameda-Contra Costa Biodiversity Working Group, Caldecott Corridor Committee. 2001. *Resource Management Plan for the Caldecott Wildlife Corridor.*

Alta Planning and Design. 2011. *City of Orinda Bicycle, Trails and Walkways Master Plan. Prepared for City of Orinda.*

California State Parks, Accessibility Section Acquisition and Development Division. 2001. *Trail Plan for Accessibility in California State Parks.* Updated December 2003.

California State Parks. *Section 20.9 of California State Parks Trails Handbook.* No date.

California State Parks. *Section 20.6 of California State Parks Trails Handbook.* No date.

City of Oakland. 1996. Open Space, Conservation, and Recreation (OSCAR) Element – An Element of the Oakland General Plan. June 1996. Accessed April 2017.
<http://www2.oaklandnet.com/government/o/PBN/OurServices/GeneralPlan/DOWD009017>.

_____. 1998. Land Use and Transportation (LUTE) Element – An Element of the Oakland General Plan. March 1998. Accessed April 2017.
<http://www2.oaklandnet.com/government/o/PBN/OurServices/GeneralPlan/DOWD009015>.

_____. 2007. *Bikeway Network, City of Oakland Bicycle Master Plan (December 2007) part of the Land Use and Transportation Element of the General Plan for Oakland*. Updated in 2012. Oakland, CA. Accessed April 2018.
<http://www2.oaklandnet.com/oakcal/groups/pwa/documents/report/oak024981.pdf>.

City of Orinda. 1987. *City of Orinda General Plan 1987-2007*.

_____. 1999. *Gateway Valley Development and Pre-Annexation Agreements Appendix A: Land Use Plan – Blacklined*. March 26, 1999]

_____. 1999. *First Amendment to Development and Pre-annexation Agreement between the City of Orinda and Orinda Gateway, LLC, Successor to Pacific New Wave Corporation for Development of Gateway Valley*.

_____. 2001. *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*.

_____. 2011. *Bicycle, Trails and Walkways Master Plan*.

City of Orinda Staff. 1999. *Orinda City Council Meeting – Staff Report Agenda Item J-1*. March 30, 1999.

Contra Costa County. 1978. Health Department. *Contra Costa County Septic Tank Moratorium Areas*.

_____. 2005. *Contra Costa County General Plan 2005-2020*.

_____. 2009. *Contra Costa County Bikeway Network: Southwest and Central County*.

East Bay Regional Park District. 1941. *Original Round Top Lands*. Oakland, California.

_____. 1987. *Pest Management Policies and Practices Manual*. Resolution No: 1987-11-325. October 1987.

_____. 1989. *Resolution 1989-4-124 approval of EBRPD Guidelines for Protecting Parkland Archaeological Sites*.

_____. 1999. *Letter to Mr. William D. Foote, Subject: Proposed Montanera Project Mitigation at the McCosker Property near Orinda*.

_____. 2004 *Initial Study and Propose Mitigated Negative Declaration for Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment (The former Stone, Conley, Uhland, Lerman and Rediger Properties, Contra Costa County, California).*

_____. 2005. *Response to Comments and Final Changes to the Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment, Initial Study, and Mitigated Negative Declaration.*

_____. 2006. *Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment. Resolution No: 2006-1-14.*

_____. 2007. *The Status of the California Tiger Salamander (Ambystoma californiense), California Red-legged Frog (Rana draytonii), Foothill Yellow-legged Frog (Rana boylei), and other Aquatic Herpetofauna in the East Bay Regional Park District, California.*

_____. 2009. *Wildfire Hazard and Resource Management Plan EIR, Appendix C.*

_____. 2013. *Master Plan 2013.* Resolution No. 2013-07-159. Oakland, California. July 2013.

_____. 2016. *Ordinance 38 Rules and Regulations.* Revised April 2016.

East Bay Regional Park District and OG Property Owner LLC. 2008. *First Amendment to Donation Agreement [by and between the East Bay Regional Park District and OG Property Owner LLC].*

_____. 2010. *Fifth Amendment to the Development and Pre-annexation Agreement for Gateway Valley between the City of Orinda and OG Property Owner, LLC.* Approved April 13, 2010.

_____. 2016. *Seventh Amendment to the Development and Pre-annexation Agreement for Gateway Valley between the City of Orinda and OG Property Owner, LLC.* Approved July 22, 2016.

Edwards, Stephen. 1983. *Ancient Volcanic Features of the Berkeley Hills, Contra Costa County, California Geology.*

_____. *Introduction and Key to the Geologic Map of Sibley Regional Preserve, Regional Parks Botanic Garden* (unpublished – no date).

_____. *Notice of the Discovery of Volcanoes in the Oakland-Berkeley Hills. Department of Paleontology, University of California, CA and Regional Parks Botanic Garden.* (unpublished – no date).

ENGEO Incorporated. 2001. *Phase One Environmental Site Assessment, McCosker Land and Cattle Company Property Canyon, California [Project No. 4365.1.051.01]* prepared for Orinda Gateway, LLC, Orinda California.

ESA. 2016. *McCosker Stream Restoration Project Cultural Resources Survey and Inventory Report.*

_____. 2016. *McCosker Creek Restoration Habitat Assessment.*

Fentress, Jeffery Boland, PhD. 2009. *Archaeological Reconnaissance of Sibley Volcanic Regional Preserve in the Vicinity of CA-ALA-581, Alameda County, California.*

Foss, Roxane Hulme. 2016. *A Review of Ecological Grazing Management Approaches Applicable to EBRPD Rangelands*. (Reviewers, J. Bartolome, F Ratcliff, B. Wallace)

Hill, Ward. 1997. *Historical Architecture Conley Houses, Contra Costa County, California*.

Imboden, Susan. 2013. *Dwayne McCosker Regarding the McCosker Ranch, Robert Sibley Volcanic Regional Preserve, Contra Costa County*.

Lane, Beverly. 2012. *Before BART: Electric Railroads Link Contra Costa County*. Contra Costa County Historical Society, Danville, California.

LSA Associates, Inc. 2010. Wildland Resource Management, Inc., Baseline Environmental Consulting; Prepared for East Bay Regional Park District. *East Bay Regional Park District Wildfire Hazard Reduction and Resource Management Plan*. June 2010, Resolution No. 2010-4-104.

Lawler, David, Lawyer and Associates. 1990. *Paleontological Resources Inventory Project, East Bay Regional Park Areas, San Francisco-East Bay Area, Alameda - Contra Costa - Santa Clara Counties, California*.

Linsdale, J.M. 1951. *The Dusky-Footed Woodrat*. University of California Press, Berkeley.

Levy, Richard. 1978. "Costanoan", In *California*, edited by Robert F. Heizer, pp. 485-495, Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Lewis, Chris. 1997. *Tunneling into the Past*. The Oakland Tribune.

Markert, Samantha B. J. 1985. Contra Costa County Public Works Department. *R/P – Old Tunnel Road W.O. 1733*.

Milliken, Randall, *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*, Ballena Press, Menlo Park, CA, 1995.

Milliken, Randall, Laurence H. Shoup, and Beverly R. Ortiz, *Ohlone/Costanoan Indians of the San Francisco Peninsula and their Neighbors, Yesterday and Today*, prepared by Archaeological and Historical Consultants, Oakland, CA, prepared for the National Park Service, Golden Gate Recreation Area, San Francisco, CA, 2009.

Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier, and David A. Fredrickson, "Punctuated Cultural Change in the San Francisco Bay Area", In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 99-124, AltaMira Press, Lanham, MD, 2007.

Mundie & Associates and The City of Orinda. 1992. *Gateway Valley 90/10 Plan, Draft Environmental Impact Report*.

Power Engineers, Inc. 2004. *[Draft for Review Purposes Only] Routing Study for the Existing 115kV Electrical Transmission Lines on the Montanera Project Orinda, California.*

Royston Hanamoto Alley & Abey, Landscape Architects & Larry Seeman Associates, Inc. 1985. Natural Resource Management. Prepared for East Bay Regional Park District. *Robert Sibley Volcanic, Huckleberry Botanic, and Claremont Canyon Regional Preserves Resource Analysis.* Resolution No. 1985-03-1517.

_____. 1985. Natural Resource Management. Prepared for East Bay Regional Park District. *Robert Sibley Volcanic Regional Preserve, Huckleberry Botanic Regional Preserve, and Claremont Canyon Regional Preserve Final Land Use Plan/Environmental Impact Report.* Resolution No. 1985-09-281.

Ruppenthal, Mark. 2013. *Memorandum Re: Western Hills, McCosker, Sibley LUP.* East Bay Regional Park District Police Department.

Sawyer, Keeler-Wolf and Evens. 2009. *A Manual of California Vegetation, 2nd Edition.*
<http://www.cnps.org/cnps/vegetation/manual.php>

Sorricks, Muir. 1970. *The History of Orinda, Gateway to Contra Costa County.*

Stantec Consulting Service, Inc. 2014. *The McCosker Feasibility Report: Daylighting an Unnamed Tributary on The McCosker Property.*

State of California – The Resources Agency, Department of Parks and Recreation. 2000. *Primary Record # P-01-002186, CA-ALA-581.*

Stebbins, R. C., and McGinnis, S. M. 2012. *Field Guide to Amphibians and Reptiles of California: Revised Edition (California Natural History Guides)* University of California Press.

TRC. 2016. *Technical Memorandum, McCosker Restoration Project, Soil Quality Evaluation.*

Town of Moraga. 2016. *Moraga Walk Bike Plan.* Adopted October 2016.

United States Department of Agriculture Soil Conservation Service. 1977. *Soil Survey of Contra Costa County.*

University of California Agriculture and Natural Resources. 2015. *ANR Publication 8517 Understanding Working Rangelands – The benefits of Livestock Grazing California's Annual Grasslands.*

Wagstaff and Associates, prepared for the City of Orinda. 1998. *Final Supplemental Environmental Impact Report for the Montanera Project in the Gateway Valley [SCH Number 91103062] – Volume I: Final SEIR Text.*

_____. 2004. *Draft Second Supplemental Environmental Impact Report for the Montanera Project in Gateway Valley [SCH Number 91103062]-Second Amendment to Development Agreement: 2004 Development Plan.*

Wildlife Heritage Foundation. 2006. *Wildlife Heritage Foundation Perpetual Conservation Easement Endowment Agreement for the Montanera Project. Western Hills Open Space Management Oversight Endowment.*

Wetlands Research Associates (WRA), Inc. 2003. *Fuel Management Plan for the Montanera Project, Orinda, California.*

_____. 2006. *Long-term Management Plan for the Montanera Project, Western Hills Open Space.* June 27, 2006.

_____. 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.

6.2.2 Websites

2011-2015 American Community Survey 5-Year Estimates. c2017. American FactFinder. United States Census Bureau. <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml> accessed April 2017.

City of Oakland. 2017. List of Active Major Development Project Proposals / Summer 2017. Website: <http://www2.oaklandnet.com/oakcal/groups/ceda/documents/agenda/oak065129.pdf>. Accessed December 2017.

East Bay Trails. c2018. East Bay Municipal Utility District. <http://www.ebmud.com/recreation/east-bay/east-bay-trails/> accessed February 1, 2018.

Land and Water Conservation Fund. c2018. California Department of Parks and Recreation. https://www.parks.ca.gov/?page_id=21360 accessed March 2018.

San Leandro Creek Watershed. c2016. Alameda County Flood Control and Water Conservation District. <http://www.acfloodcontrol.org/resources/explore-watersheds/san-leandro-creek-watershed/> accessed March 2018.

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

Wild California Plants. c2018. Calflora. www.calflora.org accessed March 2018.

6.2.3 Personal Communications

6.2.3.1 District Staff

Alexander, Pete. *Unpublished data on fish in the Upper San Leandro Creek tributaries draining the Western Hills Open Space and McCosker Parcel Watershed.* August 2013.

Bell, Doug. Wildlife Program Manager, *Unpublished data on birds.* 2017

Hammond, Michelle, Botanist, Stewardship, East Bay Regional Park District, *Unpublished data on botanic resources in the Project area.* 2018.

Marshall, Duncan, Field/Office Survey, Survey Unit, EBRPD, *Communication,* March 22, 2018.

Norton, Matt, Sanitation Recycling Supervisor. *Unpublished data on District sanitation systems*

Riensch, D., Wildlife Biologist. Wildlife Biologist, EBRPD, *Unpublished data on wildlife resources in the Project area.* October 13, 2017.

Stein, Jim, Contra Costa County Surveyor, Engineering Services Division, *Communication.* March 22, 2018.

Sullivan, Joe, Fisheries Program Manager, Stewardship, EBRPD, *Unpublished data on fish in the Upper San Leandro Creek,* 2018.

Vargas, Nadine, Admin Analyst, Finance, EBRPD, *Money spent on McCosker Residence.* June 2013.

Appendices



This page is intentionally blank